TOURIST SATISFACTION WITH ROAD TRANSPORT SERVICES AT THE DESTINATION

A Thesis submitted to Goa University for the Award of the Degree of

DOCTOR OF PHILOSOPHY

in

MANAGEMENT

By

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UNDER THE GUIDANCE OF

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GOA UNIVERSITY,

TALEIGAO GOA

2019

DECLARATION

I, Anjali Rajendra Virkar, do hereby declare that this dissertation titled "**Tourist Satisfaction with Road Transport Services at the Destination**" is a record of original research work done by me under the supervision of Dr. Prita D. Mallya, at the Research Centre in Management Studies, VVM's Shree Damodar College of Commerce & Economics, Margao-Goa, Goa Business School, Goa University, Goa.

I also declare that this dissertation or any part thereof has not been submitted by me for the award of any Degree, Diploma, Title or Recognition before.

Anjali Rajendra Virkar

Place: Goa University

Date:_____

CERTIFICATE

This is to certify that the Ph.D. thesis titled "**Tourist Satisfaction with Road Transport Services at the Destination"** is an original work carried out by Anjali Rajendra Virkar under my guidance, at the Research Centre in Management Studies, VVM's Shree Damodar College of Commerce & Economics, Margao- Goa, Goa Business School, Goa University, Goa.

This dissertation or any part thereof has not formed the basis for the award of any Degree, Diploma, Title or Recognition before.

Dr. Prita D. Mallya

Research Guide

Place: Goa University

Date: _____

DEDICATION

This thesis is dedicated to my parents

Mr. Rajendra T. Virkar and Mrs. Asha Rajendra Virkar

my father-in law Mr. K.R Balan,

my mother-in-law Mrs. Parvathy Balan

my husband, Mr. Sajilal K.B

&

to my children, Gautam and Gaurish

who always encouraged me towards higher academic pursuits.

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Anjali Rajendra Virkar

Tourist Satisfaction with Road Transport Services at the Destination

By

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ABSTRACT

Tourism is much about travel, and therefore, the role of transportation in its operation is vital. Although many tourism studies have acknowledged the role of transport as a significant variable in tourism development, one area that has received little attention is the relationship between attributes of road transport services at the destination and tourist satisfaction with these services at the destination.

This research has measured tourist satisfaction with road transport services at the destination. The study identified transport accessibility, perceived performance and perceived value as attributes of road transport services and tested their relationship with tourist satisfaction. Transport accessibility is the construct developed for this study by exploring the components of road transport services that are necessary and essential for tourism activities at the destination.

This study has adopted Johnson and Fornell's (1991) Framework Of Customer Satisfaction to identify the attributes of road transport services and their relationship with tourist satisfaction is analysed using Structural Equation Modelling. The moderating role of mode of transport on the attributes of road transport services and tourist satisfaction with these services at the destination is examined in this study. The study has also adopted Importance-Satisfaction Analysis to identify the service quality

attributes which are important and influence satisfaction with the road transport services at the destination and analysed them using Kano's Customer Satisfaction theory and Matzler's three-factor theory.

The unit of analysis for the study is the tourist using local road transport services, which includes Public bus transport (Kadamba Transport Corporation Limited), Private bus transport, Sightseeing vehicles arranged by hotels and tour operators, Government sightseeing vehicles, Taxi/ Cab, Motorcycle taxi (Pilot), Rent a bike/ car and Auto rickshaw.

The analysis indicated that

1) Transport accessibility, perceived performance and perceived value are found to be the attributes of the road transport services affecting tourist satisfaction with road transport services at the destination.

2) Transport accessibility has a positive and significant relationship with tourist satisfaction with road transport services at the destination.

3) The relationship between transport accessibility and tourist satisfaction with road transport services at the destination is fully mediated by perceived performance implying that tourists are satisfied with the performance of transport services which provide better access to tourist sites.

4) The relationship between transport accessibility and tourist satisfaction with road transport services at the destination is partially mediated by perceived value, which shows that price and quality have an effect on tourist satisfaction, but not to a large extent.

5) In the present study, the Tourist Satisfaction Index for transportation services is calculated based on the structural equation model in which tourist satisfaction is evaluated with respect to its antecedents. The Tourist Satisfaction Index indicated that tourists are most satisfied with the services provided by the private bus operators.

6) Mode of transport moderates the relationship between transport accessibility, perceived performance and perceived value and tourist satisfaction with road transport services at the destination.

7) Service quality attributes identified by the study such as information provision, comfort, terminals and stops, safety, price and physical conditions of the vehicles are important for tourist and affect their satisfaction. These findings would help the transport service providers to take corrective measures towards improving their performance and enhance tourist satisfaction.

For academic research, the study has developed the transport accessibility construct as an essential attribute of the road transport services at the destination by identifying and analyzing components of the road transport services influencing tourist satisfaction with road transport services at the destination. Perceived performance and perceived value are the other attributes identified in this research. For tourism and transport service providers, the study has identified the relationship between attributes of road transport services and tourist satisfaction with these attributes at the destination and also the service quality attributes as perceived by the tourist and influence their satisfaction.

The study has made some theoretical and managerial contributions which would be of great help to academicians and transport service providers. The study has also outlined the directions for future research, which could guide future researchers to extend the work in this area.

Keywords: Attributes of road transport services at the destination, Tourist Satisfaction Index, Moderating role of modes of transport, Importance-Satisfaction Analysis, Service Quality Attributes.

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ABBREVIATIONS

ACSI	American Customer Satisfaction Index
AVE	Average Variance Extracted
CR	Composite Reliability
CSV	Comma-Separated Values
GPS	Global Positioning System
HKCSI	Hong Kong Customer Satisfaction Index
HOHO	Hop-On Hop-Off
HOLSAT	Holiday Satisfaction Model
HTMT	Heterotrait-Monotrait Ratio
I-CVI	Item Content Validity Index
IPA	Importance Performance Analysis
ISA	Importance-Satisfaction Analysis
KTC	Kadamba Transport Corporation
MMR	Moderated Multiple Regression
NA	No. of Agreements
SCSB	Swedish Customer Satisfaction Barometer
S-CVI	Scale Content Validity Index
SD	Standard Deviation
SEM	Structural Equations Modeling
SPSS	Statistical Package for Social Sciences
SRMR	Standardized Root Mean Square Residual
SWOT	Strengths, Weaknesses, Opportunities and Threats
PLS	Partial Least Squares
PLS–SEM	Structural Equations Modeling using Partial Least Squares
TAC	Total Access Cost
TSI	Hong Kong Tourist Satisfaction Index
VAF	Variance Accounted For
VIF	Variance Inflation Factor

CHAPTER 1

INTRODUCTION

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1.1 INTRODUCTION

Transport is an integral part and key enabler of the tourism industry. Tourism literature acknowledges the significance of the transport system for tourism. Transport plays a vital role in moving tourists from their place of residence to their destination and on to various attractions. Transport facilitates the internal movement of visitors between components of the tourist experience such as attractions, accommodation, and commercial services, which significantly influences the mobility of visitors and the connectivity of tourist experiences within destinations.

As transport is an essential link between all the elements of tourism at destinations, good accessibility is instrumental for the overall competitiveness of destinations. The provision of suitable infrastructure and adequate means of transportation are fundamental requirements to facilitate the mobility of tourists. Transport systems and services themselves can be at the heart of tourist activities as the tourists seek a transport system that is safe, comfortable and reasonably priced.

1.2 BACKGROUND OF THE STUDY

Tourism is a lot about travel, and therefore, the role of transportation in its operation is vital. It is mainly due to the improvement of transportation that tourism has expanded. Improved transport facilities have stimulated tourism, and in turn, the expansion of the tourism industry has stimulated transport.

Leiper (1979) defines tourism as "the system involving the discretionary travel and temporary stay of persons away from their usual place of residence for one or more nights. The basic elements of this system are tourists, generating regions, transit system, destinations and tourist industry. These five elements are arranged in spatial and functional connections". In the tourism system, the transportation element connects tourist generating and destination region via transit routes (Leiper, 1990). A transport system acts as a bridge between the place of tourist origin and destination.

Given its criticality for tourism, transport is, and has long been, a part of tourism studies. The transport requirements of the tourism industry are different from other sectors in terms of quality, nature of services and cost, comfort, safety and facilities.

Kaul (as cited in Prideaux 2000) recognises the importance of transport as an essential component of successful tourism development and states that "transport plays an important role in the successful creation and development of new attractions as well as the healthy growth of existing ones. Provision of suitable transport has transformed dead centres of tourist interest into active and prosperous places attracting multitudes of people". Page and Lumsdon (2004) postulates that the transportation system of a tourist destination, which involves how people travel, their choice of forms of holiday destination and transport mode, has an impact on the tourism experience.

Prideaux (2000) defines Tourism transport system as "the operation of, and interaction between, transport modes, ways and terminals that support tourism resorts in terms of passenger and freight flow into and out of destinations, the provision of transport services within the destination and the provision of connecting transport modes in the tourism generating region."

Hall (1999) identified four different roles of tourism transport: 1) transport to get to the host destination, 2) transport to ensure mobility within a destination, 3) mobility within a tourist attraction, and 4) travel along recreational routes. According to Page (as cited in Lohmann & Duval, 2011) transport is essential for tourism as it (a) facilitates the movement of tourists between their place of origin and their destination and (b) acts as the means of movement of tourist within a destination, thus allowing for a wider dispersal of visitor movement, and as a result, maximum exposure of visitor flows to areas perhaps not otherwise possible.

The transportation mode selected by tourists during their visit influences their movement patterns (Zoltan, 2014). For tourism at the destination, the modes of transportation are the most critical factor for movement of tourist within the destination which is influenced by factors such as places of travel, availability of a particular mode, time of travel, distance to be covered, cost consideration, comfort, safety flexibility and suitability. According to Page and Lumsdon (2004), the nature of the tourism transport

experience is defined either by a single-mode or a combination of transport modes, involves movement from one location to another, and satisfaction associated with the actual process of travelling.

The transport-tourism relationship is influenced by two critical attributes of the transport system, viz. accessibility and connectivity (Lohmann & Duval, 2011). In existing tourism studies, accessibility has been researched as the availability of transportation facilities and services (Abu Ali Assistant Al & Howaidee Assistant Al, 2012; Araslı & Baradarani, 2014; Ekiz & Khoo-Lattimore, 2014; Shahrivar, 2012). Tourism-transport research has studied the role of public transport and focused upon the use of public transport by users, including visitors, and how users perceive the services. The extant research does not explain the extent of influence that the mode of transport has on the relationship between attributes of public transport services and tourist satisfaction.

Studies on the use of public transport services have tried to research the factors of transport services influencing tourist satisfaction. Le-Klahn, Hall & Gerike(2014) investigated the use of public transport by tourists in the city of Munich, Germany, and found that the factors influencing tourists' use of public transport are travelling comfort, service quality, accessibility and additional features. Information, ticket price, service frequency, ease of use and comfort attributes were found to be the essential service aspects affecting overall satisfaction. Tyrinopoulos & Antoniou(2008) assessed the quality and performance of the transit systems in Athens and Thessaloniki in Greece, using a variety of performance and quality indicators such as on-time performance, average route speed, conditions at the terminals and stops, vehicle load,average route speed,conditions at the terminals and stops, safety, information provision, and accessibility. Factor analysis identified the quality of service, transfer quality, service production and information or courtesy as dimensions of passenger perception of the transit system.Through ordered logit analysis it was found that a well-coordinated and well-structured transportation environment along with service frequency and accessibility should be the primary aim of policymakers, and corrective measures placing more emphasis on service frequency, waiting time, and vehicle cleanliness are necessary.

Tourist satisfaction is important for successful destination marketing, as it influences (a) the decision of selecting a destination on the experience of the consumption of products and services (b) the decision to revisit (Kozak & Rimmington, 2000), and (c) tourists' emotional state after experiencing the trip (Baker & Crompton, 2000). Lai & Chen(2011) defined satisfaction as, "the extent of overall pleasure or contentment felt by the public transit passenger, resulting from the ability of trip experience to fulfil the passenger's relevant desire, expectations and needs".

Satisfaction can also be assessed by evaluating service quality, which is part of the process of forming satisfaction judgment in the hospitality industry(Petrick, 2004). Service quality reflects the movement across the gap between customer perceptions and customer expectations (C.H.Chen, 2009). Baker & Crompton (2000) assessed the relative impact and interrelationship of the quality of performance and satisfaction in the tourism field. The study concluded that organizers should focus on evaluating the perceived quality of the performance and satisfaction level of participants because enhanced performance quality leads to stronger behavioural intentions.

Singh (2012) stated that the satisfaction of a passenger with a public transport undertaking is a measure of how well the service level delivered matches the expectations of the traveller. Tourist satisfaction significantly influenced future behaviour and proved to be a mediating variable between attitude and future behaviour. The study concluded that tourist satisfaction and its measurement is an essential issue for tourism destinations and service providers. Customer satisfaction has also been researched as users' satisfaction, to investigate the quality of service attributes that affect their satisfaction, which may then affect overall satisfaction. Understanding attribute level satisfaction is important for destination marketing.

The Hong Kong Tourist Satisfaction Index (TSI) developed by Song et al. (2011) is an evaluation system to identify the relationship between the performance of individual service providers and a destination's overall performance as perceived by its inbound tourists.

Although many tourism studies have acknowledged the role of transport as a significant variable in tourism development, one area that has received little attention is the

relationship between attributes of road transport services and tourist satisfaction. In tourism and transportation research, it is important to measure tourist satisfaction with transportation services, to understand the extent to which tourist expectations are met. It will also provide valuable information to service providers about which aspects are essential for tourists and will help them improve their services accordingly (Virkar & Mallya 2018a). Literature in this area indicates that the transport system and its availability at the destination is one of the important determinants of tourist preference for the destination. The likelihood of tourists returning or revisiting a destination is enhanced, if they are satisfied with road transportation services at the destination.

The above discussion shows that there is scope for research in the areas of identifying the attributes of road transport services that are important for tourists, analyzing the relationship between attributes of road transport services and tourist satisfaction, and analyzing the extent of influence of the mode of transport on this relationship.

This study has been carried out in Goa, which is a destination that is on the international tourist map. The State is a highly popular destination for domestic as well as international tourists, as is evidenced by the number of visitors. This fact, as well as the fact that the sample has been drawn to cover domestic as well as foreign tourists, tourists entering Goa by all modes of transport and tourists staying at various categories of hotels, ensures its extrapolation to other destinations in India as well as abroad. Conclusions drawn from a study of tourism transport in the State will have wider relevance and applicability and are not limited to Goa alone.

1.3 TOURISM AND ROAD TRANSPORT SYSTEM AND SERVICES OF GOA

1.3.a Tourism in Goa

Goa is a tiny state in India sharing its borders with the Arabian Sea to the West, Maharashtra to the North and Karnataka to the South and the East (Goa State report 2019). It is traditionally known as a tourist paradise for its natural scenery, beautiful beaches and cultural diversity. Goa is a preferred holiday destination not only by domestic tourists but also international visitors for its rich and vibrant culture, cuisine,

heritage, wellness, adventure, food, performing arts, architecture, sports and handicrafts (www.traveltradejournal.com).

The Government of Goa is consistently making efforts to improve the facilities and infrastructure required for tourism and also promoting Goa as a tourist destination. Goa is an important destination for Coastal tourism, Cultural tourism and Nature-based and Eco-tourism. It is also now becoming a popular destination for Meetings, Incentives, Conferences, and Events (MICE), Leisure and Entertainment tourism, Health and Wellness tourism, Community and Culinary tourism. The State has earned recognition as the Most Preferred Destination for tourists in India (www.traveltradejournal.com.google India report 2017). The total number of tourists (domestic and international) was 77,85,693 during 2017, up from 63,30,744 in 2016 54,80,773 tourists visited Goa till October 2018 (Provisional) (www.goatourism.gov.in/statistics/333-tourist-arrival-statistics-2018).

As seen in Table 1.1 below, there is a continuous increase in the number of tourists arriving Goa. Tourism contributes significantly to the Gross State Domestic Product (GSDP) and helps the State achieve its objectives through increased direct and indirect jobs and economic growth. It is a key contributor to the Goan job market where people are mainly employed in hotels, restaurants and tourist transport sectors

Table1.1: Year wise distribution of Domestic and Foreign Tourist Arrivals

Year	Domestic	Foreign	Total
2000	976804	291709	1268513
2001	1120242	260071	1380313
2002	1325296	271645	1596941
2003	1725140	314357	2039497
2004	2085729	363230	2448959
2005	1965343	336803	2302146
2006	2098654	380414	2479068
2007	2208986	388457	2597443
2008	2020416	351123	2371539
2009	2127063	376640	2503703
2010	2201752	441053	2644805

2011	2225002	445935	2670937
2012	2337499	450530	2788029
2013	2629151	492322	3121473
2014	3544634	513592	4058226
2015	4756422	541480	5297902
2016	5650061	680683	6330744
2017	6895234	890459	7785693
Till October 2018 (Provisional)	4876359	604414	5480773

Source: Economic Survey, 2017-18 and 2018-19, Dept. of Tourism, Govt of Goa

1.3.b Road Transport Services of Goa

The transport system is an indicator of economic health and development of a State (Economic Survey 2017-18). Road transport is vital for economic development, trade and social integration. Transportation by road in the State of Goa is considered to be the dominant medium for both passengers and freight. Goa is connected to the rest of India through two major highways – NH17 and NH4A. Private vehicles, Taxis, Buses, Rent-a-bike/car, are the key modes of transport.

1.3.b.1 The road transport services of Goa

The transport system of Goa comprises of Kadamba Transport Corporation Limited (KTCL) linking Goa to all major routes of the state. It also consists of privately operated buses linking the major towns to the rural areas. The cities also have intra-city buses functioning efficiently. The system also comprises of hired forms of transport including taxis, auto rickshaws and also a unique mode of transportation in Goa - the motorcycle taxi locally known as “Pilots”. Many private buses and taxis form a major part of Goa’s public transport system.

1.3.b.2 Main modes of transport in Goa

a) **Bus transport:** Buses are the cheapest mode of transport to travel within Goa. Buses are mostly operated by the State-owned Kadamba Transport Corporation Limited, which has four bus depots, 15 bus stands and one central workshop in Porvorim. There are many privately owned bus services available in Goa. Private buses ply in all parts

of Goa and are of great help to tourists. There are also sightseeing bus services arranged by the Government, tour operators, travel agencies and hotels.

Recently the Goa Tourism Development Corporation has introduced The Hop-On Hop-Off (HOHO) Goa tourist bus service which is designed for tourists to see places in Goa at their leisure and according to a more relaxed and flexible schedule. The buses operate from 9 am to 6 pm and are available at designated stops at regular intervals of 1 hour. Tourists have to board the bus at any stop to start the visit, get off at the desired attraction and may again get into another or the same bus to go to the next attraction.

b) Taxi/ Car: Taxi or Car is another mode of transport which can be hired or rented to travel within Goa. There are two types of taxis available in Goa - private taxis, known as tourist taxis, available outside the Goa airport, railway stations, hotels and taxi stand at the popular tourist attractions. These taxis have an interstate permit which allows them to take tourists to the nearby places outside Goa. Another type is the regular yellow, black taxis at the taxi stand on prepaid or per day basis. Some companies provide both chauffeured and non-chauffeur driven cars for rental.

The Government of Goa has introduced some innovative taxi services including Women taxi and Goa-Miles app-based taxi services.

- Women taxi: Goa Tourism Development Corporation launched Women Taxi Service exclusively for women and families on October 16, 2014. These taxis are captained by well-trained Goan ladies known as Travel hostesses. The service offers safe and excellent travel facilities to visiting tourists and local population for travelling within the State of Goa. The vehicles are metered taxis and modern GPS gadgets for real-time location tracking, panic button services and two-way communication system with the control room are fitted in the taxis (Goa tourism, www.goa-tourism.com/women_taxi).

- Goa Miles app-based taxi services: The Government of Goa has introduced an app-based cab service called ‘Goa Miles’. Goa Miles offers the easiest way of booking and travelling by taxi in Goa at Government approved rates.

c) **Motorcycle, scooters and bicycles:** Motorcycle taxis are available for hire in Goa, locally known as “Pilot”. These taxis usually have yellow mudguards and carry only

one rider at a time. The Motorcycle taxi is a unique way of travelling in Goa and most preferred to travel short distances by a single traveller. Another form of motorcycle transport services includes hiring a motorbike, scooter or cycle on a rental basis, which is a self-driven vehicle. It is an economical and comfortable mode of transport for travelling within Goa.

The Goa Tourism Development Corporation has introduced India's first e-bike tourism initiative in partnership with Arcis Tours. The e-bike is a bicycle powered by rechargeable batteries, which looks like a cycle. There is no pedalling involved unless it is a steep hill. The bike has a GPS tracker, can reach a speed up to 25 kmph and has electronic disc brakes for enhanced safety. These bikes allow the tourist to explore attractions at his convenience and time.

4) Auto Rickshaw: An Auto rickshaw is a three-wheeler, with a seat for the driver in front and the back seat wide enough to accommodate three people. These auto rickshaws are available at stands located at specific places such as the railway station, bus stand, etc.

Table 1.2: Number of Motor Vehicles in Operation during 2012-13 to 2016-17

Vehicles	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	% change over 5 years
Buses/Mini-Buses (including KTCL)	9912	11,044	11,155	11438	11831	19.18
Taxis	15374	16,477	17,456	18267	19545	27.13
Motor cycles on hire	20430	21,830	23,514	25284	27034	32.33
Three Wheelers (auto rickshaw)	3882	4,020	4,085	4200	4336	11.70
Motor Cycles and Scooters	638697	689500	742166	795457	852441	33.47
Private Cars and Jeeps	183674	198708	215097	231179	249726	35.96

Source: Statistical Handbook of Goa

Table 1.2 shows the growth in road transport vehicles over the period of five years from 2012-13 to 2016-17. The figures show that there has been a consistent increase in the number of vehicles operating in Goa.

1.4 THE SIGNIFICANCE OF THE STUDY:

The above details about tourism and transport in Goa show that Goa is already a well-established tourist destination. Travelling around Goa is relatively easy. There is an extensive road network which connects most places in Goa with motorable roads. The road transport system in Goa comprises of public and private bus transport, taxi and cab, motorcycle taxi, auto rickshaw and cars or bikes on rent as modes of transport. However, the mere availability of a transport system is not sufficient for tourism; it should provide accessibility and services that satisfy the tourist. This study will focus on identifying the attributes of road transport services and analysing the relationship between the attributes of road transport services and tourist satisfaction.

1.5 STATEMENT OF THE PROBLEM

Research on transport in Goa is very sparse and has covered very few areas, viz. the spatial pattern of transport and communication system of Goa, (Badigar, 1994); a study of KTCL, (Parab, 1991); Quality of service in Passenger road transport, (Mekoth,1997); minibus operations in Goa, (Nadkarni, 1997). Although Goa is one of the most important tourist destinations in India with large numbers of international and domestic tourists visiting Goa every year, there is a lack of research covering the relationship between attributes of road transport services and tourist satisfaction at the destination.

Literature in this area indicates that the transport system and its availability at the destination is one of the important determinants of tourist preference. Road transport services which satisfy tourists will always enhance the likelihood of the tourist to return to the destination. Tourists are depended on local road transport services during their stay at any destination. Therefore a study identifying the attributes of road transport services, the relationship between these attributes and tourist satisfaction and also the quality of service attributes that satisfy the tourists, may contribute to improving transport facilities for tourism and assist in the future development of transportation services.

Understanding tourists' use of the road transport services at the destination is important for increasing destination competitiveness. The availability and quality of transport at the destination influences tourist experience and overall satisfaction and plays an

important role in attracting and retaining tourists. Also, it is worthwhile examining tourists' perception of services delivered by road transport service providers in terms of importance attached to the service attributes and satisfaction derived.

1.6 THE SCOPE OF THE STUDY

This study is restricted to tourists having adequate knowledge of and using transportation services in Goa. The geographic area of the study is limited to the State of Goa.

This study has identified attributes of road transport services viz. transport accessibility, perceived performance and perceived value and established the relationship between these identified attributes and tourist satisfaction with road transport services at the destination.

This study has adopted Johnson and Fornell's Framework of Customer Satisfaction (1991) to identify the attributes of road transport services and their relationship with tourist satisfaction is analysed using Structural Equation Modeling. The moderating role of mode of transport on the attributes of road transport services and tourist satisfaction with these services at the destination is examined in this study. The study has also adopted Importance-Satisfaction Analysis to identify the service quality attributes which are important and influence satisfaction with the road transport services at the destination.

1.7 PURPOSE OF THE STUDY

The purpose of the study is to

a) identify the attributes of transport services and the relationship between attributes of road transport services and tourist satisfaction by applying Fornell et al. (1996) American Customer Satisfaction Model and Song et al. (2011) Hong Kong Tourist Satisfaction Model.
b) calculate Tourist Satisfaction Index for the modes of transport used by the tourist based on the structural equation model implied loadings (Song et al., 2011)

c) identify the service quality attributes of the road transport services which might be considered important and may also influence tourist satisfaction during their visit by applying Importance-Satisfaction Analysis.
d) examine the perceptions of tourists in Goa with regard to importance and satisfaction concerning the service attributes of the transport services by applying Kano's Model Of Customer Satisfaction.
e) determine the role of mode of transport in influencing the relationship between attributes of road transport services and tourist satisfaction by applying moderation analysis.

For academic research, the study proposes to develop the transport accessibility construct as an essential attribute of the transport services by identifying and analysing components of the road transport system influencing tourist satisfaction with road transport services at the destination. Perceived performance and perceived value are the other dimensions identified in this research. For tourism and transport service providers, the study proposes to identify the relationship between attributes of road transport services and tourist satisfaction, and also the service quality attributes as perceived by the tourist. The findings of the research will assist service providers in deciding which attributes should be focused upon so as to enhance tourist satisfaction.

1.8 RESEARCH QUESTION

The identified research problem is necessary to be translated into one or more research questions to make it researchable (Patkar, 2004). The research question is formulated considering the gap identified in the literature of transport and tourism. Although most tourism literature acknowledges transport as an overall element in any successful program of tourism development, there has been relatively little research undertaken on the relationship between transport and tourism (Prideaux, 2000). This study attempts to identify the attributes of road transport services that affect tourist satisfaction in general and also with different modes of transport, as mere availability of road transport services is not sufficient for tourism; transport should provide accessibility and services which will satisfy the tourist at the destination.

The relevant research question framed is

"Which service quality attributes of road transport services influence tourist satisfaction with these services at the destination?"

Sub-questions

1. Do tourists' perceptions of transport accessibility, performance and value influence their satisfaction with road transport services at the destination?
2. What is the level of tourist satisfaction with various modes of transport at the destination?
3. Does mode of transport have any influence upon transport accessibility, perceived performance, perceived value and tourist satisfaction?
4. Which quality attributes of road transport services do tourists consider to be important? Are tourists satisfied with the performance of road transport services with respect to service quality attributes?

1.9 RESEARCH OBJECTIVES:

Based on the research questions the research objectives were framed to understand the relationship between attributes of road transport services and tourist satisfaction at the destination. In addition to identifying the attributes of road transport services, it was found necessary to study whether the mode of transport influences the identified relationships. The study also examines the tourists' perception of service quality attributes delivered by transportation services and their influence on satisfaction.

The research objectives are:

1. To determine whether tourists' perception of transport accessibility, perceived performance and perceived value have any influence upon their satisfaction with road transport services at the destination.
2. To determine the level of tourist satisfaction with various modes of transport at the destination.
3. To determine whether the mode of transport influences the relationship between transport accessibility, perceived performance, perceived value and tourist satisfaction.

4. To examine tourists' perception of services delivered by transport service providers in terms of importance attached to the service attributes and satisfaction derived.

1.10 RESEARCH PLAN

The research process started with a detailed review of the literature that provided the necessary background for this research including literature on transport and tourism, tourist satisfaction and attributes of road transport services. Due to the multidisciplinary nature of transportation and tourism research, it was necessary to have an extensive review of the literature and develop a better understanding of the research topic. The literature search was conducted using online, international journal databases in order to capture the full range of published academic research in the field. The review of the literature undertaken helped to understand the current state of knowledge in the domain and exposed the potential areas that could be investigated.

In the second stage, a preliminary survey of 120 tourists was conducted in order to understand tourist behaviour in respect of the use of transport services and to identify the factors influencing their satisfaction. Based on the survey, the components of transport services influencing tourist satisfaction were identified and used in the research. The summary of responses from the customers and the findings of the survey along with the review of literature enabled the identification of the attributes.

In the third stage, existing theories were reviewed to provide the theoretical basis for this research which seeks to predict the relationship between the attributes of road transport services and tourist satisfaction. The review of literature provided the measurement items and predesigned measurement items for the latent constructs and service quality attributes, whereas a scale was developed for the construct transport accessibility. Content Validity was ascertained to test the validity of the developed scale.

In the fourth stage, the data for the quantitative study was collected by way of questionnaires personally administered to respondents, selected by awareness and use of transport services and willingness to participate. The data collected from 606

questionnaires was entered using SPSS Version 22. The data analysis was carried using SEM (Structural Equations Modeling) using PLS software, Importance-Satisfaction Analysis and Moderation analysis. The hypotheses were tested and conclusions drawn.

1.11 ORGANISATION OF THE THESIS

Chapter 1 Introduction: This chapter includes the background of the study, tourism and road transport services of Goa, the significance of the study, statement of the problem, the scope of the study, the purpose of the study, research question, research objectives, research plan and the organization of the thesis.

Chapter 2 Literature Review: This chapter presents a review of the relevant literature in the areas of transport and tourism, public road transport services, mode of choice and decision making, attributes of road transport services, tourist satisfaction, theories applied in the research on tourist satisfaction and quality of service and finally, presents the gaps identified in literature.

Chapter 3: Research Methodology: This chapter provides an outline of the research methodology adopted in the study. It contains details of research design, unit of analysis, sampling, sample size, data collection tools, data collection procedure and data analysis procedure followed.

Chapter 4 Development of Hypotheses and Scale: This chapter deals with the development of the conceptual model, development of hypotheses, the definition of terms, the development of scales for the constructs and evaluating measurement and structural models using Partial Least Squares.

Chapter 5 Analysis and Results- Structural Equation Modeling Analysis (Objectives 1& 2): This chapter presents the analysis and results of Objectives 1 and 2 using 'Structural Equation Modeling-Partial Least Squares' including measurement and structural models, the mediating role of perceived performance and perceived value, and development of a Tourist Satisfaction Index (TSI) for Transportation Services in Goa.

Chapter 6 Analysis and Results-Moderation Analysis (Objective 3): This chapter presents the analysis and results of Objective 3 using moderated multiple regression

analysis with the help of Process Macros for SPSS Version 3.1 developed by Hayes (2018).

Chapter 7 Analysis and Results-Importance Satisfaction Analysis (Objective 4): This chapter presents the analysis and results of Objective 4 using Importance-Satisfaction Analysis for transportation services in Goa.

Chapter 8: Summary and Conclusion: This is the last chapter, which summarizes the findings of the study, outlines the contributions, lists the managerial implications of the study and suggests areas of possible future research work in the area.

CHAPTER 2

REVIEW OF LITERATURE

CHAPTER 2

REVIEW OF LITERATURE

2.1 INTRODUCTION

This chapter presents a broad review of the literature that provides the necessary background for this research and includes a review of the literature on transport and tourism, tourist satisfaction and attributes of the transport system. Due to the multidisciplinary nature of transportation and tourism research, literature from disciplines such as transport planning and engineering, tourism, economics, geography, management and psychology has been reviewed to develop a better understanding of the research topic. Existing theories in the domain of tourist satisfaction that were used in previous studies were probed, to develop a conceptual model for tourist satisfaction with the attributes of road transport services in Goa.

The chapter is organized in the following sections:

1) Studies on transport and tourism, the public transport system and selection of mode of transport..

2) Studies on attributes of road transport services at the destination.

3) Studies on tourist satisfaction, quality of service and its relationship with tourist satisfaction with road transport services at the destination.

4) Theoretical background

5) Gaps in the existing literature

2.2 STUDIES ON TRANSPORT AND TOURISM, THE PUBLIC TRANSPORT SYSTEM AND SELECTION OF MODE OF TRANSPORT

Tourism is, "the theory and practice of touring, travelling for pleasure" (Oxford English Dictionary) and therefore, the role of transportation in its operation is vital. Studies in the area of transport and tourism have acknowledged the role of transport as a significant variable in tourism development, relationship of transport infrastructure with travel behaviour and its effect on mode of choice, tourism policy and its effects on tourist arrivals, public transport system and mode of choice affecting

their decisions. The review of literature in this section highlights the studies covering different aspects of transport and tourism-related research.

2.2.1 Transport and Tourism

Hall (1999) identified the gap that existed in the transport and tourism literature concerning the identity, role, analysis and conceptualisation of tourism transport and explored the relationship between host communities, tourists and the tourism industry. The study focused on the role of tourist mobility at a local level, from the supply side of tourism transport, which covers providing mobility and access within a destination, which is itself the tourism experience and also critical for issues of inequality and externality effects. The study concluded that transport and land use planners need to recognise and respond to tourism's externalities and their implications for inequality and sustainability issues.

Prideaux (2000) tried to identify the significance of the transport system as a factor in the development of the destination and developed a transport cost model that identifies Transport Access Cost (TAC) as one of the key categories among total holiday cost (the others are discretionary spending and accommodation cost at the destination). For the study, transport access cost refers to the demand side costs, including actual fare paid for the travel, the value of the time taken for the journey and cost of the comfort of travel required. The model was used to identify the significance of transport as a factor in destination development and the reason for selecting a destination. The study found that transport is a significant factor for both destination development and the competing market, as increased distance generally leads to increased transport access costs as a significant factor in the total holiday cost.

According to Hall (2004) the role of tourism transport, its use in and provision in Scotland is important and deserves more coherent policy attention; also, sustainability is a key strategy concept in both transport and tourism policies. Musa (2011) examined the relationship between transportation and the development of tourism in Nigeria. The study found that some of the national parks are well connected while others are poorly connected and concluded that transportation is a significant determinant of tourism development in Nigeria. The role of transport in the

development of tourism was researched by exploring the scope, role and nature of the relationship between tourism and transport stakeholders in island communities in Scotland and its influence on local economic development and destination sustainability (Currie & Falconer, 2014). The study found that transport was recognised as a key element of the overall experience, and the relationship between transport and tourism was considered to be more than service provision.

Georgescu (2015) studied the interdependence of tourism and road transport network and concluded that road transport plays a vital role in the tourist travel market, both domestic and international. In a study to define the interdependence of transport and tourism in the development of Croatian tourism, Kovačić & Milošević (2016) analysed the importance of transport infrastructure, means of transport and quality of transportation services available at the tourist destination, which are considered essential by a tourist and have great significance in choosing a destination. The availability of transport at the tourist destination becomes part of the tourist experience and can have a positive or negative effect on the impact of the tourist's stay at the destination. The study found that availability of super luxurious transportation services, transportation services outside regular use or unusual transportation services and travelling by such types of vehicles may become a tourist attraction itself.

These studies have highlighted how transport is an important factor for the development of tourism, and also plays a vital role in the selection of a tourist destination, and tourist arrivals at the destination .Further review of literature was carried out to understand the effect of transport infrastructure on travel behaviour and its effect on selection of the mode of transport.

2.2.2 Transport infrastructure as a factor of tourism development

In a study to investigate the importance of transportation capital in overall destination attractiveness, Boopen (2005) identified and quantified the factors that made Mauritius attractive to tourists. Using a time series approach, the study concluded that the transport capital stock of the country has been contributing positively to the number of tourist arrivals in the short and long run. Travel behaviour significantly differs across income and life-cycle groups (Kathiyapornpong, 2006); the study

investigated the relationship between a wide range of short and long trip planning and travel behaviour using demographic and socio-economic variables as travel constraints.

Studies in this area have researched the role of transport infrastructure as a factor for the development of tourism. Lumsdon (2006) explored the principles underpinning the planning and design of a tourism bus service network; two different approaches emerged regarding design 1) Bespoke approach which places emphasis on the need to design for the tourist transport experience and 2) Conventional approach which is designed to meet the needs of all users but may be modified to accommodate the desires of tourists. The design of the bus network was associated with traffic management at the destination, provision of the bus as a way of enabling access to and within the destination, and provision of training to drivers to operate the tour buses. Khadaroo & Seetanah (2007) conducted a study to understand the significance of transport infrastructure as a factor in destination development. Using static and panel data estimation techniques, the study modelled tourist arrivals into Mauritius over the period 1978-2003 from various parts of the world namely Europe and the United States, Asia and Africa, to understand the contribution of different determinants in explaining the success of the island as an international destination. The study found that transport capital has a positive effect on total arrivals. Europeans and Americans attach sizeable importance to transport capital as well as non-transport infrastructure.

Another study conducted by Khadaroo & Seetanah (2008) analyzed the determinants of international tourism flow with a focus on transport capital as a potential input in the tourism equation. The study applied the gravity model of trade to the tourism service industry for 28 countries over the decade 1990-2000 to investigate the role of transportation infrastructure in tourism flow using dynamic panel framework and found that Transport capital is an important ingredient in accounting for tourism flows and does add to the overall attractiveness of a destination. Transport infrastructure is a more sensitive factor than development and tourism infrastructure when travelling to an unknown destination. Tourists value the availability of efficient, reliable and safe travelling to relatively unknown destinations as they prefer to maintain the same comforts as in their home country while travelling.

Albalate and Bel (2010) analysed the effect of tourist arrivals on urban transport demand and supply and found that the variable' tourism intensity' is highly statistically significant in demand determination when estimated either separately or jointly with urban transport supply. Cities with the highest demand for public transport due to tourism do not increase the supply of this service but hold higher demand with the existing transport system. Becken and Schiff (2011) investigated the role of prices alongside other factors in determining distances travelled by tourists in New Zealand and found that (1) Price is not a major driver in the transport decision, and (2) Tourist characteristics variables, particularly length of stay, age, travel party relationship and the purpose of travel, proved to have better explanatory power about the choice of mode and distance travelled. Aguiló, Palmer & Rosselló (2012) investigated different strategies in tourism policies designed to reduce the number of tourists using private motor vehicle transport. Mammadov (2012) analysed the transportation situation of Azerbaijan and other countries in the tourism sector and concluded that automobile transportation is vital in short distances; its development will make the tourists' travel through highways, secure and efficient.

Maseiro & Zoltan (2013) studied the link between movement patterns and transportation mode choice and found a positive correlation between the unobserved factors affecting the choice of visiting more than one region and the selection of the private mode of transport used at the destination. Jannit & Aeka (2016) identified the low cost of tourism, better hospitality, and a variety of food as important factors influencing the decision of international tourists to travel within Thailand. The studies cited in this section have researched the effect of transport on the travel behaviour of tourists at the destination.

Against this background of the criticality of transport to tourism and its role in destination selection, the next step was to record the literature on how the public transport system at the destination influences tourists' decisions regarding the selection of the mode of transport, and also its effect on tourist satisfaction

2.2.3 Public transport system at the destination and selection of mode of transport

In a qualitative study, Beirão & Cabral (2007) identified that an individual's characteristics and lifestyle, the type of journey, the perceived service performance of each transport mode and situational variables are perceptions influencing the choice of the mode in Porto, Portugal. In order to increase public transport usage, the service should be designed in a way that accommodates the level of service required by the customers and attract potential users. Also, there is a need to identify the primary reasons for not using public transport and if possible, remove potential barriers to public transport usage. Using qualitative as well as quantitative analysis, Guvier et al. (2007) examined how 'Tourism On Board' bus service managed by the Institute of Transport and Tourism at the University of Central Lancashire addresses three key objectives of tourism policy, i.e. environmental, social and economic sustainability and are encouraging a modal shift even where there is an acceptable alternative available. Passengers are satisfied with overall service delivery except for attributes such as frequency of service and provision of information.

Joewono & Kubota (2007) investigated the relationship between road-based public transport users' preferences and expectations of a privately owned and operated mode of the transport system, regarding the quality of service, frequency of negative experience, and loyalty and also their support for improvement in the services. The study found that factors influencing the support were negative experience, service importance and dissatisfaction and also users' travel behaviour and their socio-demographic characteristics. Thompson & Schofield (2007) investigated the specific attributes and dimensions of public transport performance that influence visitor satisfaction levels with the destination and the relative influence of these dimensions on overall satisfaction with the destination. The study has confirmed the usefulness of attribute-based measurement technique common to both transport and tourism research and found that the performance of public transport is a significant predictor of satisfaction with the destination.

Chang & Lai (2009) conducted a tourism attraction analysis of the Taipei Mass Rapid Transit system from the perspective of inbound tourists and identified the influence of

travel behaviour on the perception of the Taipei transport system. Five factors of tourism attraction identified from factor analysis were: 'Holistic attraction', 'service attraction', 'information attraction', 'tourism image', 'station location'. The study also found that tourists with different socio-economic characteristics, travelling behaviour, and experience had statistically different perceptions of the Taipei Mass Rapid Transit system.

Jayaraman K.(2011) investigated the factors influencing the utilisation of Public Bus Transport Services in Malaysia using management utilisation theory and employing quantitative research methods. The study identified reliability of schedule, safety and comfort, information service, season ticket, ticket pricing as factors of service drivers and found that the most significant service driver in influencing the utilisation of Public Bus Transport is season tickets, followed by ticket pricing and information service. Reliability of schedule, safety and comfort were found to be not significant. The study concluded that by discovering and understanding the needs and expectations of Malaysian citizens, proper operations and managerial strategies can be planned and implemented to increase the utilisation rate, especially from the non-commuters group.

To understand the importance of the provision of information to newcomers in Dublin and how providing the appropriate information can improve the overall transport experience, Kinsella & Caulfield (2011) employed Importance-Performance Analysis to recognise the differences of opinion regarding public transport between newcomers (visitors) and the natives of Dublin. The study found that newcomers place less importance on traditional aspects of public transport such as quality and safety of vehicles and place greater importance on aspects such as the provision of information and reliability of service. Lack of information deters newcomers from using public transport in Dublin. Adopting a proper and changed method of providing information to newcomers can improve newcomers' satisfaction.

Alexandru (2015) conducted a SWOT analysis of the public transport network in Bucharest, the capital of Romania. The study identified; 1)The city population 2)Users needs 3) An efficient public transport 4) The necessary information and 5) An optimum quality assurance as factors representing potential threats or opportunities

that may materialize over time into strengths and weaknesses of the transport system, which may help to achieve the desired balance between supply and demand at the destination. In another study Le-Klähn et al. (2015) examined tourists' choice of transport mode in the Munich region of Germany through the use of a Bivariate Probit model, measuring the impact of personal tourist characteristics, trip characteristics, mode attributes, destination features and motivations on tourists' choice of public transport as the primary mode and the areas visited and found them to be closely associated. The factors influencing tourists' choice of public transport as the primary mode are educational level, travel partner and motivations of visiting the destination. The decision to travel beyond city areas is influenced by visitors' residence, length of stay (day trip or overnight), some previous trips, perceptions of ease of travel and local attractions.

Summary:

This section has recorded literature that has established that transport is an important element of tourism and is essential for the development of tourism. Also recorded is the literature on tourists' use of public transport at the destination, their perception of the quality of service, factors of service quality and their relationship with users' satisfaction and its influence on mode of choice and decisions regarding selection of mode of transport.

These studies provided the background to an understanding of how the mode of transport is an important variable influencing of tourist satisfaction.

2.3 STUDIES ON ATTRIBUTES OF ROAD TRANSPORT SERVICES AT THE DESTINATION:

Further review of the literature was carried out to identify the various attributes of road transport services which are important for tourism development and also influence tourist satisfaction at the destination. This study research has adopted the definition of tourism transport system as given by Prideaux (2000) "the operation of and interaction between transport modes, ways, and terminals that support tourism resorts in terms of passenger and freight flows into and out of destinations, the provision of transport services within the destination, and the provision of connecting

transport modes in the tourism generating region". Transportation services provided for tourist use also influence overall satisfaction.

As per Prideaux (2000), the transport system is responsible for

a) Providing transport from the tourist's home to the terminal where the journey to the tourism destination commences,
b) Providing services that are safe, comfortable, competitively priced and fast, and
c) Providing transport within the tourism destination and providing freight services into the tourism destination [quoted by Virkar and Mallya 2018a].

The measurement of tourist satisfaction may be an important predictor of tourist use of transport services. To identify the attributes of the transport system that influence tourist satisfaction, this study has illustrated a framework of tourist satisfaction that describes the relationship between transport accessibility, perceived performance and perceived value, based on Fornell's framework of customer satisfaction (Fornell, 1992). The detailed review of the literature on these attributes is presented below.

2.3.1 TRANSPORT ACCESSIBILITY

Accessibility, a concept used in fields such as transport planning and geography, is studied in tourism to mean the provision of transportation services at the destination. According to Handy & Niemeier (1997) 'accessibility is determined not only by the spatial distribution of the potential destination but also by the activity development levels, by their quality and character'.

According to Geurs & Ritsema van Eck (2001), accessibility means the number of activities which can be reached from a certain location. Litman (2003) defines accessibility (or just access) as the ability to reach desired goods, services, activities and destination (collectively called opportunities).

Focusing on passenger transport, Geurs & van Wee (2004) defines accessibility as, "the extent to which land-use and transportation enable (groups of) individuals to reach activities or destination by means of transport mode(s)". As accessibility is an

important term in transport studies, it has been researched in terms of tourist accessibility and transport accessibility separately in transport and tourism literature.

Studies in this section have researched how accessibility influences tourism development, selection of a destination and overall tourist satisfaction. Israeli & Mansfeld (2003) examined the factors which influence the accessibility of tourist attractions within the Old City of Jerusalem. Factors identified were traffic congestion, transportation infrastructure and services, spatial concentration of flows, time concentration of flows, inadequate tourist supply, inadequate information systems and other negative aspects of urban tourism, which should be seriously considered by planners and decision-makers.

Celata (2007) found that accessibility has an influence on the distribution of tourism flow but can only explain a small part of this distribution. Tóth & Dávid (2010) studied the extent of dependability of tourism income on open and accessible public roads and found that there is no connection between the improvement of accessibility and increase of tourism income.

Banica & Camara (2011) tried to correlate the theoretical tourist function rate with socio-economic indicators of local tourism development and accessibility. The study approaches accessibility taking into account not only the distance and number of potential tourists but also the potential tourist attractiveness of the destination. According to the study "Defining and evaluating tourist accessibility should take into account the characteristics of the transportation system, the ease of reaching the tourist site from a certain location, the time taken, the costs and the efforts made to go that distance." The study concluded that the accessibility of a destination influences the attractiveness and potential for tourism development.

Kahtani et al. (2011) developed an accessibility index to measure accessibility to tourist attractions at a regional scale, which will help decision-makers to develop plans for improving accessibility to attract more tourists to the destination. Litman (2011) suggested three approaches for measuring transportation system performance 1) traffic-based such as vehicle trips, traffic speed and roadway level of service 2) Mobility-based such as person-miles, door to door traffic times and ton-miles and 3) Accessibility-based such as person-trips and generalised travel costs. Accessibility

reflects both mobility (people's ability to travel) and land use risk (the generalised cost) required to reach opportunities.

In a study on the influence of transport accessibility levels on tourist accommodation, (Gaman, 2014) found that with the lowest level of transport accessibility, health resorts had fewer facilities at tourist accommodation in Romania. The literature suggests that for any tourist destination, transport accessibility means the ease of reaching attractions considering travel time, efforts and costs and by using the available modes of transport at the destination.

2.3.2 PERCEIVED PERFORMANCE OR QUALITY OF TRANSPORT SERVICES

In customer satisfaction literature, 'Perceived Performance' is usually referred to as 'Perceived Quality', which is a consumer's global judgement of a supplier's current offerings (Zeithaml et al., 1988; Steenkamp, 1989; Fornell et al., 1992; 1996; Anderson et al., 1994; Chan et al., 2003).

According to Oliver (1977, 1980) "perceived performance refers to a person's perception of the actual performance of a product, service or technology artefact." Berry, Parasuraman & Zeithaml (1988) stated that service quality is conformance to customer specification; it is the customer's definition of quality, not management's. Customers assess service quality by comparing what they want or expect, with what they get or perceive they are getting.

Anderson et al. (1994) defined perceived quality as "the consumer's judgment about a product's overall excellence or superiority. In service literature, it is viewed as an overall assessment, and believed to depend on the gap between delivered and desired services on certain dimensions". In a study to examine the link between customer-based measures of a firm's performance (satisfaction) and a measure of economic returns (profitability), Anderson et al. (1994) found a positive impact of quality on customer satisfaction which is primarily a function of current quality and past satisfaction and has an impact on profitability.

Perceived quality is a measure of the customer's evaluation, via recent consumption experience, of the quality of a company's product or service (American Consumer

Satisfaction Index 1996). Perceived performance is the evaluation of recent consumption experience and is expected to have a direct relationship with satisfaction (Fornell, Johnson, Anderson, & Bryant, 1996). Perceived performance as a determinant of customer satisfaction is measured using three indicators viz. overall evaluation of quality experience, evaluation of customization experience and evaluation of reliability experience in the American Customer Satisfaction Index by Fornell et al. (1996). The study found that perceived quality had a significant effect on satisfaction in all the sectors.

Lai K. Chan, Yer V. Hui, Hing P. Lo, Siu K. Tse (2003) measured perceived performance using components 1) overall performance, 2) customisation or fitness for use and 3) Reliability as an antecedent of satisfaction in Hong Kong Consumer Satisfaction Index and found that the impact of quality on satisfaction is positive and significant and has high predictive ability on satisfaction. Thompson & Schofield (2007) used Performance Only Model to examine overseas visitors' perceptions of urban public transport quality and contribution of relevant performance dimensions to their overall satisfaction with the destination. Three dimensions of performance identified were 1) ease of use, 2) efficiency and safety and 3) good parking, and the study found that ease of use dimension was a significant predictor of destination satisfaction. According to Mingfang (2011) perceived performance is usually referred to as perceived quality, which stands for the overall excellence of the product or service.

Mingfang (2011) examined the structural relationship of perceived performance and tourist satisfaction using the same indicator of perceived performance as tourist satisfaction index and found that perceived performance is positively related to tourist satisfaction and loyalty. Song, van der Veen, Li, & Chen (2012) developed a tourist satisfaction index, an evaluation system to identify the relationship between the performance of individual service providers and a destination's overall performance as perceived by tourists. Perceived performance is measured using the indicators of Hong Kong Consumer Satisfaction Index, and it was found that perceived performance positively affects tourist satisfaction during service encounters. Kerdpitak & Heuer (2014) investigated three factors of perceived quality - service

readiness, service value and tourist care affecting tourist satisfaction and found that perceived quality has a positive effect on tourist satisfaction.

Transport services being labour-intensive, are heterogeneous; their performance often varies from producer to producer, from customer to customer and from day to day. Ensuring consistency in the delivery of services is difficult because what the firm intends to deliver may be entirely different from what the customer receives (Transportation Research Board 1999).

From the literature, it is quite evident that the quality of road transport services is significant for tourism development.

2.3.3 PERCEIVED VALUE

Perceived Value is the consumers' overall assessment of the utility of a product based on their perception of what is received and what is given (Zeithaml, 1988). In an exploratory study Zeithaml (1988) defined perceived value in different ways such as, low price, whatever the customer wants in a product, quality received for the price paid and what the customer gets for what he gives. The perceived value represents a trade-off of the salient give and get component.

Oh (1999) assessed the role of customer value within the existing service quality and customer satisfaction framework to examine the relationship of customer value with price, perception of performance, service quality, customer satisfaction and intentions to repurchase and to recommend. The study found that perceived value is an immediate antecedent to customer satisfaction and repurchase intentions, and is determined not only by the tradeoff between price and service quality but also as a result of the direct and indirect influence of performance perceptions.

Kashyap and Bojanic (2000) investigated differences in perceptions of price, quality and value between business and leisure travellers and found that the total effects of value on rating and revisit intentions were significant for both the segments and also mediates the effects of quality and revisit intentions. Williams and Soutar (2000) explored functional value, emotional value, social value, epistemic value, and limited value as the dimensions of value for a tourism consumption experience. The most popular conceptualisation is a functional value in terms of performance (quality) and

price. Sweeney & Soutar (2001) developed PERVAL (Perceived Value) scale with four value dimensions termed as emotional, social, quality or performance and price or value for money for explaining attitudes and behaviour.

Jen & Hu (2003) applied the perceived value model to identify the factors affecting passengers' repurchase intentions on the city bus services in Taipei. Passenger repurchase intentions were determined by the perceived value of the service, including perceived benefits and perceived costs as a combination of monetary and non- monetary prices and the attractiveness of alternatives. The study concluded that if the service is unqualified and perceived value declines, passengers will begin to use vehicles. Hu and Jen (2006) found that passengers' repurchase intentions in respect of city bus services are influenced by perceived value and attractiveness of alternatives. Repurchase intention is increased through valuable and satisfactory services that passengers can perceive.

In tourism and hospitality research, perceived value has always received more attention while investigating the relationship between quality and satisfaction (Gallarza & Saura, 2006). Lee et al. (2007) investigated the relationship between perceived value, tourist satisfaction and recommendation to revisit the Korean Demilitarised Zone. Using functional value, overall value and emotional value as the dimensions of tourists' perceived value, the study found that all the dimensions had a significant effect on tourist satisfaction. Sánchez-Fernández & Iniesta-Bonillo (2007) in a systematic review of research on the dimensionality of perceived value found that both uni-dimensional and multidimensional models of value are adopted to understand the concept, and the nature of perceived value is complex and multi-dimensional.

Jao-Hong, Chien Yuan, Huei-Ping, & Chun-Liang (2010) examined the experience quality of heritage tourism perceived by tourists and investigated the relationship between experience quality, perceived value, satisfaction and behavioural intentions. Enhancing experience qualities, as well as ensuring experience quality leading to perceived value and satisfaction, are essential issues of heritage management. MingFang (2011) measured perceived value using 'price, given quality' and 'quality, given price' to examine the relationship between tourist characteristics, expectations,

perceived value and overall satisfaction and found that perceived value has a strong causal relationship with tourist satisfaction.

The review of literature in the above section has identified transport accessibility, perceived performance and perceived value as attributes of road transport services provided at the destination. This study has attempted to identify the relationship between these attributes of road transport services and tourist satisfaction with these attributes of road transport services at the destination.

Summary:

From the above review of literature on transport and tourism, it is concluded that transport is an essential element of tourism, as it facilitates the movement of tourists within the destination; availability of transport also determines the selection of destination by tourists and helps the economic development of the region. Also, the quality of service provided at the destination affects tourist satisfaction. The following sections present a review of studies on tourist satisfaction.

2.4 STUDIES ON TOURIST SATISFACTION, QUALITY OF SERVICE AND ITS RELATIONSHIP WITH TOURIST SATISFACTION WITH ROAD TRANSPORT SERVICES AT THE DESTINATION

Many tourism researchers have attempted to study overall tourist satisfaction adopting various approaches and also satisfaction with specific services at the tourist destination. Tourist satisfaction has been researched in a wide range of contexts as summarised below:

2.4.1 *Tourist satisfaction with the chosen destination*

Studies in this area have researched tourist satisfaction at a chosen destination by analysing various factors influencing their overall satisfaction. Huh (2002) identified the relationship between cultural and heritage destination attributes and the overall satisfaction of tourists and found that general tour attraction, heritage attractions, maintenance factors and cultural attractions have a significant relationship with the overall satisfaction of tourists. Troung & Foster (2005) developed HOLSAT –Holiday Satisfaction model, a valuable tool to evaluate the satisfaction of tourists with

particular destinations, and also useful for future planning and management of the tourism industry for improving levels of service to meet the expectations of the tourist, in case of Vietnam.

Andriotis (2008) identified and analysed the dimensions of tourist satisfaction, by segmenting tourists visiting the island of Crete by their level of satisfaction, using factors such as tourist products, airport facilities, host attitude, road transport, accommodation and catering pricing, natural environment, entertainment, language and communication. The study found that the lowest satisfaction expressed was for the availability of facilities and services at the destination airport, which needs attention from destination marketers. Lather, Singh, & Singh (2010) explored the difference between expectation and satisfaction based on aesthetic appeal, facilities, safety and security, accommodation information and food as factors of adventure tourism for Indian and foreign tourists visiting India and found that expectation is higher than satisfaction.

Song et al. (2011, 2012) developed a Tourist Satisfaction Index for assessing Hong Kong's competitiveness as an international tourism destination (Song et al., 2011). The study tested the model and confirmed that the model could be applied to other source markets and tourism-related sectors to capture the dynamics of tourist satisfaction. The model was also adopted to evaluate mainland Chinese tourists' satisfaction with Hong Kong in comparison with the UK (Song et al., 2012). Ali and Howaidee (2012) measured the quality of tourism services using components such as destination attraction and environment, facilities, accessibility, image and prices at the destination to study their impact on tourist satisfaction. The study found that destination facilities, accessibility and attraction directly influenced tourist satisfaction, and service quality has a significant impact on tourist satisfaction.

Arasli & Baradarani (2014) investigated the effect of variables such as safety, lodging and restaurant facilities, shopping and tourist attractions, transportation facilities and local cuisine on travellers' perception of destination satisfaction and found that food and local cuisine, shopping and tourist attractions, environment and safety had a significant effect on destination satisfaction. Ekiz & Khoo-Lattimore (2014) identified and examined critical attributes such as Tourism services, shopping and tourist

attractions, accessibility, price and environment of Goa and their degree of importance in terms of tourist satisfaction and correlation with loyalty, and found that price and accessibility were least significant for loyalty. Suanmali (2014) found the cost of staying as the most significant factor among hospitality, attractions and infrastructure factors of overall satisfaction.

2.4.2 *Antecedents of tourist satisfaction*

Studies in this area have modelled the relationship between various factors or dimensions of tourist satisfaction and examined the relationship of the factors as antecedents of tourist satisfaction. Pizam, Neumann, & Reichel (1978) identified beach opportunities, cost, eating and drinking facilities, accommodation facilities, hospitality, environment and extent of commercialization as factors influencing tourists' satisfaction in Cape Cod, Massachusetts (USA). Oliver (1980) provided a more substantial and simultaneous test of the relationship between expectation, disconfirmation, satisfaction, the traditional criteria of attitude and purchase intentions. The study found that disconfirmation and pre-exposure variables or expectation are antecedents of satisfaction, and revised attitude and intentions are consequences in this theoretical framework.

Lee, Yoon, & Lee (2007) investigated the relationship between perceived value, satisfaction and recommendation of Korean Demilitarized Zone to others and found that functional value, overall value and emotional value are dimensions of perceived value having a significant effect on tourist satisfaction. Chi & Qu (2008) examined the structural relationships of the destination image, tourist satisfaction, and destination loyalty and found that destination image and attribute satisfaction are direct antecedents of overall satisfaction which is directly and positively related to destination loyalty.

X. Wang, Zhang, Gu, & Zhen (2009) using the tourist satisfaction model examined the antecedents and consequences of tourist satisfaction and found that tourist expectations, destination image, perceived quality and perceived value are four key antecedents of tourist satisfaction, and complaints (having an adverse effect) and loyalty (having a positive effect) are consequences of satisfaction. Mingfang (2011) evaluated inbound tourists' satisfaction with Shenzhen using a comprehensive tourist

satisfaction index system, and examined the causal relationship between tourist characteristics, expectation, perceived value and overall satisfaction and found that expectation, perceived performance and perceived value were positively related with overall satisfaction. Chayanan Kerdpitak & Heuer (2016) investigated factors of vital success in tourism services providers industry of Thailand and found trust, personal relationship, service quality and facility quality to be factors affecting tourist satisfaction.

2.4.3 *Tourist satisfaction modelled as an antecedent of future behavioural intentions*.

Research in this area has attempted to identify the relationship between antecedent of tourist satisfaction and its consequences. Bigné, Sánchez, & Sánchez (2001) identified that tourism image is a direct antecedent of perceived quality, satisfaction, intention to return and willingness to recommend the destination and is a crucial factor of destination marketing.

Anable (2004) identified travel behaviour of travellers by meaningfully grouping them in a psychological sense to study their mode choice behaviour and found that each group represents a unique combination of preferences, world views and attitudes and need to be serviced differently to optimise the chance of influencing mode choice behaviour. del Bosque & San Martín (2008) applying a cognitive-affective model of tourist satisfaction, found that the preconceived image of the destination influences expectation and tourist loyalty; emotions play an important role in satisfaction formation. Satisfaction has a positive and significant effect on loyalty. As expectation mediates the impact of image on satisfaction, satisfaction is not influenced by image. Lee (2009) examined a behavioural model of tourism using variables of the destination image, attitude, motivation, satisfaction and future behaviour and found that destination image, tourist attitude, and tourist motivation directly affected satisfaction and indirectly affected future behaviour.

Boit (2013) investigated the role of destination environment and atmosphere and tourism resources as dimensions of destination attributes and visitors' satisfaction on tourist repeat visit intentions. The study found that atmosphere and tourism resources were slightly related to satisfaction, and satisfaction was related to visiting intentions.

2.4 4 *Studies on Quality of Service and Its Relationship with Tourist Satisfaction With Road Transport Services At The Destination*

Understanding attribute level satisfaction is important for destination marketing. As this study attempts to identify the service quality attributes of road transport services which might be considered important and may also influence tourist satisfaction during their visit, a review of the studies that have researched quality of service and its relationship with tourist satisfaction was carried out to identify the attributes of service quality of road transport services provided at the destination.

Parasuraman, Zeithaml, & Berry (1985) developed the conceptual model SERVQUAL of service quality; Reliability, Responsiveness, Competence, Access, Courtesy, Communication, Credibility, Security, Understanding the customer and Tangibles are determinants of SERVQUAL. The study found that Quality of service is more than a set of activities; it is primarily an attitude. Parasuraman, Zeithaml, & Berry (1988) refined SERVQUAL scale consists of 22 paired items for expectation and perception, which Parasuraman, Berry, & Zeithaml, (1993) grouped into five service quality dimensions The differences between expectation and perception scores reflect the assessment of service quality.

Mekoth (1997) conceptualised the term 'quality of service' as perceived by the customers in Passenger Road transport in Goa and established a positive relationship between the measure of perceived quality by customers and a performance-based measure of the quality of service. The study measured and compared the quality of service rendered by the public sector (Kadamba Transport Corporation Limited) and private transport operators using the approaches of performance-based evaluation as advocated by Central Institute of Road Transport (CIRT) and the customer perception-based evaluation developed by the investigator. The study found that the quality of service of Kadamba Transport Corporation Limited was much higher than Private transport operators. Comfort and convenience and quality of crew were identified as parameters where (Kadamba Transport Corporation Limited) needs to concentrate for improvement, which will lead to an increase in its market share.

Murphy, Pritchard, & Smith (2000) attempted to understand the links between a destination's product mix, the perceptions of quality and value they generate amongst

visitors. Tourism infrastructure was found to be an essential predictor of both destination "quality" and perceived trip "value". Waryszak and King (2000) evaluated attempts made by the Government of Australia to strengthen the link between taxis and tourism and to enhance the level of service quality provided to the tourists by the taxi industry.

In a study to investigate the relationship between passenger satisfaction with bus services and the attributes of the services supplied, Eboli & Mazzulla (2007) found that attribute service planning and reliability have a more significant effect on customer satisfaction, and improvement of the service in terms of service planning and reliability can be useful for transport operators. Chen (2008) examined the structural relationship between service quality, perceived value, satisfaction and behavioural intentions of air passengers and found that perceived value and overall satisfaction have a direct influence on behavioural intentions and perceived value moderates the relationship.

De Oña et al. (2008) using CART (Classification and Regression Tree) analysis found that frequency, speed and punctuality are preliminary service quality attributes as perceived by passengers. The proximity of bus stops, safety on board and fare are other aspects that define the service. Tyrinopoulos & Antoniou (2008) identified attributes as 1) Quality of service comprising of attributes related to price, information provision, the behaviour of personnel, waiting and in-vehicle conditions and accessibility 2) Transfer quality comprising attributes related to transfer coordination(distance and waiting time) 3)Service production reflecting service frequency and reliability, and 4) information or courtesy comprising of information provision and behaviour of personnel affecting travel decisions. Applying ordered logit model analysis, the study found that service frequency, vehicle cleanliness, waiting conditions, transfer distance and network coverage are the essential satisfaction attributes across transit operators.

Eboli & Mazzulla (2009) developed a Heterogeneous Customer Satisfaction Index (HCSI) (2009) for measuring service quality to monitor transit agency performances and fulfil customer requirements. The index allows identification of the causes of generating customer satisfaction or dissatisfaction and defines the strategies for

improving the service quality. In another study, Eboli & Mazzulla (2011) proposed a methodology which provides a means for evaluating transit service quality by considering both, subjective indicators for measuring customer requirements and objective measures of service performance to attract new users. Jayaraman K. (2011), through assessment of public bus transport service drivers, identified that season ticket, ticket pricing, and information service significantly influence the utilisation. Gender as a socio-demographic factor did not influence the overall utilisation of public bus transport services. Perceived benefits are influenced by service quality, while perceived costs are made up of monetary and non-monetary prices. Lai & Chen (2011) developed a relationship model that incorporated the role of service attributes, service quality, perceived value, satisfaction and involvement in forming behavioural intentions. Service attributes such as vehicle safety, facility, cleanliness and complaint handling have a significant influence on passenger behavioural intentions; involvement has a positive and significant effect on satisfaction.

Govender (2014) explored commuters' perceptions of bus and minibus taxi service by applying the Regional Estuarine and Coastal Systems of the Americas (RECSA) service quality dimensions of McKnight et al. (1986). Age, education and income were all found to significantly influencing overall service quality. Concerning the service quality dimensions of RECSA model (Reliability, Extent of the service, Comfort, Safety and Affordability) commuters' perceptions were more favourable in terms of reliability, comfort, safety and affordability for bus services compared to a minibus in Johannesburg. Ragavan, Subramonian, & Sharif (2014) investigated the influence of travel attributes such as accommodation and food, attractions, climate, commodities, convenience, culture, people and price on tourist satisfaction and found that demographic factors moderated the relationship between attributes and satisfaction. Jamnokwao (2015) developed twenty-seven parameters as influential indices for measuring the service quality of sightseeing bus services.

Zhang, Cao, Nagpure, & Agarwal (2017) introduced the three-factor theory to identify a factor structure of transit service by classifying service attributes into basic, performance, and excitement factors according to their importance to overall satisfaction with transits and then to identify the improvement priorities. Using a 2013 survey of Bus, Bus Rapid Transit (BRT) and Van riders in Indore, India, the study

found that for all three types of transit, comfort, while riding and safety while waiting are two common basic factors and safety while riding, is a common key performance factor. Furthermore, several Van attributes require extensive improvements, while Bus Rapid Transit (BRT) needs the least improvements.

(Cao, 2017) analyzed rider satisfaction surveys to explore important service attributes and identify improvement priorities. The study applied three-factor theory to classify service attributes into basic, performance, and excitement factors. Using the 2013 data of bus, bus rapid transit (BRT), and metro transit riders from Guangzhou, China, the study found that for all three types of transit, safety while riding the service, safety while at station/stop, ease of service use, reliability, and convenience of service are classified as either basic factors or key performance factors. Comfort while waiting at station/stop is a performance factor for conventional bus and BRT, but it is an excitement factor for metro transit.

2.4.5 *Studies on Customer Satisfaction Indices*

Constructing a Customer Satisfaction Index (CSI) which represents a uniform system for evaluating, comparing, and enhancing customer satisfaction across firms and industries (Fornell et al., 1996), is another practice that tends to be used at the regional or country-level (Wang 2016). Some important indices used in service industries are reviewed below:

- Fornell et al. (1992) developed Swedish Customer Satisfaction Barometer (SCSB). It was the first National Customer Satisfaction Index based on annual survey data from customers of about 100 leading companies in some 30 industries. The model contains two primary antecedents of customer satisfaction: pre-purchase expectations and post-purchase perceived performance (of the respective product/service) and increased loyalty and decreased complaints as its consequences. The results indicated that industries selling homogeneous products to a homogeneous market or differentiated products (services) to a heterogeneous market typically had higher Customer Satisfaction Barometer than other industries. An increase in satisfaction leads to decreased complaints and increased loyalty.

- The American Customer Satisfaction Index model (ACSI) was developed by Fornell et al. in 1996 at the University of Michigan's Ross School of Business. It is a type of market-based performance measure for firms, industries, economic sectors and national economies and is designed to be representative of the nation's economy as a whole. It uses customer interviews as input to a multi-equation cause-and-effect model. This index measures the quality of goods and services and an overall evaluation of total purchase and consumption experience. ACSI uses a multiple indicator approach to measure satisfaction as a latent variable in a chain of relationships running from antecedents of satisfaction such as expectations, perceived quality, and perceived value to the consequences viz, complaints and loyalty
- Chan et al. developed the Hong Kong Customer Satisfaction Index (HKCSI) in 2003, a new type of consumer-oriented economic performance indicator developed for domestically purchased and consumed products and services. The HKCSI is based on the concept of cumulative consumer satisfaction that represents an overall evaluation based on entire consumption experience with the product or service over time (Fornell 1992). In the HKCSI model, expectations, performance, value and consumer characteristics are antecedents of satisfaction and loyalty, and complaints are consequences of satisfaction. The study was inspired by comparable SCSB and ACSI practice, with modifications to suit Hong Kong's economic structure. Using Structural Equation Modelling the results are generally acceptable and in agreement with marketing theory and with the findings of SCSB and ACSI.
- Hong Kong Tourist Satisfaction Index (TSI) is a well-publicised destination level index developed by Song et al. (2011). The system involves a two-stage evaluation at the sectoral and destination levels. Six key service sectors related to tourism (i.e., hotels, restaurants, retail shops, attractions, transportation and immigration services) are examined using structural equation modeling. At the centre of the model is the tourist satisfaction construct with perceived performance, assessed value and expectations as antecedents of satisfaction and loyalty and complaint intentions as consequences of satisfaction. The TSI is produced annually based on visitor survey data and is adopted by an

increasing number of tourist destinations, such as Singapore, Macau and China's Guangdong province. (www.touristsatisfaction.org).

Studies in the field of tourism, by estimating the Tourist Satisfaction Index have provided inputs for future development in the respective fields.

Song et al. (2011) tested the Tourist Satisfaction Index by assessing Hong Kong's competitiveness as an international tourism destination. Using structural equation modeling for three service sectors - hotel, retail and tour operators, TSI of the three sectors were calculated, and it was found that tourists were more satisfied with the hotel sector, followed by retail sector and the tour operator sector. The study confirmed that the model could be applied to other source markets and tourism-related sectors repeatedly to capture the dynamics of tourist satisfaction.

Song et al. (2012) using the Tourist Satisfaction Index, evaluated mainland Chinese tourists' satisfaction with Hong Kong in comparison with the UK. TSI for the overall destination and sectoral TSI for both Hong Kong and the UK were computed using Structural Equation Modelling, and it was found that mainland Chinese tourists were more satisfied with Hong Kong than with the UK as their travel destination. Concerning service sectors, tourists were more satisfied with transport services in Hong Kong and Visitors Attractions in UK and least satisfied with local tour operators in Hong Kong and hotels in the UK.

Thomas (2013) developed a Tourist Satisfaction Index model containing cognitive, emotional satisfaction, cognitive product satisfaction, cognitive service satisfaction and cognitive dissonance for measuring destination satisfaction. The results show that the four core components of the index have significant positive correlations and can be used for destination performance evaluation for internal destination benchmarking. Salleh et al. (2014) identified product diversity, support facilities, overall trip and safety level as factors determining satisfaction of tourists visiting Pulau Kapas Marine Park, a tourism destination in Malaysia. The estimated total satisfaction index is 63.05%, which means that tourists are satisfied with the services provided, but there is scope for improvement.

Pilelienė & Grigaliūnaitė (2016) analysed the factors affecting inbound tourist satisfaction with Lithuania, using Tourist Satisfaction Index. Accommodation and catering facilities, activities in the destination, natural features, destination aesthetics, environment preservation and destination marketing were the factors identified, and it was found that accommodation and catering, destination aesthetics and destination marketing are the factors positively and significantly affecting tourist satisfaction with Lithuania.

Tourist satisfaction has been widely researched as reported by the review of the literature. This study has attempted to study the relationship between attributes of road transport services provided at the destination (identified in Section 2.3), to identify the important attributes of service quality of different modes of transport and their effect on tourist satisfaction. The above review of literature provided a strong foundation for conducting further analysis in the proposed area of research.

2.5 THEORETICAL BACKGROUND

For any service industry, understanding customer satisfaction is essential for improvement and development. Many theories have been adopted to understand the process of customer satisfaction, which can guide service providers to improve their services. A variety of theoretical approaches have been proposed for measuring customer satisfaction, some being, Expectancy-Disconfirmation Theory, Cognitive Dissonance Theory (CDT), Equity Theory, Attribution Theory, Value-Percept Theory, Dissonance Theory, Contrast Theory, Comparison Level Theory, Importance-Performance Theory, and Evaluative Congruity Theory (Yüksel, 2001). Oliver 1997 defined satisfaction as a consumer's overall cognitive or affective response to product use. Wang (2016) expressed that tourist satisfaction at a destination is conceptually different, as it is total of numerous individual experiences at the destination, of which tourists may be satisfied with some aspects and dissatisfied with other aspects of their trips.

ACSI theoretical Framework of Customer Satisfaction (Fornell et al., 1991,1996) presented the concept of cumulative consumer satisfaction that represents an overall evaluation based on the entire purchase consumption experience with a product or service and is more fundamental and useful in predicting consumer's subsequent

behaviour and firm's economic performance (Johnson & Fornell, 1991). Satisfaction is determined by a combination of perceived quality, perceived value, expectations and actual experiences (Fornell et al., 1996). Some theoretical approaches that have been adopted in the tourism literature to examine tourist satisfaction include Expectancy Disconfirmation Approach, Importance-Performance Approach, Performance Only Approach, Kano's Model of Customer Satisfaction, Fornell's (1996) ACSI Framework of Customer Satisfaction (Wang, 2016). This section summarizes some of the theoretical approaches adopted by studies in the field of customer satisfaction. This was necessary to develop a theoretical model for tourist satisfaction with the attributes of road transport services at the destination.

2.5.1 Expectancy-Disconfirmation Paradigm

Oliver (1977; 1980) proposed the Expectancy-Disconfirmation Paradigm (EDP) as the most promising theoretical framework for the assessment of customer satisfaction. The expectation–disconfirmation paradigm has often been used to analyse consumer satisfaction, with the results suggesting that customer satisfaction or dissatisfaction is a result of a comparison between consumers' pre-purchase expectation and their post-purchase evaluation. Confirmation occurs when the outcome matches the expectation and disconfirmation occur when expectations do not match outcomes (Yuksel & Yuksel, 2008) This approach offers insights into what levels of performance tourists expect at the destination and also allows identifying areas of weaknesses and strengths (Wang, 2016).

2.5.2 The Importance-Performance Model

Martilla & James (1977) developed Importance-Performance analysis for evaluating customer satisfaction. According to the analysis, satisfaction is a function of customer perceptions of performance and the importance of the attribute. Importance-Performance Analysis seems to provide a clear direction for action, as it can identify areas which are to be focused on limited resources.

2.5.3 Performance only approach (SERVPERF): Cronin & Taylor (1992) proposed the performance-based service quality (SERVPERF) model. The performance-based scale is efficient in comparison to the SERVQUAL scale. The approach suggests that

service quality is an antecedent of customer satisfaction and exerts a strong influence on purchase intentions.

2.5.4 Johnson and Fornell's Framework of Customer Satisfaction (1991): Johnson and Fornell (1991) argued that in a dynamic perspective, customers' experience with products and services should result in a general increase in perceived satisfaction. The framework presented the concept of cumulative consumer satisfaction that represents an overall evaluation based on the entire purchase and consumption experience with a product or service and is more fundamental and useful in predicting consumers' subsequent behaviour and a firm's economic performance. This framework has been the basis for Swedish Customer Satisfaction Barometer (SCSB) (1992), American Customer Satisfaction Index (ACSI) (1996), Hong Kong Customer Satisfaction Index (HKCSI) (2001) and Hong Kong Tourist Satisfaction Index (TSI) (2011).

2.5.5 American Customer Satisfaction Index (ACSI) framework: Fornell et al. (1996) proposed the ACSI theoretical framework of customer satisfaction. Satisfaction is determined by a combination of consumer expectations, perceived value and quality and experience. The ACSI model is a cause-and-effect model with drivers of satisfaction on the left side (customer expectations, perceived quality and perceived value), satisfaction in the centre and consequences on the right (customer complaints and loyalty).

2.5.6 Kano's model of Customer Satisfaction: Kano et al. (as cited in Gregory and Parsa, 2012) challenged the traditional customer satisfaction models that suggest higher satisfaction is consistent across the product attributes and asserted that not all attributes have a linear relationship with satisfaction. According to Kano et al. (1984), understanding the functional requirements of a product attribute in addition to the satisfaction rating could reveal the origin of the satisfaction, as well as the features or attributes a company should focus on in order to be competitive, increase customer satisfaction or differentiate themselves in the market place. The Kano model is a theory developed by Dr.Noriaki Kano and his colleagues in 1984 which classified the product attributes based on how they are perceived by the customer, and their effect on customer satisfaction.

The theory proposed that product attributes could be divided into five categories according to the expected effect on satisfaction:

1. Attractive quality: Attractive quality results in customer satisfaction if these attributes are present, but no dissatisfaction if they are absent. These attributes are not expected but are appreciated when provided. Attractive attributes are also referred to as "excitement needs" or "surprises that result in delight,"
2. One-dimensional quality: Also referred to as performance needs, these are attributes that are positively related to customer satisfaction. Higher the positive performance of these attributes, the greater the level of customer satisfaction.
3. Must-have (must-be) quality: Without these attributes, dissatisfaction increases, yet their existence does not necessarily improve consumer satisfaction. These attributes are also described as "basic needs" and refer to the attributes that are expected by the consumer.
4. Indifferent quality: There is no substantial impact on customers' satisfaction or dissatisfaction based on the presence or absence of these attributes. These attributes have no impact on customer satisfaction.
5. Reverse quality: Contrary to must-have (must-be) attributes, reverse attributes cause dissatisfaction when present and satisfaction when absent. These attributes have a negative impact on satisfaction.

Researchers adopting the Kano model have variously named it as the three-factor theory of customer satisfaction (Matzler, Bailom, Hinterhuber, Renzl, & Pichler, 2004), the factor theory of customer satisfaction (Busacca & Padula, 2005), or theory of attractive quality (Nilsson-Witell and Fundin, 2005) The three-factor theory has its origins in Kano's five-factor theory of customer satisfaction.

2.5.7 Three-Factor Theory of Customer Satisfaction: Matzler et al. (2004) grouped the attributes into three categories as below:

1. Basic factors are minimum requirements that cause dissatisfaction if not fulfilled but do not lead to customer satisfaction if fulfilled or exceeded; negative performance on these attributes has a greater impact on overall satisfaction than

positive performance. The fulfilment of basic requirements is a necessary, but not sufficient condition for satisfaction.

2. Excitement factors are the factors that increase customer satisfaction if delivered but do not cause dissatisfaction if they are not delivered; in other words, positive performance on these attributes has a greater impact on overall satisfaction than negative performance. Excitement factors surprise the customer and generate ‘‘delight.’’
3. Performance factors lead to satisfaction if performance is high and to dissatisfaction if performance is low. In the case of such factors, the attribute performance –overall satisfaction relationship is linear and symmetric.

The three-factor theory is used to address the non-linear and asymmetric effects of individual attribute satisfaction on overall satisfaction (Matzler et al., 2004); it is also adopted in user-rider satisfaction studies (Cao & Cao 2017, Zhang et al., 2017).

Summary:

Tourist satisfaction and its measurement is an essential issue for tourism destinations and service providers. Many tourism researchers have attempted to study overall tourist satisfaction adopting various approaches and also satisfaction with specific services at the tourist destination. From the review of the literature, various approaches and theories were identified in tourism studies. Tourist satisfaction with a destination or a service is often measured at the construct level with a scale consisting of three or four items and is commonly combined with an attribute-based method to understand the impact of individual service attributes on overall satisfaction (Wang, 2016).

This study has adopted Johnson and Fornell’s Framework of Customer Satisfaction to identify the attributes of road transport services and their relationship with tourist satisfaction using Structural Equation Modelling. Importance-Satisfaction approach has been adopted to identify the service attributes which are important and influences satisfaction. Kano’s Model of Customer Satisfaction and Three-Factor Theory have been adopted to analyse the impact of an attribute on overall satisfaction.

2.6 RESEARCH GAPS

The literature review in the area of tourism and transport attributes of transport services, service quality and tourist satisfaction has revealed the following research gaps:

- Transport is a critical factor in tourism development, but the existence of a causal relationship between transport system performance at the destination and tourist satisfaction needs further investigation (Prideaux, 2000).
- The measurement of travel characteristics including time, cost and choice of mode and their impact on travel decisions of tourists needs to be researched (Prideaux, 2000).
- Additional research is necessary to study the relationship between tourist taxi drivers, government policies and tourism industry, which would be useful to understand how tourists perceive taxis at different destinations (Waryszak & King, 2000).
- Additional research is necessary to investigate the need for efficient transport as an overall element in successful tourism development (Khadaroo & Seetanah, 2007).
- Detailed investigation of how transport, which is not dedicated to tourist use, influences tourists' experience remains limited (Thompson & Schofield, 2007).
- The Mode of transportation used may also influence the level of satisfaction with en-route services. Future studies should include more than one type of traveller, separate domestic trips from international trips and take into account the modes of transportation (Neal & Gursoy, 2008).
- Additional research is needed that investigates a richer set of quality attributes of transport services such as safety, staff behaviour, information and fares (M Fellesson & Friman, 2009).
- Further research is necessary to understand tourist transport behaviour and how to improve their experience with public transport (M Fellesson & Friman, 2009).
- Future research is needed to jointly analyze the spatial dimension and transportation mode used by estimating different hierarchical structures for a

better understanding of tourist behaviour at the destination (Masiero & Zoltan, 2013).

- Areas that need further attention include the influence/effect of staff services, seat availability, space and cleanliness of vehicles on user's satisfaction with transport (Le-Klahn & Hall, 2014).
- Further studies are necessary to better understand tourist transport behaviour and how to improve their experience with public transport (Le-Klahn & Hall, 2014).
- Future research should consider the factors affecting tourists' choice of mode of transport and the areas visited with all transport modes (Le-Klähn et al., 2015).
- Further research could usefully investigate variables such as service quality, previous expectations and perceived quality as mediating factors in a measurement model of satisfaction and loyalty (Guzman-Parra, Vila-Oblitas, & Maqueda-Lafuente, 2016).

2.7 SUMMARY AND CONCLUSION

The literature reveals that

- Transport is a critical component of the tourism industry; without its presence and operations, tourism will not take place.
- Transport is responsible for providing easy access and mobility to the attractions at the destination.
- Transport services provided for tourist use also influences overall tourist satisfaction with these services at the destination.

Several tourist satisfaction studies have included transport as a component of tourism infrastructure. This study is an attempt to identify the attributes of road transport services at the destination and the causal relationship between these attributes of road transport services and tourist satisfaction at the destination.

CHAPTER 3

RESEARCH METHODOLOGY

CHAPTER 3

RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter provides an outline of the research methodology adopted in the study and presents the details of the research design adopted, unit of analysis and sampling, data collection tools and procedure and the data analysis procedure.

3.2 RESEARCH DESIGN

The research design refers to the conceptual structure within which research is conducted; it constitutes the blueprint for the collection, measurement and analysis of data (Kothari & Garg, 2014). This study adopted a quantitative research design since it aims at identifying the attributes of road transport services that affect tourist satisfaction and testing the proposed relationships between attributes of road transport services and tourist satisfaction with these srevices at the destination.

A preliminary survey of 120 tourists was conducted to understand the use of road transport services and their satisfaction with these services. The survey along with additional review of literature helped identify the constructs and attributes of service quality that were then used in the study.

A quantitative research design was later adopted based on the Tourist Satisfaction Index model (Song et al., 2011) to test the proposed relationship between various attributes of road transport services and tourist satisfaction with these services at the destination. It was felt that adopting the Tourist Satisfaction Index model as an evaluation system would help identify the relationship between performance and satisfaction of individual service providers as perceived by tourists (Song et al., 2011).

Service quality is a measure of how well the service level delivered matches customer expectations; and when it is said that a firm is delivering quality services, it implies that the firm is conforming to customer expectations on a consistent basis (Transportation Research Board 1999, 2004). Thus the extent to which service performance matches customer expectations influences the degree to which the customer feels satisfied.

There may be some service quality attributes of the transport system that might be considered important and may also influence tourist satisfaction during their visit to the destination. It was found necessary to identify service quality attributes influencing satisfaction. Importance Satisfaction Analysis / Quadrant analysis of customer satisfaction measures are often used to provide an underlying understanding of the ratings. Accordingly, this study used the Importance Satisfaction Analysis model to evaluate the importance and satisfaction of service quality of the transport system.

3.3 UNIT OF ANALYSIS, SAMPLING AND SAMPLE SIZE

As this study attempts to understand which attributes of road transport services affect tourist satisfaction, the unit of analysis for the study is the tourist using local transport services covering Public bus transport (KTCL), Private bus transport, Sightseeing vehicles arranged by hotels and tour operators, Government sightseeing vehicles, Taxi/ Cab, Motor cycle taxi (Pilot), Rent a bike/ car and Auto rickshaw – all of which are available in Goa. Since the questionnaire required the respondents to mark the various measurement items of attributes of road transport services perceived and used by them on an 11-point Likert scale and the attributes of service quality on a 5-point Likert Scale, care was taken to see that the respondents were using / had used local transport services and were aware of the features of transport services.

For the preliminary survey and quantitative study, the sample was drawn from the population under study on a convenience sampling basis. The respondents were first asked whether they were using local transport services in Goa; the researcher proceeded with a filling of the questionnaire with those respondents who responded in the affirmative.

As the study uses PLS–SEM, calculation of the required sample size was done by referring to the guidelines recommended by some of the researchers;

- Hair et al. (2014) state that PLS-SEM can be utilized with much smaller sample sizes, even when models are highly complex. Some authors (Barclay, Higgins, & Thompson, 1995, Chin, 1998) recommend PLS users follow a similar "rule of 10" guideline as SEM users: at least 10 cases per measured variable for the larger of (1) the number of indicators in the largest latent factor block, or (2) the

largest number of incoming causal arrows for any latent variable in the model developed by Garson (2016).

- As a popular rule of thumb for robust PLS-SEM estimations, Barclay et al. (1995) suggest using a minimum sample size of ten times the maximum number of paths aiming at any construct in the outer model (i.e., the number of formative indicators per construct) and inner model (i.e., the number of path relationships directed at a particular construct) (Hair et al., 2012).
- According to Gaskin (2016), the sample size needed in PLS is 10 times the number of indicators for the most predicted construct, and if a construct is also being predicted in a causal model by other latent constructs, then those need to be considered as well.

Adopting Gaskin's guideline the required sample size for the model estimation of the study was 240 respondents.

3.4 DATA COLLECTION TOOLS

A preliminary survey was conducted in the month of October 2017 by interviewing 120 tourists who had used transportation services during their visit to Goa. These tourists were approached at the Margao railway station and the bus station at the point of departure. A questionnaire was designed to be self-administered. The researcher personally approached 120 tourists to fill the questionnaire after taking their consent to participate.

Based on the survey, the components of transport services influencing tourist satisfaction were identified, which were then used in the research. The responses of the customers were summarized, and conclusions are drawn. The findings of the survey along with the literature review enabled the identification of the scale items for the measurement instrument. A new scale was developed for the construct 'transport accessibility', whereas, for the remaining constructs, the existing scales were modified to suit the purpose of the study. The scale was developed for the construct 'transport accessibility' by adopting some items in the questionnaire from relevant prior research, with necessary validation and changes in the wording tailored to suit transportation services.

A quantitative research design was later adopted based on Tourist Satisfaction Index model to test the proposed relationship between the various attributes of road transport services and tourist satisfaction with these services at the destination. The questionnaire for the survey was developed using scales from 1) The American Customer Satisfaction Index: The National Measure of Customer Satisfaction, Methodology report (2005) and 2) "A Handbook for Measuring Customer Satisfaction and Service Quality" of Transportation Research Board (1999). The questionnaire was designed to be a self-administered instrument.

The questionnaire consisted of five major sections.

- The first section sought information related to the respondent's trip to Goa with six question items including a number of previous visits, use of local transport services, travel partners, the purpose of visit, length of stay in Goa, reasons for visiting Goa.
- Section two referred to evaluating transport mode with five items relating to the mode used, how the mode was selected, attributes affecting the selection of mode, satisfaction with the use and availability of the mode.
- The third section focused on tourist satisfaction with transport accessibility (developed for the study) and constructs including perceived performance, perceived value, and tourist satisfaction from The American Customer Satisfaction Index: The National Measure of Customer Satisfaction, Methodology report (2005) and measured using a Likert scale of 0 to 10, where "0" = "very dissatisfied" and "10" = "very satisfied".
- The fourth section focused on service quality attributes of road transport service which are important for the modes used and also influence tourist satisfaction during their visit. These attributes were identified by referring "A Handbook for Measuring Customer Satisfaction and Service Quality" of the Transportation Research Board (1999) and measured using a Likert scale of 1 to 5 with "1" =not at all important to "5"=extremely important and "1" =not at all satisfied, to "5"=extremely satisfied.
- Section five sought respondents' personal information with five question items, including age, education, nationality, household monthly income and gender.

3.5 DATA COLLECTION PROCEDURE

3.5.1 Preliminary survey

Literature in the area of tourism and transport indicates that the transport system at the destination and its availability is one of the important determinants for selecting the tourist destination. An efficient transport system which satisfies tourists' needs will always enhance their likelihood to revisit the destination. As the study intended to identify and understand the attributes of road transport services that affect tourists' satisfaction, it was necessary to understand the tourists' behaviour with respect to the use of transport services and to know the factors influencing their satisfaction. However, in order to get first-hand knowledge of the tourists' use of transportation services and to understand the components of transport services influencing their satisfaction, a preliminary survey was undertaken along with a detailed review of the literature. The survey was conducted by interviewing 120 tourists through a questionnaire designed for the purpose.

The respondents gave relevant inputs to the experiences and performance of the transport service providers used by them. Data was collected in respect of their reasons for using the transport services, the factors influencing their satisfaction and their intentions of future use of transportation services. Most respondents willingly and enthusiastically participated in the survey, and were, in fact, quite eager to express their opinions.

3.5.2 Quantitative Study

The data for the quantitative study was collected by way of questionnaires. The respondents were tourists in the age group of 18 years and above. The questionnaires were administered personally to respondents, selected on the basis of use of road transport services and willingness to participate. Each respondent required around 10-15 minutes to fill in the questionnaire. The completed questionnaires were checked for unanswered questions or missing responses and the respondents were requested to fill in the missing data. Also, items not rated were brought to the notice of the respondent with a request to complete the questionnaire. The respondents were not required to mention their name on the questionnaire, thus ensuring that they answer the questions

objectively and in an unbiased manner. The respondents belonged to different genders, age groups, nationalities and educational backgrounds. The survey lasted for 9 months, starting from mid-April 2018 to December 2018 and involved interviewing tourists at different places covering tourist sites at Palolem, Agonda, Colva, Panjim, Old Goa, Margao, Candolim, Calangute, Baga, Vagator, Anjuna, Fort Aguada, Big Foot, Molem etc. and also from tourists using the Hop-on–Hop-Off bus services by travelling along with them. A total of 606 completed questionnaires were collected from tourists visiting Goa.

3.6 DATA ANALYSIS PROCEDURE

The data collected from the preliminary interviews was analysed and summarized to draw conclusions. The initial items for the measurement instrument were constructed based on the findings of the preliminary survey and the review of the literature. After finalising the items for the questionnaire, Content Validity was initially conducted for all the items of the developed measurement scale. For this purpose, the initial measurement item scale developed was presented to the experts. Based on their ratings, the Item Content Validity Index (I-CVI) was calculated for each item and the Scale Content Validity Index (S-CVI) was calculated for each scale. Items not satisfying the prescribed criteria were removed from the scale or modified as per comments received. This was followed by pre-testing of the measurement instrument, based on which the questionnaire was finalised. The data collected from the 606 questionnaires was entered using SPSS Version 22 and analysed using Structural Equation Modeling using Partial Least Squares (PLS-SEM), Moderation Analysis and Importance-Satisfaction Analysis.

3.6.1 Structural Equation Modeling using Partial Least Squares (PLS-SEM)

3.6.1.a) Structural Equation Modeling Technique:

Structural Equation Modeling has become the dominant analytical tool for testing cause-effect-relationships models with latent variables, and SEM is the technique of choice when the goal of the analysis is to gain substantial knowledge about the drivers of customer satisfaction, (Hair et al., 2014). SEM has become a quasi-standard in marketing and management research when it comes to analyzing the cause–effect relations between latent constructs (Hair et al. 2011). SEM can model multiple

independent variables (IV) and multiple dependent variables (DV), chains of causal effects and indirect effects, and the latent constructs that variables are meant to measure (Lowry and Gaskin, 2014). SEM is a highly flexible and comprehensive methodology for representing, estimating, and testing a network of relationships between variables (measured variables and latent constructs) which requires researchers to support hypotheses with theory or research and specify relations a priori. SEM also resolves the problems of multicollinearity (Suhr, 2006). SEM statistical models represent causal relationships as paths. A path is a hypothesized correlation between variables representing the causal and consequent constructs of a theoretical proposition (Lowry and Gaskin, 2014).

SEM can be applied by considering either of the following two types of approaches:

1. Covariance analysis – employed in LISREL, EQS and AMOS – and

2. Partial least squares – employed in PLS and PLS-Graph.

These two distinct types of SEM differ in the objectives of their analyses, the statistical assumptions they are based on, and the nature of the fit statistics they produce (Gefen et al., 2000).

According to Hair et al. (2011), the selection between the two can be based on factors such as research objective, type of measurement model specification, the structural model, data characteristics and model evaluation.

3.6.1.b) Partial Least Squares-SEM:

PLS-SEM is a causal predictive approach to SEM that emphasizes prediction in estimating statistical models, whose structure is designed to provide causal explanations (Wold, 1982; Sarstedt et al., 2017 as cited in Hair et al., 2018).

The primary appeal of PLS-SEM is that the method enables researchers to estimate complex models with many constructs, indicator variables, and structural paths without imposing distributional assumptions on the data (Hair et al., 2018). According to Lowry and Gaskin (2014) if the research objective is prediction and theory development, then the appropriate method is PLS-SEM, as PLS-SEM has the ability to

work efficiently with a much wider range of sample sizes and increased model complexity and has less restrictive assumptions about the data.

PLS may be implemented as a regression model, predicting one or more dependents from a set of one or more independents; or it can be implemented as a path model, handling causal paths relating predictors as well as paths relating the predictors to the response variable(s)(Garson, 2016)

Hair et al. (2011) have specified some Rules of Thumb for Selecting PLS-SEM

1) Research Goals - If the goal is predicting key target constructs or identifying key "driver" constructs
2) Measurement Model Specification - If formative constructs are part of the structural model
3) Data Characteristics

   a) Sample size considerations: – If the sample size is relatively low; PLS-SEM minimum sample size should be equal to the larger of the following: (1) ten times the largest number of formative indicators used to measure one construct or (2) ten times the largest number of structural paths directed at a particular latent construct in the structural model.

   b) If the data are to some extent non-normal.
4) Structural Model - If the structural model is complex (many constructs and many indicators)
5) Model Evaluation - If the researcher needs to use latent variable scores in subsequent analyses.

Based on the above rules of thumb, PLS-SEM as the statistical method to assess the research model is justified, since

1) The focus of this study is on predicting the attributes of road transport services affecting tourist satisfaction with these services at the destination, requires the use of latent variables to examine the underlying relationship between the latent variables.

2) This study will use latent variable scores in subsequent analysis, i.e. for calculating tourist satisfaction index for modes of transport.

The calculation of the Tourist Satisafction Index is derived from the Structural Equation Model in which tourist satisfaction is evaluated with respect to its antecedents. The model generates the weights of the three satisfaction measures, provides information on the structural relationships and serves as the baseline model for the calculation of the Index (Song et al., 2011).

3.6.2 Satisfaction Index

Customer satisfaction indexes can be "expected to be an important complement to traditional measures of economic performance, providing useful information not only to the firms themselves but also to the shareholders and investors, government regulators and buyers" (Fornell as cited in Chan et al., 2003). Constructing a Satisfaction Index is a practice that tends to be undertaken at a country or regional level (Wang, 2016). Oliver's (1980) expectancy-disconfirmation framework and Johnson & Fornell's (1991) Framework of Customer Satisfaction has been the common theoretical foundation for the development of several consumer satisfaction indexes such as the Swedish Customer Satisfaction Barometer (Fornell, 1992), the American Customer Satisfaction Index (Fornell et al., 1996), Hong Kong Customer Satisfaction Index (Chan et al., 2003) and Tourist Satisfaction Index, (Song et al., 2011).

The calculation of the Tourist Satisfaction Index is derived from the structural equation model in which tourist satisfaction is evaluated concerning its antecedents. The model is estimated using a component-based approach known as Partial Least squares (PLS) and is expected to be applicable to various service sectors because the constructs are designed to provide the necessary level of generality (Song et al., 2012). The Hong Kong Tourist Satisfaction Index is a well-publicised destination level index that is grounded in the theoretical approach similar to that of the American Customer Satisfaction Index (Wang, 2016). The theoretical and empirical methods used in this study are mostly based on the American Customer Satisfaction Index and Hong Kong Tourist Satisfaction Index.

3.6.3 The Mediating Role of Perceived Performance and Perceived Value

Mediation represents a situation in which a mediator variable to some extent absorbs the effect of an exogenous on an endogenous construct in the PLS path model (Hair et al.,

2014). According to Baron and Kenny (1986), a mediating factor refers to a third variable that accounts for the relations between the independent (predictor) and dependent (outcome) variables. The core characteristic of a mediating effect (i.e., indirect effect or mediation) is that it involves a third variable that plays an intermediate role in the relationship between the independent and dependent variables (Preacher and Hayes, 2008).

Bootstrap method

In this approach, bootstrapping can be used twice: first without the presence of mediation, and secondly, with the presence of mediation. It should be noted that if the direct path is not significant, there is no mediating effect (Kwan & Wong, 2015; Hair et al., 2014).

Hair et al. (2014) proposed following guidelines for mediation analysis in PLS-SEM

- First evaluate the significance of the direct path; if the direct effect is not significant, there is no mediation.
- If the direct path is significant, then include the mediating variable and use the bootstrapping procedure again.
- If the indirect path is not significant after bootstrapping, there is no mediation; if it is significant, then calculate the Variance Accounted For (VAF).

According to Hair et al. (2014), a Variance Accounted For (VAF) value of greater than 80% is full mediation, a value between 20% and 80% is partial mediation and a value less than 20% means there is no mediation.

Based on existing literature and logic, perceived performance and perceived value were tested for mediating effect between transport accessibility and tourist satisfaction.

3.6.4 Moderating Role of Mode of Transport

The proposed research model incorporated the moderation effect of mode of transport to determine whether the mode of transport influences the relationship between the

attributes of road transport services and tourist satisfaction with these services at the destination.

Baron and Kenny (1986) define a moderator as "a qualitative or quantitative variable that affects the direction and/or strength of the relation between an independent or predictor variable and a dependent or criterion variable". For the concept of moderation in relationship studies Cohen et al. (2003) observed that in statistics and regression analysis, moderation occurs when the relationship between two variables depends on a third variable. The third variable is referred to as the moderator variable or directly the moderator (Samson et al., 2015).

Moderation analysis is used when one is interested in testing whether the magnitude of a variable's effect on some outcome variable of interest depends on a third variable or set of variables (Hayes, 2012). Preacher et al. (2007) stated that when the strength of the relationship between two variables is dependent on a third variable, moderation is said to be occurring. The third variable, or moderator (W), interacts with X in predicting Y if the regression weight of Y on X varies as a function of W. Moderation is also known as interaction. Moderator variables affect the strength and/or direction of the relation between a predictor and an outcome: enhancing, reducing, or changing the influence of the predictor (Fairchild and MacKinnon 2008).

Using multiple regressions to assess the effects of categorical moderator variables (i.e. slope differences across groups) involves a regression equation that examines the relationship between a predictor X and categorical moderator W with a criterion Y. The third variable, or moderator (W), interacts with X in predicting Y if the regression weight of Y on X varies as a function of W (Hayes 2018).

Moderation is typically assessed with the regression equation:

$$b_0 + b_1 X + b_2 W + b_3 XW.$$

The effect of a one-unit change in X on Yˆ is expressed by the function

$$\theta_{X \rightarrow Y} = b_1 + b_3 W$$

where $\theta_{X \rightarrow Y}$ is the conditional effect of X on Y, defined as the amount by which two cases that differ by one unit on X are estimated to differ on Y (Hayes 2018).

Moderated Multiple Regression (MMR) is the method of choice for testing hypotheses about the moderating effects of categorical variables in a variety of research domains (Aguinis et al. 2005).

The conceptual and statistical model using moderation analysis is presented in the figure 3.1

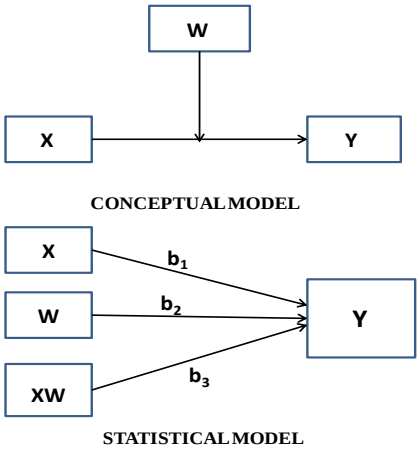

Figure 3.1: Conceptual and Statistical Model using Moderation Analysis

Source: Moderation Model Templates for PROCESS for SPSS by Hayes (2013)

Montoya (2016) suggested that the relationship between X and Y may get stronger or weaker as Moderator increases, and in order to understand the full nature of the contingency, it is crucial to interpreting the sign and magnitude of the regression coefficients. An estimate of b_3 is the expected change in the effect of X on Y with a one unit change in W. Therefore if b_3 is positive, the relationship between X and Y will become more positive as W increases. If b_3 is negative, the relationship between X and Y will become more negative as W increases. The magnitude of b_3 indicates how much the relationship changes with a one unit change in W (Montoya, 2016).

In this study, the relationship between a predictor attributes of road transport services (X) and categorical moderator variable mode of transport (W) with a criterion tourist satisfaction (Y) is analysed. The variable attributes of road transport services is tested separately for each attribute which includes transport accessibility, perceived performance and perceived value.

3.6.5 Importance-Satisfaction Analysis / Quadrant Analysis

"Importance-Satisfaction" (IS) Analysis is referred as the application of Importance-Performance Analysis model to the management of human resources and requires employee evaluation of the importance of and satisfaction with salient job attributes (Lee Graf et al. 1992). Matrilla and James (1977) first proposed Importance-Performance Analysis (IPA) as a useful tool to provide management insights to identify company strengths and weaknesses for improving company performance. Some researchers have used IPA to study customer satisfaction to identify improvement opportunities and to guide strategic planning efforts (Wu & Shieh, 2009, 2010; Yavas & Shemwell, 2001, Chen & Lin, 2013).

Hawes and Rao (1985) stated that Importance-Performance Analysis (IPA) is a marketing research technique that involves the analysis of consumer attitudes toward key attributes or characteristics of the product, service or organization, which can be defined as the critical dimensions of any marketing strategy. Importance-Performance Analysis as a marketing research technique has been applied to different markets such as automobile dealers' service (Matrilla & James, 1977), health Care (Hawes & Rao, 1985; Chen & Lin, 2013), service quality in spa hotels (Blesic et al., 2014), Tourism Policy (Evans & Chon, 1989), escorted tour (Duke & Persia, 1996), Importance-Satisfaction Analysis has been applied in tourism and hospitality for analysing destination image (Joppe et al., 2001; O'Leary & Deegan, 2005) and destination choice (Ahmet Aktas et al., 2006)

Applying Importance-Satisfaction Analysis

Lee Graf et al. (1992) suggested that the application of Importance-Satisfaction Analysis involves three simple steps

1) The first step involves generating a fairly comprehensive list of salient attributes that are relevant to the situation being examined.
2) Once an exhaustive list of attributes has been finalized, importance and satisfaction scales must be developed.
3) After the data are collected, mean values are computed for the importance and satisfaction scores associated with each attribute.

For analysing data in an Importance-Satisfaction study, computed mean values for each attribute's importance and its satisfaction are plotted on the Importance-Satisfaction graph. A two-dimensional graph is then constructed with the importance scale representing the vertical axis and the satisfaction scale constituting the horizontal axis.

The mean importance value and the mean satisfaction rating for each attribute are plotted as points on the importance-satisfaction grid. The position of a plot on the grid indicates the appropriate strategy for each attribute: Concentrate Here, Keep up the Good Work, Low Priority or Possible Overkill (Hawes & Rao, 1985).Quadrant analysis of customer satisfaction measures is used to provide an underlying understanding of the ratings (Transportation Research Board 1999, 2004) as mentioned below:

1) **Quadrant I - Strengths / Keep up the Good Work:** attributes above the median in both - customer satisfaction and customer importance are plotted here. The attributes are rated as highly important and highly satisfied. Items in this quadrant therefore simply call for a continuation of the positive emphasis that currently exists.

2**) Quadrant II** - **Weakness or Opportunity / Concentrate Here**: Attributes above the median in importance but below the median in satisfaction are plotted here. The attributes are very important to customers, but they are relatively less satisfied with the service provided. This quadrant should be given top priority.

3) **Quadrant III** - **Non Critical/ Low Priority**: This quadrant contains those attributes which are low in importance and also satisfaction. A possible discontinuance of expenditure of additional resources / efforts on these attributes may be considered.

4) **Quadrant IV Maintenance of Efforts / Possible Overkill**: Attributes below the median of importance but above the median of satisafaction are plotted here. For attributes in this quadrant, the service provider is doing a good job, but customers attach only slight importance to these items. The significant emphasis placed on these attributes should be selectively decreased unless other good reasons exist for continuing this practice.

Presentation of the results on the Importance-Satisfaction grid facilitates interpretation of the data, increases its usefulness in making strategic marketing decisions, and

provides an overview of the relationship between attribute importance and satisfaction ratings (Matrilla and James 1977, 2004, Lee Graf et al., 1992, Transportation Research board 1999).After identifying service attributes from the Importance-Satisfaction Analysis, the attributes are analysed applying the Three-Factor Theory (Matzler et al.,2004), in which service attributes can be classified into three groups as basic factors, performance factors, and excitement factors.

3.7 **SUMMARY**

A quantitative research design was adopted based on Tourist Satisfaction Index model to test the proposed relationship between the various attributes of road transport services and tourist satisfaction with these services at the destination. The questionnaires were administered to the tourist using local transport services and the data collected from 606 respondents was analysed using SEM technique with PLS software, Mediation, Moderation and Importance-Satisfaction Analysis to evaluate the service quality attributes of road transport services.

CHAPTER 4

DEVELOPMENT OF HYPOTHESES AND SCALE

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DEVELOPMENT OF HYPOTHESES AND SCALE

4.1 INTRODUCTION

This chapter lays out the definition of the terms used in the study and the hypotheses developed to test the relationships in the proposed models. This chapter also discusses the development of scale items to measure the constructs and the results about the validity of the measurement items.

4.2 DEVELOPMENT OF THE CONCEPTUAL MODEL

Tourist satisfaction is vital for successful destination marketing because it influences the choice of destination, the consumption of products and services and the decision to return (Kozak & Rimmington, 2000). Tourist satisfaction is the result of multiple factors including the expectations generated before and during the trip as well as the tourists' perceptions of the services received (Pizam, Neumann, & Reichel, 1978).

Measuring tourist satisfaction with transportation services is an essential topic in tourism and transportation research, in order to understand the extent to which tourist are satisfied. It will also provide valuable information to transport service providers about which aspects of their services are essential for tourists and will help them improve their services accordingly.

Customer satisfaction in the service sector is measured by using consumer perception about the quality of services (Berry, Parasuraman, & Zeithaml,1988; Kumar, 2012). There are various frameworks developed to explain customer satisfaction viz. Assimilation Theory, Contrast theory, Assimilation- Contrast theory, Expectancy-Disconfirmation Theory, Equity Theory, Attribution Theory, Value-Percept Theory, Comparison Level Theory, Importance-Performance Theory, Kano's theory, Performance only approach, and Expectation-perception gap model (Yi, 1990; Yüksel & Yüksel, 2001, 2008; Wang, 2016).

For any tourism destination, tourist satisfaction is a leading indicator of performance. Ensuring tourist satisfaction is critical and needs greater attention of service providers at the destination. Various psychological and consumer behaviour theoretical approaches for measuring customer satisfaction are based on the assumption that satisfaction is a mental condition of the customer and thus evaluation of the performance is subjective (Grigoroudis et al., 2004). Satisfaction is defined as the consumer's overall cognitive or affective response to services or products used (Oliver, 1997). Tourist satisfaction at a destination level is a sum of the numerous individual experiences that occur during the stay at the destination, which may result into satisfaction or dissatisfaction with some aspects of their trip (Wang, 2016).

Johnson and Fornell (1991) argued that in a dynamic perspective the customer's experience with products and services may result in a general increase in perceived satisfaction. The framework presented the concept of cumulative consumer satisfaction that represents an overall evaluation based on the entire purchase and consumption experience with a product or service and is more fundamental and useful in predicting the consumer's subsequent behaviour and the firm's economic performance (Johnson & Fornell, 1991).

Kano et al. (as cited in Gregory and Parsa, 2012) challenged the traditional customer satisfaction models that suggest higher satisfaction is consistent across the product attributes and asserted that not all attributes are equal in the consumer mind and not all the attributes have a linear relationship to satisfaction. Kano's model of customer satisfaction differentiates product attributes by satisfaction or dissatisfaction perceived by the customer.

The conceptual model for this study is based on Fornell's American Customer Satisfaction Index model (1996) and the Tourist Satisfaction Index model (Song et al., 2011). In this study, transport accessibility, perceived performance and perceived value are incorporated into the conceptual model as important antecedents to tourist satisfaction. Tourist satisfaction is measured as a latent variable. The conceptual model of the study is shown in Figure 4.1

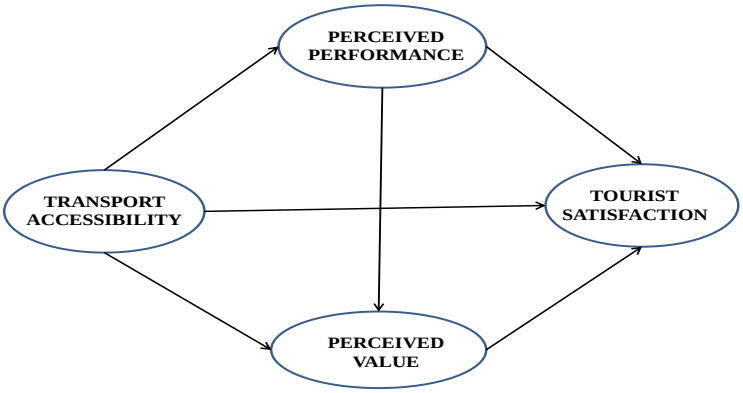


Figure 4.1: Conceptual Model

Source: Researcher's Model

4.3 DEVELOPMENT OF HYPOTHESES

A research hypothesis is a predictive statement, capable of being tested by scientific methods, that relates an independent variable to some dependent variables and is a formal question that a researcher intends to solve (Kothari & Garg, 2014). The inputs gained from the preliminary survey and literature review were used in the formulation of hypotheses. The hypotheses gave further direction for the preparation of the questionnaire and the analysis and interpretation of the quantitative study. This research intends to study the tourists' use of transportation services and the attributes of road transport services affecting their satisfaction by applying Fornell's model of tourist satisfaction.

The study proposed to test the following relationships between transport accessibility, perceived performance, perceived value and tourist satisfaction with road transport services at the destination.

4.3.1 Influence of transport accessibility on perceived performance, perceived value and tourist satisfaction with road transport services at the destination:

Accessibility, in simple terms, refers to the distance to be covered or the costs to be incurred in reaching a connection with an available transport means (Troxel, 1955). Accessibility, a concept used in fields such as transport planning and geography, is

studied in tourism to mean the provision of transportation services at the destination. Litman (2003) defines accessibility (or just access) as the ability to reach desired goods, services, activities and destination (collectively called opportunities).

According to Singleton (2013), accessibility refers to the feasibility of the travel option based on the constraints of the built /natural environment and the factors that affect the quality or the number of options for travel in the built environment. Abu Ali and Howaidee (2012) found that destination accessibility which includes transport infrastructure, equipment, operational factors and government regulations at the destination - influences tourist satisfaction.

The effect of transportation services and accessibility as variables of destination satisfaction were researched by (Araslı & Baradarani, 2014; Shahrivar, 2012; Tóth & Dávid, 2010). Accessibility of urban tourism products acquires a high level of significance in the measurement of transport performance and visitors may experience a higher level of dissatisfaction where the minimum requirements are not present (Thompson & Schofield, 2007). As acknowledged by different studies, transport is an essential element of tourism, as it facilitates the movement of tourists within the destination. Availability of transport also determines the selection of the destination by tourists helps the economic development of the region and also has an influence on overall satisfaction. In this study, transport accessibility is proposed as an antecedent to tourist satisfaction, and its relationship with perceived performance and perceived value has been examined. Accordingly, the following hypotheses were proposed

- H1 Transport Accessibility has a positive effect on perceived performance.
- H2 Transport Accessibility has a positive effect on perceived value.
- H3 Transport Accessibility has a positive effect on tourist satisfaction with road transport services at the destination.

4.3.2 Influence of Perceived Performance or Quality on tourist satisfaction with road transport services at the destination and Perceived value

According to Oliver (1977, 1980) “perceived performance refers to a person’s perception of the actual performance of a product, service or technology artefact.” Perceived quality is a measure of the customer’s evaluation via recent consumption

experience, of the quality of a company's product or service (American Consumer Satisfaction Index 1996).

Transportation services being labour-intensive, are heterogeneous, their performance often varies from producer to producer, from customer to customer and from day to day. Ensuring consistency in the delivery of services is difficult because what the firm intends to deliver may be entirely different from what the customer receives (Transportation Research Board 1999). As mentioned earlier, delivering quality service means conforming to customer expectations consistently.

In a study to investigate public transit passenger behaviour, Lai and Chen (2011) constructed a comprehensive model considering involvement, service quality, perceived value, satisfaction and behavioural intentions and found that behavioural intentions significantly depend upon passenger satisfaction and to enhance passenger satisfaction, two antecedents viz. service quality and perceived value must be addressed.

The Passenger road transport industry is a service industry; quality of service has special significance on customer satisfaction (Mekoth, 1997) and can be measured and judged by specific performance parameters. From the literature, it is quite evident that the quality of road transport services is significant for tourism development.

Research in the area of urban public transport performance has always been focused on local users, not on overseas visitors. However, it is essential to consider tourists as well, because as compared to local people, tourists, especially international tourists, are typically unfamiliar with the public transit systems of the destinations they visit (Chang & Lai, 2009).

In the field of service marketing and tourism research, perceived performance is found to have a significant relation with perceived value and tourist satisfaction (Baker & Crompton, 2000; Bigné et al., 2001; C. F. Chen, 2008; Markus Fellesson & Friman, 2008; He, Yanqun, 2012; Hu & Jen, 2006; Lai & Chen, 2011; Mingfang, 2011; Song et al., 2012; Tyrinopoulos & Antoniou, 2008; X. Wang et al., 2009).

Perceived quality has a positive effect on tourist satisfaction (Kerdpitak & Heuer, 2016) and was found to be a significant predictor in determining tourist satisfaction and had a

positive association with perceived value (Wang et al., 2009). This study proposes to examine the relationship between transport accessibility, perceived performance and tourist satisfaction and also examine whether perceived performance mediates the relationship.

The following hypotheses were proposed.

- H4 Perceived performance has a positive effect on tourist satisfaction with road transport services at the destination.
- H5 Perceived performance has a positive effect on perceived value.

4.3.3 Influence of Perceived Value on tourist satisfaction with road transport services at the destination:

Perceived Value is the consumers' overall assessment of the utility of a product based on their perception of what is received and what is given (Zeithaml, 1988). In tourism and hospitality research, perceived value has always received considerable attention while investigating the relationship between quality and / or satisfaction (Gallarza & Saura, 2006). According to Mingfang (2011), in tourism literature, tourist satisfaction is generally value- or price-related, as the consumer will take both price and quality into consideration while assessing a selective destination value.

Wang et al. (2009) found that perceived value has a direct and positive association with tourist satisfaction and also plays a crucial intervening role in the relationship between perceived quality and tourist satisfaction. The study thus suggests that perceived value should be measured by multidimensional items including price, time and efforts. In order to give tourists more value, destination managers should design products and itineraries to reduce tourist time and efforts. The positive relationship between perceived value and tourist satisfaction has been identified by He & Song (2008), Lee et al. (2007), Mingfang (2011), Song et al. (2012) and Wang Xia et al. (2009).

In light of the above details, the proposed hypothesis is

- H6 Perceived value has a positive effect on tourist satisfaction with road transport services at the destination.

4.3.4 Tourist satisfaction with road transport services at the destination:

Tourist satisfaction is critical to tourist destination because it influences the choice of destination, consumption of services during the visit and future intentions (Kozak & Rimmington, 1999). Measuring tourist satisfaction with transportation services is an essential topic in tourism and transportation research in order to understand the extent to which tourist are satisfied. It will also provide valuable information to service providers about which aspects are important for tourists and will help them improve their services accordingly.

Tyrinopoulos and Antoniou (2008) conducted an analysis of the variability of users' behaviour and level of satisfaction with public transit services using a variety of performance and quality indicators such as on-time performance, average waiting time at terminals and stops, vehicle load, average route speed, conditions at the terminals and stops, safety, information provision , accessibility, and many others. In general, service frequency, vehicle cleanliness, waiting conditions, transfer distance and network coverage were the most important satisfaction attributes.

Lai and Chen (2011) defined satisfaction as, "the extent of overall pleasure or contentment felt by the public transit passenger, resulting from the ability of trip experience to fulfil the passenger's relevant desire, expectations and needs". Le-Klähn, Gerike and Michael Hall (2014) investigated the use of public transport by visitors in the city of Munich, Germany to understand how visitors perceive public transport services and which factors influence their level of satisfaction. The study found that travelling, comfort, service quality, accessibility and additional features of service dimensions were positively evaluated by tourists.

Studies on tourist satisfaction have researched the relationship that exists between perceived performance, expectation, perceived value and satisfaction at the destination. In the case of transportation services, an increase in customer satisfaction translates into retained markets, increased use of the system attract new customers and also creates a positive image (Transportation research board, 1999).

Customer satisfaction index studies have measured customer satisfaction as a latent variable associated with three indicators: overall satisfaction, confirmation of

expectations and comparison with ideal (Fornell et al. American Customer Satisfaction Index (1996), Chan et al. Hong Kong Customer Satisfaction Index (2003), Song et al. Hong Kong Tourist Satisfaction Index (2012). In this study, the construct tourist satisfaction is measured by adopting the same indicators.

4.3.5 Satisfaction Index

Constructing a Satisfaction Index is a practice that tends to be undertaken at a country or regional level (Wang, 2016). Customer satisfaction index can be "expected to be an important complement to traditional measures of economic performance, providing useful information not only to the firms themselves but also to the shareholders and investors, government regulators and buyers" (Fornell as cited in Chan et al., 2003).The theoretical and empirical methods used in this study are mostly based on the American Customer Satisfaction Index and Hong Kong Tourist Satisfaction Index.

4.3.6 The mediating role of Perceived performance and Perceived value

Based on the existing literature, it is found that for any tourist destination, transport accessibility means the ease of reaching attractions considering travel time, efforts and costs and by using the available modes of transport at the destination.Transport services being labour-intensive are heterogeneous; their performance often varies from producer to producer, from customer to customer and from day to day, therefore ensuring consistency in the delivery of services is difficult because what the firm intends to deliver may be entirely different from what the customer receives (Transportation Research Board, 1999). Also in tourism and hospitality research, perceived value has always received more attention while investigating the relationship with satisfaction. It is proposed that perceived performance and perceived value mediates the relationship between transport accessibility and tourist satisfaction.

For testing the mediating effect, the following hypotheses were proposed

H7: The relationship between transport accessibility and tourist satisfaction with road transport services at the destination is mediated by perceived performance.

H8: The relationship between transport accessibility and tourist satisfaction with road transport services at the destination is mediated by perceived value.

4.3.7 Moderating Role of Modes of transport

Moderation analysis is used when one is interested in testing whether the magnitude of a variable's effect on some outcome variable of interest depends on a third variable or set of variables (Hayes, 2012). The researcher proposed from the review of the literature as well as from a preliminary survey that the relationship between attributes of road transport services and tourist satisfaction might be moderated by modes of transport. Previous research did not explain this situation. Therefore as suggested by Baron and Kenny (1986), Modes of transport was introduced as the moderator variable, since inconsistent relations were expected between satisfaction and its predictors across categories.

Modes of transport used by tourists in Goa included eight modes. For the purpose of analysis they are clubbed into three categories viz. Mass transport, Hired Vehicles and Self-driven vehicles

1. Mass transport includes modes such as Public Bus transport (KTCL), Private bus transport, Sightseeing vehicles arranged by hotels, tour operators, Government sightseeing vehicles.
2. Hired Vehicles include Taxi/ Cab, Motorcycle taxi (Pilot) and Autorickshaw.
3. Self-driven include Rent a Bike and Rent a Car.

This study considers mode of transport as a moderator for the relationship between transport accessibility, perceived performance, perceived value and tourist satisfaction. Therefore the association between attributes of road transport services (X) viz. transport accessibility, perceived performance, perceived value and tourist satisfaction (Y) is expected to be moderated by the modes of transport (W) used by the tourist at the destination.

The following hypotheses were proposed and tested using moderation analysis as under:

H9. The mode of transport moderates the relationship between tourist satisfaction with road transport services and each of the identified antecedents, viz. transport accessibility, perceived performance and perceived value.

- H9a: The mode of transport moderates the relationship between transport accessibility and tourist satisfaction with road transport services at the destination.
- H9b: The mode of transport moderates the relationship between perceived performance and tourist satisfaction with road transport services at the destination.
- H9c: The mode of transport moderates the relationship between perceived value and tourist satisfaction with road transport services at the destination.

4.4 PROPOSED HYPOTHETICAL MODEL OF THE STUDY

The proposed hypothetical model of the study is shown in Figure 4.2

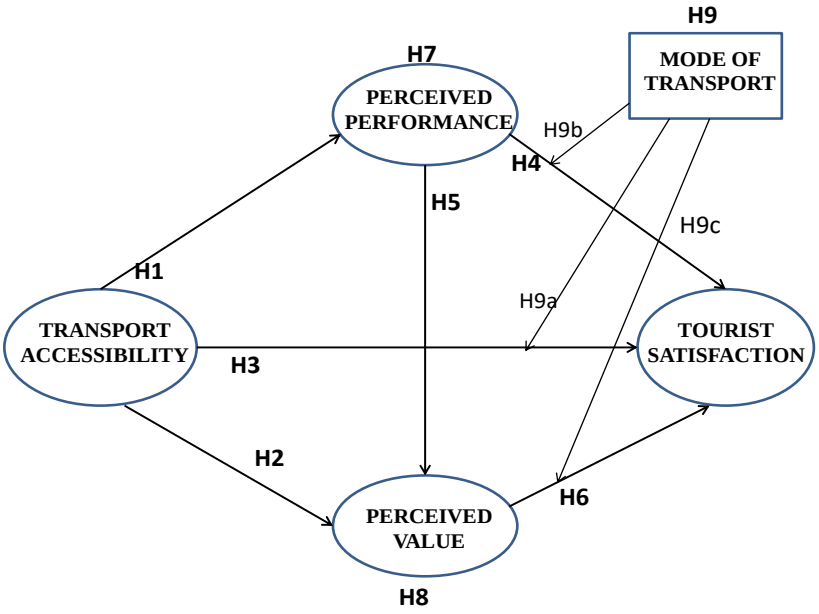


Figure 4.2: Proposed Hypothetical Model

Source: Researcher's Model

List of hypotheses proposed for the study

- H1: Transport Accessibility has a positive effect on perceived performance.
- H2: Transport Accessibility has a positive effect on perceived value.
- H3:Transport Accessibility has a positive effect on tourist satisfaction with road transport services at the destination.
- H4: Perceived performance has a positive effect on tourist satisfaction with road

transport services at the destination.

- H5: Perceived performance has a positive effect on perceived value.
- H6: Perceived value has a positive effect on tourist satisfaction with road transport services at the destination.
- H7: The relationship between transport accessibility and tourist satisfaction with road transport services at the destination is mediated by perceived performance.
- H8: The relationship between transport accessibility and tourist satisfaction with road transport services at the destination is mediated by perceived value.
- H9: The mode of transport moderates the relationship between tourist satisfaction with road transport services and each of the identified antecedents, viz. transport accessibility, perceived performance and perceived value.
  - H9a: The mode of transport moderates the relationship between transport accessibility and tourist satisfaction with road transport services at the destination.
  - H9b: The mode of transport moderates the relationship between perceived performance and tourist satisfaction with road transport services at the destination.
  - H9c: The mode of transport moderates the relationship between perceived value and tourist satisfaction with road transport services at the destination.

4.5 OPERATIONAL DEFINITIONS OF THE TERMS USED

4.5.1 Accessibility, Tourist Accessibility and Transport Accessibility

- Litman (2003) defines Accessibility (or just Access) as "the ability to reach desired goods, services, activities and destination (collectively called opportunities)"
- According to Handy and Niemeier (1997), "the transportation element of accessibility reflects the ease of travel between points in space, determined by the character and quality of services provided by the transportation system and measured by travel distance, time or cost."
- Tourist Accessibility: "Defining and evaluating the tourist accessibility should take into account the characteristics of the transportation system, the ease to reach the tourist site from a certain location, the time taken, the costs and effort

made to go that distance" (Banica & Camara, 2011).

- Transport Accessibility: According to Ali and Howaidee (2012), "These are the private and public transport aspects of overall tourism product that determine the cost, speed and convenience with which the traveller may leave his place of residence and reach a chosen destination. They include 1) Infrastructure: roads and parking.2) Equipment: size, speed and range of transport vehicles.3) Operational factors: routes operated, the frequency of services, prices charged and road tolls levied.4) Transport facilities at the destination: taxis, coaches, car rentals and cycle hire."

The operational definition of Transport Accessibility for this research

- Transportation element of accessibility taking into account the ease of travel between attractions at the destination, determined by the quality of services provided by the transportation system which are private and public transport aspects of overall tourism including transportation infrastructure (roads, car parking), equipment and facilities (modes of transport and stops), and operations (routes operated, frequency of services, prices charged).

4.5.2 Perceived Performance

- According to Oliver (1977, 1980), "perceived performance refers to a person's perception of the actual performance of a product, service or technology artefact.
- Perceived quality or performance is a measure of the customer evaluation, via recent consumption experience, of the quality of a company's product or service and is expected to have a direct and positive effect on overall customer satisfaction (Fornell et al., 1996).

The operational definition of Perceived Performance for this research:

- The tourist's perception of the actual performance of the road transport services.

4.5.3 Perceived value

- Perceived value is the consumer's overall assessment of the utility of a product based on perceptions of what is received and what is given (Zeithaml, 1988).
- The positive relationship between perceived value and tourist satisfaction has also been identified in the tourism field (Wang Xia et al., 2009)

The operational definition of Perceived Value for this research:

- The tourist's overall appraisal of the value of the service provided, based on his/her assessment of what is received (benefits) and what is given (costs or sacrifice).

4.5.4 Tourist satisfaction

- Tourist satisfaction is the result of the interaction between a tourist's experience at the destination area and the expectations he had about that destination" (Pizam, Neuman & Reichel, 1978).
- Satisfaction is defined as the extent of overall pleasure or contentment felt by the public transit passenger, resulting from the ability of the trip experience to fulfil the passenger's relevant desires, expectations, and needs (Lai & Chen, 2011).

The operational definition of Tourist Satisfaction for this research:

- The extent of overall pleasure or contentment felt by the tourist resulting from the ability of the trip experience to fulfil his desires, expectations, and needs.

Table 4.1: Summary of Operational Definitions of the Constructs

No	Construct	Definition
1	Transport Accessibility	Transportation element of accessibility taking into account the ease of travel between attractions at the destination, determined by the quality of services provided by the transportation system which are private and public transport aspects of overall tourism including transportation infrastructure (roads, car parking), equipment and facilities (modes of transport and stops), and operations (routes operated, frequency of services, prices charged).
2	Perceived Performance	The tourist's perception of the actual performance of the transport services.
3	Perceived Value	The tourist's overall appraisal of the value of the service provided, based on his assessment of what is received (benefits) and what is given (costs or sacrifice).

4	Tourist satisfaction	The extent of overall pleasure or contentment felt by the tourist resulting from the ability of the trip experience to fulfil his desires, expectations, and needs.

Source: Researcher's compilation

4.6 IMPORTANCE-SATISFACTION ANALYSIS OF ATTRIBUTES OF THE ROAD TRANSPORT SERVICES

"Importance-Satisfaction" (IS) Analysis is referred as the application of Importance-Performance Analysis (IPA) model to the management of human resources and requires employee evaluation of the importance of and satisfaction with salient job attributes (Lee Graf et al., 1992).

Service quality is a measure of how well the service level delivered matches customer expectations, while a firm delivering quality services means that it is conforming to customer expectations consistently (Transportation Research Board 1999, 2004). There may be some service quality attributes of the road transport system, which might be considered important and may also influence tourist satisfaction during their visit. Therefore it was found necessary to identify some attributes influencing satisfaction applying Importance-Satisfaction Analysis. This research examines the perceptions of tourists in Goa in terms of importance and satisfaction concerning the attributes of the road transport services.

4.7 DEVELOPMENT OF THE QUESTIONNAIRE

In developing the questionnaire, the starting point was the broad research question, which had emerged out of gaps in the existing literature. Cooper and Schindler (2006) have described the different types of questions that must be formulated before the questionnaire is finally prepared.

These questions are:

1. Research Question and Sub-questions
2. Investigative Questions
3. Measurement Questions

The research question of the study is “Which service quality attributes of road transport services influence tourist satisfaction with these services at the destination?”

This question is further supported by the following investigative sub-questions to be more specific

1) Do tourists’ perceptions of transport accessibility, performance and value influence satisfaction with road transport services at the destination?

2) What is the level of tourist satisfaction with various modes of transport at the destination?

3) Does mode of transport have any influence upon transport accessibility, perceived performance, perceived value and tourist satisfaction?

4) Which quality attributes of road transport services do tourists consider to be important? Are tourists satisfied with the performance of road transport services with respect to service quality attributes?

Predesigned measurement questions are the questions that have been formulated and tested by previous researchers, are recorded in the literature and may be applied as they are, or be adopted with modification to suit the research (Cooper & Schindler, 2006). These are the questions that are asked to the respondents and appear on the questionnaire.

Predesigned measurement questions were adopted from

- (a) The American Customer Satisfaction Index: The National Measure of Customer Satisfaction, Methodology report (2005) used by customer and tourist satisfaction index studies and
- (b)"A Handbook for Measuring Customer Satisfaction and Service Quality” of Transportation Research Board (1999), scales used by the studies on tourism and transportation research.

The scale development began with an extensive review of the literature on transport and tourism, tourist satisfaction, attributes of road transport services such as transport

accessibility, perceived performance, perceived value and service quality. For the constructs perceived performance, perceived value, tourist satisfaction, predesigned measurement items were adopted from the literature.

A new scale had to be developed for the transport accessibility construct through a preliminary survey and from the literature. Content Validity was carried out to test the validity of the developed scale. Pre-testing of the questionnaire was done before the actual data collection. The purpose of this procedure was to ensure that the scale items measure the constructs they represent and also to ensure that the respondents would be able to answer the questionnaire without any difficulty.

4.7.1 Measurement Variables for Constructs

Table 4.2 below lists the measurement variables identified from the literature for the constructs transport accessibility, perceived performance, perceived value, tourist satisfaction and adopted in the study instrument.

Table 4.2: List of Measurement Variables for Constructs

No	Latent Constructs	Measurement Variables	Source
1	Transport Accessibility	Operational factors: 1) The convenience of local transportation services. 2) Availability of travel information. 3) The frequency of local transport services.	Arasli (2014); Chi & Qu (2007); Thompson and Schofield (2007); M. Kozak (2001); Andriotis (2008); Arasli (2014);
		Equipment 4) Local transport vehicles are safe. 5) Easy access through different modes of transport.	Chi & Qu (2007); Thompson and Schofield (2007); Dell Corte (2015); Chi & Qu (2007);
		Infrastructure 6) Quality of streets and road	Chi & Qu (2007); Dell Corte (2015); Kahtani et al.,

		signs. 7) Availability of local parking.	(2011);Thompson and Schofield (2007);
		Facilities 8) A network of local transport services. 9) Level of local transportation prices.	Andriotis (2008); Chi & Qu (2007); Arasli (2014); M. Kozak (2001);
2	Perceived performance	1) Overall evaluation of quality experience with service (post-purchase).	Fornell et al. (1996); Chan et.al (2003); He and Song (2008); Songet.al (2011,2012)
		2) Evaluation of customization experience, or how well the service fits the customer's requirements (post-purchase).	
		3) Evaluation of reliability experience, or how often things have gone wrong with service (post-purchase).	
3	Perceived Value	1) Rating of price given quality.	Fornell et.al. (1996); Chan et.al. (2003); He and Song (2008); Song et.al (2011,2012);
		2) Rating of quality given price.	
4	Tourist satisfaction	1) Overall satisfaction.	Fornell et.al. (1996); Chan et.al. (2003); He and Song (2008); Song et.al. (2011,2012) Wang Xia et.al. (2009); Grigoroudis and Siskos (2004);
		2) Expectancy disconfirmation (performance that falls short of or exceeds expectations).	
		3) Performance versus the customer's ideal service in the category.	

Source: Researcher's compilation

All four constructs in the model are measured by multiple items using 11-point Likert scales that range from 0 for "worst" to 10 for "best" (Chan et al., 2003; Song et al.,

2011, 2012). The use of 11-point scales and multiple indicators is to allow tourists to make better discriminations and can also help to reduce the negative skewness that is commonly associated with the distributions of ratings for satisfaction-related indicators (Fornell et al., 1996, Chan et al., 2003, Song et al., 2011, 2012). Such scales and indicators are commonly used in consumer satisfaction surveys (Chan et al., 2003; Song et al. 2011, 2012).

4.7.2 Measurement Items for Attributes of Service Quality:

Service quality is a measure of how well the service level delivered matches customer expectations, and a firm delivering quality services means that it is conforming to customer expectations consistently (Transportation Research Board, 1999, 2004). Therefore the extent to which service performance matches customer expectations influences the degree to which the customer feels satisfied. There may be some service quality attributes of the transport system, which might be considered essential and may also influence tourist satisfaction during their visit. Therefore it was found necessary to identify some attributes influencing satisfaction applying Importance-Satisfaction Analysis on a 5 point Likert Scale with "1" as not at all important/ satisfied to "5" as extremely important/satisfied.

Table 4.3: List of Measurement Items for Service Attributes

No	Attributes	Measurement item	Source
1	Service Frequency	Frequent services, so that wait times are short.	Mekoth (1997); Eboli and Mazulla (2007, 2011) Tyrinopoulos & Antoniou (2008); Hough & Hassanien (2010); Kinsella and Caulfield (2011) Lai and Chen (2011); Castillo and Benitez (2013); Le-Klahn & Hall (2014); Nwachukwu (2014); Guirao (2016) , Felleson & Friman (2008); Transportation Research Board 1999, 2004)
2	On-time performance	Reliable – come on time.	
3	Service provision	The hours of services during weekdays.	

4	Information provision	1) The availability of schedule /information at stops. 2) Clear and timely announcements at stops. 3) Explanation and announcements of delays. 4) Route and Direction information visible on vehicles. 5) Transit personnel know the system and can provide travel information.	Eboli and Mazulla (2007, 2011) Tyrinopoulos & Antoniou (2008); Kinsella and Caulfield (2011); Kahtani et al.(2011); Lai and Chen (2011); Castillo and Benitez (2013); Le-Klahn & Hall (2014); Nwachukwu (2014); Guirao (2016) , Felleson & Friman (2008);Carreira(2013); Redman (2013); Dell Corte et.al (2015);Transportation Research Board 1999, 2004)
5	Value for cost/price	1) The cost-effectiveness, affordability and value of my trip. 2) The cost of making transfers. 3) Ease of paying the fare. 4) The consistency of fare structure.	Mekoth (1997); Eboli and Mazulla (2007, 2011) Tyrinopoulos & Antoniou (2008); Hough & Hassanien (2010); Kinsella and Caulfield (2011) Lai and Chen (2011); Castillo and Benitez (2013); Le-Klahn & Hall (2014); Nwachukwu (2014); Guirao (2016), Felleson & Friman (2008);Andriotis (2008); Arasli(2014); Chi and Qu (2008), Transportation Research Board 1999, 2004)
6	Personnel behaviour	1) Personnel is polite and friendly while communicating with passengers. 2) Drivers appreciate the safety of passengers when they get on / off the vehicles. 3) Drivers drive smoothly, and their road craft is fine. 4) Friendly, courteous and quick service from	

		personnel.	
7	Vehicles (Physical conditions of vehicles and infrastructure)	1) Companies provide safe and brand new vehicles. 2) Vehicles are clean inside. 3) Noise on the vehicles is not too loud. 4) Air conditioning is very comfortable. 5) No Graffiti.	Eboli and Mazulla (2007, 2011) Tyrinopoulos & Antoniou (2008); Kinsella and Caulfield (2011); Lai and Chen (2011); Castillo and Benitez (2013); Le-Klahn & Hall (2014); Nwachukwu (2014); Guirao (2016) ; Redman (2013) Transportation Research Board 1999, 2004)
8	Comfort	1) Availability of seats. 2) Temperature and humidity on vehicles (Not hot/cold). 3) Vehicles are not overcrowded. 4) The smoothness of ride and stops. 5) Comfort while waiting at stops.	Mekoth (1997); Eboli and Mazulla (2007) Tyrinopoulos & Antoniou (2008); Hough & Hassanien (2010); Castillo and Benitez (2013); Le-Klahn & Hall (2014); Guirao (2016) , Felleson & Friman (2008) Transportation Research Board 1999, 2004)
9	Safety	1) Safe and competent drivers and conductors. 2) Safety from crime on the vehicle. 3) The vehicles are travelling at safe speed. 4) Freedom on the vehicle from the nuisance behaviour of other riders.	Mekoth (1997); Eboli and Mazulla (2007, 2011) Hough & Hassanien (2010); Kinsella and Caulfield (2011) Lai and Chen (2011); Castillo and Benitez (2013); Le-Klahn & Hall (2014); Nwachukwu (2014); Guirao (2016) , Felleson & Friman (2008); Arasli(2014); Redman (2013); Dell Corte et.al (2015);); Chi and Qu (2008) Transportation Research Board

			1999, 2004)
10	Terminals and stops	1) The availability of shelter and benches at stops. 2) Having stops near the destination. 3) The physical conditions of stops. 4) Cleanliness of stops. 5) Safety from crime at stops. 6) The availability of schedule/maps at stops. 7) The absence of graffiti at stops.	Eboli and Mazulla (2007, 2011) Tyrinopoulos & Antoniou (2008); Kinsella and Caulfield (2011); Lai and Chen (2011); Le-Klahn & Hall (2014); Nwachukwu (2014); Guirao (2016); Kahtani et al.(2011) Transportation Research Board 1999, 2004)

Source: Researcher's compilation

4.7.3 Content Validity:

According to Polit and Beck (2004), content validity has been defined as, "the degree to which an instrument has an appropriate sample of items for the construct being measured" (adopted from Polit and Beck, 2006). For researchers who wish to use questionnaires as a research tool, validation of the questionnaire has important implications for research methodology (Patel and Joseph, 2016). Content validity, also known as definition validity and logical validity can be defined as the ability of the selected items to reflect the variables of the construct in the measure. This type of validity addresses the degree to which items of an instrument sufficiently represent the content domain (Newman et al., 2013).

According to Zohrabi (2013), Content validity is concerned with whether our research is believable and true and whether it is evaluating what it is supposed or purports to evaluate and is related to a type of validity in which different elements, skills and behaviours are adequately and effectively measured. Content validity is a priori

evidence that the items are a good representation of the construct (from expert judges) (Rossiter, 2002).

The measurement variables for transport accessibility and service quality attributes adopted from the literature were presented to eleven experts for evaluating content validity. The experts were chosen from the area of consumer behaviour and academic research. Experts were asked to rate each of the items from the questionnaire on a scale of 1-4, on the basis of their relevance, clarity and simplicity.

- For Relevance, the quantifiers are based on 1- Not relevant, 2- Item needs some revision, 3- Relevant but needs minor revision,4- Very relevant
- For Clarity in understanding, the rating was 1- Not clear,2- Item needs some revision,3- Clear but needs some minor revision,4- Very clear
- For Simplicity to understand, the rating was 1- Not simple,2- Item needs some revision,3- Simple but needs some minor revision, 4- Very simple

4.7.3.1 Results of Content Validity:

The CVI is calculated at the item level (I-CVI) and scale level (S-CVI), (Lynn, 1986). According to Polit & Beck, (2006), for a scale to be judged as having excellent content validity, it should be composed of items with I-CVI that meet Lynn's 1986 criteria viz. a minimum of (I-CVI =0.78), for six and more experts and it should have an S-CVI/AVE, of 0.80 or higher.

Table 4.4: Content validity results for important quality attributes for selecting modes

		Relevance		Clarity		Simplicity	
	Attributes	*NA	**I-CVI	NA	I-CVI	NA	I-CVI
1	Comfort	11	1	11	1	11	1
2	Convenience	11	1	11	1	11	1
3	Safety	11	1	11	1	11	1
4	Best priced	10	0.91	9	0.82	10	0.91
5	Flexibility	10	0.91	7	0.64	8	0.73
6	Environment- friendliness	9	0.82	8	0.73	8	0.73
7	Time saving	11	1	10	0.91	11	1
8	Availability	11	1	11	1	11	1
	***S-CVI/average	0.95			0.87		0.92
* NA= No. of Agreements,** I-CVI= Item-level Content Validity Index,***S-CVI= Scale-level Content Validity Index							

Source: Researcher's computations

Table 4.5: Content validity results for construct transport accessibility

		Relevance		Clarity		Simplicity	
	Components of transport accessibility	*NA	** I-CVI	NA	I-CVI	NA	I-CVI
1	Convenience of local transportation services.	11	1	10	0.91	10	0.91
2	Availability of travel information.	11	1	11	1	11	1
3	Safety of Local transport vehicles.	11	1	10	0.91	10	0.91
4	Easy access through different modes of transport.	11	1	10	0.91	10	0.91
5	Quality of roads and signs.	11	1	10	0.91	11	1
6	Availability of local parking.	10	0.91	10	0.91	10	0.91
7	Network of local transport services.	10	0.91	10	0.91	10	0.91
8	Level of local transportation prices.	10	0.91	9	0.82	9	0.82
	***S-CVI/average	0.97		0.91		0.92	
*NA= No. of Agreements, **I-CVI= Item-level Content Validity Index,***S-CVI= Scale-level Content Validity Index							

Source: Researcher's computations

Table 4.6: Content validity results for service quality attributes of common to all transport services.

		Relevance		Clarity		Simplicity	
	Service attributes	*NA	**I-CVI	NA	I-CVI	NA	I-CVI
1	The cost effectiveness, affordability and value of my trip within Goa.	10	0.91	9	0.82	9	0.82
2	Ease of paying fare.	10	0.91	10	0.91	10	0.91
3	Consistency of fare structure.	9	0.82	8	0.73	8	0.73
4	Friendly, courteous and quick service from personnel.	10	0.91	10	0.91	10	0.91
5	Companies provide safe and well-maintained vehicles.	11	1	11	1	11	1
6	Cleanliness of vehicles.	11	1	11	1	11	1
7	Safety from crime on vehicle.	10	0.91	10	0.91	10	0.91
	***S-CVI/average	0.92		0.90		0.90	
*NA= No. of Agreements, **I-CVI= Item-level Content Validity Index,***S-CVI= Scale-level Content Validity Index							

Source: Researcher's computations

Table 4.7: Content validity results for service quality attributes of transport services (Bus, Cab, Motorcycle taxi (Pilot) and Autorickshaw)

	Attributes	Relevance		Clarity		Simplicity	
	(Bus, Cab, Motorcycle taxi (Pilot) and Autorickshaw	*NA	**I-CVI	NA	I-CVI	NA	I-CVI
1	The availability of schedule /information at stops.	10	0.91	10	0.91	10	0.91
2	Transit personnel know the system and can provide travel information.	10	0.91	9	0.82	9	0.82
3	Personnel are polite and friendly while communicating with passengers.	11	1	11	1	11	1
4	Drivers appreciate the safety of passengers when they get on / off the vehicles.	11	1	10	0.91	10	0.91
5	Drivers drive smoothly and their road craft is fine.	11	1	10	0.91	10	0.91
6	The smoothness of ride and stops.	11	1	9	0.82	10	0.91
7	Safe and competent drivers.	11	1	11	1	11	1
8	The vehicles travel at safe speed.	11	1	11	1	11	1
	***S-CVI/average	0.98		0.92		0.93	

*NA= No. of Agreements, **I-CVI= Item-level Content Validity Index,***S-CVI= Scale-level Content Validity Index

Source: Researcher's computations

Table 4.8: Content validity results for service quality attributes of transport services (Local transport Buses and Sightseeing buses)

		Relevance		Clarity		Simplicity	
	Attributes (Local transport Buses and sightseeing buses)	*NA	**I-CVI	NA	I-CVI	NA	I-CVI
1	Frequent services, so that wait times are short.	11	1	11	1	11	1
2	Frequency of service on Saturday and Sundays	11	1	11	1	11	1
3	Reliable – comes on time and reaches on time	11	1	11	1	11	1
4	The hours of services during weekdays.	10	0.91	9	0.82	9	0.82
5	Complaint handling system.	11	1	11	1	11	1
6	Dependability in handling your service related problems	11	1	10	0.91	10	0.91
7	Clear and timely announcements at stops.	11	1	11	1	11	1
8	Explanation and announcements of delays.	11	1	11	1	11	1
9	Route and Direction information visible on vehicles.	11	1	11	1	11	1
10	The cost of making transfers.	10	0.91	8	0.73	9	0.82
11	Noise on the vehicles is not too loud.	11	1	10	0.91	11	1
12	No Graffiti (Scribbling) on vehicles.	9	0.82	10	0.91	10	0.91
13	Availability of seats.	10	0.91	11	1	11	1
14	Temperature and humidity on vehicles (Not hot/cold).	10	0.91	8	0.73	9	0.82
15	Vehicles are not overcrowded.	11	1	11	1	11	1
16	Comfort while waiting at stops.	11	1	11	1	11	1
17	Freedom from the nuisance behaviour of other riders on the vehicle.	11	1	11	1	11	1
18	The availability of shelter and benches at stops.	11	1	11	1	11	1
19	Having stops near destination.	11	1	11	1	11	1
20	The physical conditions of stops.	11	1	11	1	11	1
21	Cleanliness of stops.	11	1	11	1	11	1

22	Safety from crime at stops.	11	1	11	1	11	1
23	The availability of schedule / maps at stops.	11	1	11	1	11	1
24	Absence of graffiti (Scribbling) at stops.	10	0.91	11	1	11	1
	***S-CVI/average	0.97		0.96		0.97	
*NA= No. of Agreements, **I-CVI= Item-level Content Validity Index,***S-CVI= Scale-level Content Validity Index							

Source: Researcher's computations

Based on the results of the content analysis, only those items which demonstrated I-CVI's of 1.00 or 0.83, (which is more than Lynn's (1986), standard of 0.78) are considered as content valid for each of the dimensions of content validity measured, i.e. Relevance, clarity, and simplicity. The S-CVI was improved by deleting an item in the final questionnaire which was scored less than 3 or 4 by the experts, to meet the criteria set by Lynn (1986) and some items were split into more than one for more clarity and simplicity.

The following changes were made

1) Flexibility was deleted as its I-CVI was less than standard.
2) Quality of roads and signs was split into three, as quality of roads, quality of signs and quality of streetlights.
3) The cost-effectiveness, affordability and value of my trip within Goa were split as affordability of my trip, fair price for my trip, value for the cost of my trip.
4) Friendly, courteous and quick service from personnel was divided into personnel are friendly, quick services from personnel and courteous employees.
5) Companies provide safe and well-maintained vehicles was divided into vehicles are safe and vehicles are well maintained.
6) Transit personnel know the system and can provide travel information was rephrased as staff can provide travel information.
7) Drivers appreciate the safety of passengers when they get on / off the vehicles were rephrased as drivers take care of the passengers when they get in or off the vehicles.

8) Drivers drive smoothly, and their road craft is fine was deleted.
9) A statement safe and competent driver was rephrased as drivers are competent, since safety is covered by item 6.
10) Dependability in handling your service-related problems was deleted as it was overlapping with another item.

4.7.4 Pre-Testing the Scale

Pre-testing is a very important part of questionnaire construction, which involves testing of the research instrument in conditions as similar as possible to the research, not in order to report results but rather to check for glitches in wording of questions, lack of clarity of instructions etc. in fact, anything that could impede the instrument's ability to collect data in an economical and systematic fashion (Synodinos, 2003). Pretesting is a method of checking that questions work as intended and are understood by those individuals who are likely to respond to them (Hilton, 2017). According to Aziz and Kamaludin (2015), pretesting is a very important step in survey research to ensure that all kinds of errors associated with survey research are reduced. It helps to improve the quality of data significantly. Pretesting is done on a small sample of respondents from the target population.

The instrument was presented to ten respondents for pre-testing prior to the actual data collection. The researcher noted the question where the respondents sought clarification and found lengthy to answer, the question was reframed for simplicity and tested on another 10 respondents. At this stage, the pre-tests showed that the respondents were able to understand and answer the questions posed to them in the questionnaire as expected.

4.7.5 Final Measurement Scales: After conducting content validity and pre-testing of the instrument, the final instrument was developed and administered to tourists visiting Goa.

4.8 SAMPLE SIZE AND ADMINISTRATION

Hair et al. (2014) stated that PLS-SEM can be utilised with much smaller sample sizes even when models are highly complex. As a popular rule of thumb, for robust PLS-

SEM estimation it is recommended that PLS users follow a similar "rule of 10" guideline as SEM users: at least 10 cases per measured variable (indicators) of any construct in the outer model and the number of paths relationships directed at a particular construct in the inner model (Barclay et al., 1995; Hair et al., 2012, 2014, Garson, 2016). The larger the sample, the more reliable the PLS estimates (Garson, 2016).

Based on the above rule, the required sample size for the model estimation of the study was 240 respondents. The researcher targeted a total sample of 600 respondents using different modes of transport. The respondents were tourists visiting Goa and using local transportation services for visiting places of tourist interest. The survey lasted for 9 months, starting from mid-April 2018 to December 2018 and involved interviewing tourists at different places covering tourist sites at Palolem, Agonda, Colva, Panjim, Old Goa, Margao, Candolim, Calangute, Baga, Vagator, Anjuna, Fort Aguada, Big Foot, Molem, etc. Data was also collected from tourists using the Hop-on–Hop-Off bus services by travelling along with them.

The researcher approached 1000 tourists for the study, of these 100 tourists informed that they used their relatives vehicles and were therefore not administered the questionnaire and 230 tourists declined to participate in the study, largely on account of the language barrier. The questionnaire was administered to a total of 670 respondents, of which 606 were completely questionnaires, and 64 questionnaires were incomplete. The respondents returned the completed questionnaires within 10-15 minutes. Thus a total of 606 completed questionnaires collected from the tourists visiting Goa were used for further analysis.

4.9 DATA SCREENING

The very first step after collecting data is to purify the data so that they provide meaningful and reliable results when analysed (Hair et al., 2009). Data screening is the process of ensuring that data is clean and ready for conducting further statistical analyses. Data must be screened in order to ensure the data is useable, reliable, and valid for testing causal theory (Gaskin, 2016).

The Data entry of the study was therefore checked for missing data, wrong entry of values, Kurtosis and Skewness, unengaged responses and common method bias.

1. Missing Data: There was no missing data as confirmed by the table of case processing summary.
2. Wrong entry: The descriptive statistics indicated wrong values for four attributes of importance and two attributes of satisfaction which were identified as wrong entry and rectified.
3. Data Normality Test: The data was evaluated to determine the normality of distribution by estimating the value of skewness and kurtosis for the distribution of scores of latent variables. The Skewness and Kurtosis for all the items were within the acceptable values. PLS technique does not consider normality; and thus, to obtain standard errors for testing research hypotheses, it uses bootstrapping (Hair et al., 2011).
4. Outlier Identifications: Outliers are different observations from the main data falling outside the control line (Hair et al., 2009).Outliers do not exist in Likert-scales: answering at the extreme (1 or 5) is not representative outlier behaviour (Gaskin, 2016). Another type of outlier is an unengaged respondent. No outliers were found in this data.
5. Common method bias: Common method bias is a phenomenon that is caused by the measurement method used in an SEM study, and not by the network of causes and effects among latent variables in the model being studied (Kock, 2015). If all VIFs resulting from a co-linearity statistic are equal to or lower than 3.3, the model can be considered free of common method bias. For checking such bias, this study uses the method introduced by Kock (2015) viz. testing the common method bias through VIF value. It was found that the internal VIF value for all the factors in this model is less than 3.3.

4.10 DATA ANALYSIS

After completing the data screening process, data analysis was carried out in two steps:

- The data collected is analysed using SPSS (Version 22) for generating demographic and descriptive statistics.

- The objective-wise analysis was carried out using the following techniques:

1) To determine whether tourists' perception of transport accessibility, perceived performance and perceived value have any influence upon their satisfaction with road transport services at the destination and

2) To determine the level of tourist satisfaction with various modes of transport at the destination.

- **Analysis**: Structural Equation Modeling using Partial Least Squares (PLS-SEM) is discussed in chapter 5.

3) To determine whether the mode of transport influences the relationship between transport accessibility, perceived performance, perceived value and tourist satisfaction with road transport services at the destination.

- **Analysis**: Moderation analysis using Process Macros for SPSS is discussed in chapter 6

4) To examine tourists' perception of services delivered by transport service providers in terms of importance attached to the service attributes and satisfaction derived.

- **Analysis**: Importance-Satisfaction Analysis is discussed in chapter 7

4.11 SUMMARY:

The inputs gained from the preliminary survey and the review of the literature was used in the formulation of hypotheses. The hypotheses gave further direction for the preparation of the questionnaire and the analysis and interpretation of the quantitative study. The initial items for the measurement instrument were constructed based on the findings of the preliminary survey and the review of the literature. After finalising the items for the questionnaire, Content Validity was initially conducted for all the items of the developed measurement scale. Based on their ratings, the Item-level Content Validity Index (I-CVI) was calculated for each item, and the Scale-level Content Validity index (S-CVI) was calculated for each scale. Items not satisfying the prescribed criteria were removed from the scale or modified as per comments received. This was followed by pre-testing of the measurement instrument and the questionnaire was finalized. A total of 606 completed questionnaires collected from tourists visiting the State of Goa, were then used for further analysis.

CHAPTER 5

Analysis and Results- Structural Equation Modeling Analysis

CHAPTER 5

ANALYSIS AND RESULTS- STRUCTURAL EQUATION MODELING ANALYSIS

This chapter presents the analysis and results of Objectives 1and 2.

Objective 1: To determine whether tourists' perception of transport accessibility, perceived performance and perceived value have any influence upon their satisfaction with road transport services at the destination.

Objective 2: To determine the level of tourist satisfaction with various modes of transport at the destination.

5.1 INTRODUCTION

This chapter presents the empirical findings of the objective 1 to determine whether tourists' perception of transport accessibility, perceived performance and perceived value have any influence upon their satisfaction with road transport services at the destination and objective 2 to determine the level of tourist satisfaction with various modes of transport at the destination and is analyzed using SPSS version 21 and Smart-PLS 3. The validity and reliability of the measurement model were assessed. After assessing the quality of the measurement model, then the structural model is assessed. Also, the results of the mediating role of perceived performance and perceived value are presented. The Tourist Satisfaction Index for transportation services is calculated based on the structural equation model generated factor loadings for the satisfaction construct.

5.2 STRUCTURAL EQUATION MODELING USING PARTIAL LEAST SQUARES (PLS-SEM)

In PLS-SEM, data analysis is carried out by following a multi-stage process which involves the specification of the inner and outer models, data collection and examination, the actual model estimation, and the evaluation of results (Hair et al., 2014). In this process, the three most salient steps are a model specification, the assessment of the measurement model and the assessment of the structural model.

Hair et al. (2014) provided an in-depth introduction into each of the stages of PLS-SEM to assess both the measurement and the structural model, as discussed below and followed for the analysis of this study.

5.2.1 Model specification: In this stage, the researcher is required to set the measurement or outer model and the structural or inner model. The inner/structural model displays the relationships between the constructs being evaluated. The measurement models are used to evaluate the relationships between the indicator variables and their corresponding construct (Hair et al., 2014).

After designing the inner model, it is necessary to specify the outer model. For evaluation of the outer model, it is necessary to distinguish whether the study is using reflective or formative constructs, as the evaluation process differs for both and are based on different concepts (Ringle et al., 2011; Hair et al., 2014; Garson, 2016). Since this study uses only reflective constructs, the assessment measures of reflective indicators are discussed below.

5.2.2 Reflective indicators: Reflective indicators are linked to a construct through loadings, which are the bivariate correlations between the indicator and the construct (Hair et al., 2014). A path model is reflective if, in the path diagram, causal arrows go from the latent variable (factor) to the measured indicator variables. In reflective models, indicators are a representative set of items, all of which reflect the latent variable they are measuring (Garson, 2016).

The steps and the acceptable fit values for the assessment of reflective models are discussed below:

5.2.3 Assessment of reflective outer models involves determining indicator reliability (squared standardized outer loadings), internal consistency reliability (composite reliability), convergent validity (average variance extracted, AVE), and discriminant validity (Fornell-Larcker criterion, cross-loadings, HTMT ratio) (Henseler et al., 2009; Hair et al., 2011).When assessing reflective outer models, researchers should verify both reliability and validity (Hair et al., 2014).

5.2.3.a Indicator reliability: The first step in reflective measurement model assessment involves examining the indicator loadings, which represent the paths from a factor to its representative indicator variables. Outer loadings represent the absolute contribution of the indicator to the definition of its latent variable. In general, larger the loading, stronger and more reliable is the measurement model (Garson, 2016). By convention, for a well-fitting reflective model, path loadings should be above 0.70 (Henseler, Ringle & Sarstedt, 2012). Hair et al. (2013) suggested that items having a loading >0.70 should be retained, items having an outer loading value >0.40 and <0.70 should be omitted and that its impact on the AVE and CR of the variable should be analysed. The given item should be omitted if the AVE and CR of the variable are above the threshold value; otherwise, it should be retained.

5.2.3.b Internal Consistency Reliability: Internal consistency reliability is used to assess the consistency of results across items of the same variables, which determines whether the items measuring a variable are similar in their scores (Hair et al., 2014). Criteria such as Cronbach's alpha and composite reliability are commonly applied to assess internal consistency reliability of the reflective constructs

- **Composite Reliability**: Jöreskog's (1971) Composite reliability is a preferred measure of assessing internal consistency reliability and an alternative to Cronbach's alpha as a test of convergent validity in a reflective model (Garson 2016). Higher values generally indicate higher levels of reliability. Reliability values between 0.60 and 0.70 are considered "acceptable in exploratory research," values 0.70 and 0.90 range from "satisfactory to good" (Hair et al., 2011)
- **Cronbach's alpha** is another measure of internal consistency reliability that assumes similar thresholds but produces lower values than composite reliability. By convention, the same cut-offs apply: greater or equal to .80 for a good scale, .70 for an acceptable scale, and .60 for a scale for exploratory purposes (Garson, 2016).

By using composite reliability, PLS-SEM is able to accommodate different indicator reliabilities (i.e. differences in the indicator loadings), while also avoiding the underestimation associated with Cronbach's alpha (Hair et al., 2014).

5.2.3.c Convergent validity (Average Variance Extracted, AVE): The third step is to assess the convergent validity of each construct measure using Average Variance Extracted (AVE). Convergent validity is the extent to which the construct converges in order to explain the variance of its items. The minimum acceptable AVE is 0.50. An AVE of 0.50 or more indicates that the construct explains 50 per cent or more of the variance of the items that make up the construct (Hair et al., 2012, 2014; Garson, 2016).

5.2.3.d Discriminant validity represents the extent to which the construct is empirically distinct from other constructs or, in other words, the construct measures what it is intended to measure.

- **The Fornell–Larcker discriminant validity criterion**: One method for assessing the existence of discriminant validity is the Fornell and Larcker (1981) criterion. This method states that the construct shares more variance with its indicators than with any other construct. In Smart-PLS output, in the Fornell-Larcker criterion table, the square root of AVE appears in the diagonal cells and correlations appear below it. Therefore, in absolute value terms, if the top number (which is the square root of AVE) in any factor column is higher than the numbers (correlations) below it, there is discriminant validity (Garson, 2016)

- **Heterotrait-Monotrait Ratio (HTMT):** The HTMT is defined as the mean value of the item correlations across constructs (i.e. the heterotrait-heteromethod correlations) relative to the (geometric) mean of the average correlations for the items measuring the same construct (i.e. the monotrait-heteromethod correlations). Discriminant validity problems are present when HTMT values are high (Hair et al., 2014). Henseler, Ringle, & Sarstedt (2015) suggest that if the HTMT value is below 0.90, discriminant validity has been established between a given pair of reflective constructs.

5.2.3.e The Standardized Root Mean Square Residual (SRMR): SRMR is a measure of approximate fit of the researcher's model. It measures the difference between the observed correlation matrix and the model-implied correlation matrix. By convention, a model has a good fit when SRMR is less than 0.08 (Hu & Bentler, 1998), some use the

more lenient cut-off of less than 0.10 (Henseler, Dijkstra, et al. as cited in Garson, 2016).

5.2.3.f Multicollinearity in reflective models

A common rule of thumb is that problematic multicollinearity may exist when the Variance Inflation Factor (VIF) coefficient is higher than 4.0 (some use the more lenient cut-off of 5.0) (Garson, 2016).

5.2.4 Assessment for structural models:

After establishing the reliability and validity of the constructs in the measurement model, it is necessary to assess the structural model (also referred to as the inner model) to test the relationship between endogenous and exogenous variables. In PLS-SEM, structural model assessment includes path coefficients to evaluate the significance and relevance of structural model relationships, R^2 value to evaluate the model's predictive accuracy, Q^2 to evaluate the model's predictive relevance and f^2 to evaluate the substantial impact of the exogenous variable on an endogenous variable (Hair et al., 2014).The structural fit is examined after measurement fit is shown to be acceptable.

5.2.4.a Structural path coefficients

After running a PLS model, estimates are provided for the path coefficients, which represent the hypothesized relationships linking the constructs. Path coefficient values are standardized on a range from +1 to -1, with coefficients closer to +1 representing strong positive relationship and coefficients closer to -1 indicating strong negative relationships (Hair et al. 2014). These loadings should be significant (using bootstrapping).

5.2.4.b R-square

The coefficient of determination (R^2): R^2 is a measure of the model's predictive accuracy. This effect ranges from 0 to 1 with 1 representing complete predictive accuracy. R^2 values of 0.75, 0.50, or 0.25 for endogenous latent variables in the structural model can be described as substantial, moderate, or weak, respectively (Hair et al., 2011, 2014).

5.2.4.c Adjusted R^2

Adding predictors to a regression model tends to increase R^2, even if the added predictors have an only trivial correlation with the endogenous variable (Garson, 2016).

5.2.4.d Cross-validated redundancy (Q^2)

The Q^2 is a means for assessing the inner model's predictive relevance. Specifically, a Q^2 value larger than zero for a particular endogenous construct indicates the path model's predictive relevance for this particular construct (Hair et al., 2014).

5.2.4.e Effect size (f^2)

The effect size for each path model can be determined by calculating Cohen's f^2 .The f-square effect size measure is another name for the R-square change effect. The f-square equation expresses how large a proportion of unexplained variance is accounted for by R^2 change (Hair et al., 2014). Following Cohen (as cited in Garson, 2016) 0.02 represents a "small" f^2 effect size, 0.15 represents a "medium" effect, and 0.35 represents a "high" effect size.

Bootstrapping uses re-sampling methods to compute the significance of PLS coefficients.

The data collected from 606 respondents has been analyzed by using SPSS (Version 22) for generating demographic and descriptive statistics and SEM using Smart-PLS 3 (Ringle et al., 2015) for assessment of the measurement and structural models. For using Smart PLS 3, the data was transformed into a CSV file to generate raw input for the application. The data was analyzed in line with the proposed model in order to test the relationship between the constructs and to develop the model.

5.3 DATA ANALYSIS FOR DESCRIPTIVE STATISTICS

The data collected is analysed using SPSS (Version 22) for generating demographic and descriptive statistics.

5.3.a Demographic characteristics of the respondents: The demographic characteristics of the respondents with respect to their nationalities, age, gender, monthly income and educational qualifications are presented in Table 5.1

Table 5.1: Demographic profile of respondents

Sr.No	Demographic		Frequency N=606	Percentage (%)
1	Nationality	Foreign	282	46.5
		Indian	324	53.5
2	Gender	Female	257	42.4
		Male	349	57.6
3	Age	<25	70	11.6
		26-35	243	40.1
		36-45	172	28.4
		46-55	97	16.0
		56-65	18	3.0
		>65	6	1.0
4	The highest level of formal education	Secondary school	4	0.7
		Higher secondary school	42	6.9
		Graduate	349	57.6
		Postgraduate	211	34.8

Source: Researcher's computations

As shown in Table 5.1, 53.5 per cent of the respondents were Indian and (46.5%) were foreigners, 57.6% were male, and 43.4% were female. The analysis also shows that the majority of the tourists (40.1%) were in the age group of 26-35 years followed by 28.4% between 36 to 45 years. Most of the tourists were well educated.

5.3.b Trip characteristics i.e. Information regarding their trip to Goa

Table 5.2: Trip characteristics of the respondents

Sr. No	Particulars		Frequency N=606	Percentage (%)
1	First trip to Goa	No	276	45.5
		Yes	330	54.5
2	Travelling partners	By yourself	157	25.9
		Family or Friends	388	64.0
		Colleagues	61	10.1
3	Purpose of the trip	Business	39	6.4
		Holiday	567	93.6
4	Length of stay in number of days	<10	388	64.0
		10-30	181	29.9
		>30	37	6.1
5	Type of mode used	Public Bus transport (KTCL)	33	5.4
		Private bus transport	44	7.3
		Sightseeing vehicles arranged by hotels, tour operators	48	7.9
		Government sightseeing vehicles	100	16.5
		Taxi/ Cab	123	20.3
		Motor cycle taxi (Pilot)	31	5.1
		Rent a bike/ car	165	27.2
		Auto rickshaw	62	10.2
6	Booking of transport mode	Online services	100	16.5
		Self	433	71.5
		Travel agents or packaged tours	73	12.0

Source: Researcher's Computations

As shown in the Table 5.2

1) 54.5 per cent tourists were visiting Goa for the first time, whereas 45.5% had previously visited Goa.

2) Most of them travelled with their family and friends (64%), or alone (25.9%).
3) The majority of tourists visited Goa on holiday (93.6%)
4) A stay of less than 10 days is most common (64%), followed by 10-30 days (29.9%).
5) During their visit 27.2% tourists used rent a bike or car, 20.3% used taxi or cab, 16.5% used Government sightseeing vehicles, 10.2% used auto rickshaw and remaining used the other modes of transport.
6) 71.5 per cent booked the mode on their own, 16.5% through online services and 12% used the services of travel agents and packaged tours.

5.4 ANALYSIS FOR STRUCTURAL EQUATION MODELLING USING PARTIAL LEAST SQUARES (PLS)

5.4.1 Measurement Model

The research model for this study is tested using Partial Least Squares (PLS). Smart PLS 3 (Ringle et al., 2015) is used to assess the measurement and structural model. The measurement model was developed based on the proposed model for which each latent construct included in the model and the measured indicator variables assigned to the latent construct are listed below.

A description of the indicators of each construct included in the model is given in the following Table 5.3

Table 5.3: Description of the indicators of each construct

Construct	Indicator	Description of indicators
Transport Accessibility	Accessibility1	The convenience of local transportation services.
	Accessibility2	Availability of travel information.
	Accessibility3	Safety of local transport vehicles.
	Accessibility4	Easy access through different modes of transport.
	Accessibility5	Quality of roads.
	Accessibility6	Quality of signs.
	Accessibility7	Quality of streetlights.
	Accessibility8	Availability of local parking.
	Accessibility9	A network of local transport services.
	Accessibility10	Level of local transportation prices.
Perceived performance	Perceived performance1	Overall evaluation of quality.
	Perceived performance2	Evaluation of customisation experience (services received from the service provider).
	Perceived performance3	Evaluation of reliability experience (how often things actually went wrong).
Perceived value	Perceived value1	Rating of price given quality.
	Perceived value2	Rating of quality given price.
Tourist satisfaction	Overall satisfaction1	How satisfied are you with the services provided?
	Overall satisfaction2	Expectancy Disconfirmation (to what extent has the transport system fallen short of your expectation or exceeded your expectations).
	Overall satisfaction3	Performance v/s Ideal (comparison with that ideal transport system).

Source: Researcher's questionnaire

5.4.1.a Descriptive Statistics of Instrument

Using the statistical software SPSS version 22.0, the mean, standard deviation, minimum value and maximum value of each indicator were examined.

Table 5.4: Descriptive Statistics for All Indicators

Construct	Indicator	N	Min	Max	Mean	Std. Dev
Transport Accessibility	Accessibility1	606	0	10	7.29	2.420
	Accessibility2	606	0	10	6.49	2.269
	Accessibility3	606	0	10	6.74	2.342
	Accessibility4	606	0	10	6.90	2.003
	Accessibility5	606	0	10	6.92	2.398
	Accessibility6	606	0	10	6.68	2.345
	Accessibility7	606	0	10	6.31	2.221
	Accessibility8	606	0	10	6.57	2.119
	Accessibility9	606	0	10	6.74	1.976
	Accessibility10	606	0	10	7.25	2.232
Perceived performance	Perceived performance1	606	0	10	7.44	1.992
	Perceived performance2	606	0	10	7.37	1.860
	Perceived performance3	606	1	10	7.35	2.049
Perceived value	Perceived value1	606	0	10	7.73	1.935
	Perceived value2	606	0	10	7.75	1.862
Tourist satisfaction	Overall satisfaction1	606	0	10	7.85	1.625
	Overall satisfaction2	606	0	10	7.88	1.887
	Overall satisfaction3	606	0	10	6.79	1.966

Source: Researcher's Computations

From the descriptive statistics for all of the variables it is seen that N=606 shows there is no missing number of subjects, the Minimum (lowest) and Maximum (highest) scores

are within the expected range of 0 to 10 for all the variables and all means seem reasonable for each variable.

5.4.1.b Assessment of measurement model:

For assessment of reflective outer models, both the reliability and validity are verified based on indicator reliability (outer loadings), internal consistency reliability (composite reliability), convergent validity (average variance extracted, AVE), and discriminant validity (Fornell-Larcker criterion, cross-loadings, HTMT ratio), (Henseler et al., 2009, Hair et al. 2011, 2014).

5.4.1.b.1 Indicator Reliability: Indicator reliability of the measurement model is measured by examining the indicator loadings, which are representing the paths from a factor to its representative indicator variables. Indicator loadings should be higher than 0.70 (Henseler et al., 2012, Hair et al., 2014). If the AVE and CR of the variable reach above the threshold, the item having loading <0.70 should be retained otherwise omitted (Hair et al., 2013).

Table 5.5: Reliability Statistics

Construct	Indicator	Loadings	T-Statistics
Transport Accessibility	Accessibility1	0.886	21.562
	Accessibility2	0.669	17.083
	Accessibility3	0.667	13.071
	Accessibility4	0.853	23.062
	Accessibility5	0.570	11.194
	Accessibility6	0.710	21.218
	Accessibility7	0.603	17.065
	Accessibility8	0.578	16.532
	Accessibility9	0.711	17.051
	Accessibility10	0.795	17.936
Perceived performance	Perceived performance1	0.797	26.815
	Perceived performance2	0.736	24.615
	Perceived performance3	0.773	18.072
Perceived value	Perceived value1	0.844	51.489
	Perceived value2	0.895	43.991
Tourist satisfaction	Overall satisfaction1	0.840	40.920
	Overall satisfaction2	0.804	34.244
	Overall satisfaction3	0.722	26.877

Source: Researcher's Computations

Table 5.5 shows the outer loading for each item and its T-statistic values on their respective constructs. Based on the results, some items for the construct accessibility have loading less than 0.70, but the CR and AVE values are above threshold, hence they are retained, all other indicator loadings are above 0.70. All items are significant at the level of 0.05. Thus the items used for this study have demonstrated satisfactory indicator reliability.

5.4.1. b.2 Internal Consistency Reliability: Cronbach's alpha and composite reliability are commonly applied to assess the internal consistency reliability of the reflective constructs.

Table 5.6: Internal Reliability Statistics

Construct	Composite reliability	Cronbach's Alpha
Transport Accessibility	0.900	0.904
Perceived Performance	0.813	0.813
Perceived Value	0.861	0.861
Tourist satisfaction	0.833	0.829

Source: Researcher's Computations

In PLS-SEM it is recommended to use Composite Reliability as a measure of assessing internal consistency rather than Cronbach's alpha. Composite Reliability should be higher than 0.70. It can be seen in Table 5.6 that Composite Reliability of all the constructs is higher than 0.70, indicating that the items used to represent the constructs have satisfactory internal consistency reliability.

5.4.1.b.3 Convergent Validity (Average Variance Extracted, AVE): An AVE of 0.50 or higher indicates that the construct explains 50 per cent or more of the variance of the items that make up the construct (Hair et al., 2012 ,2014, Garson, 2016).

Table 5.7: Average Variance Extracted Values

Construct	Average Variance Extracted (AVE)
Transport Accessibility	0.507
Perceived Performance	0.592
Perceived Value	0.757
Tourist satisfaction	0.625

Source: Researcher's Computations

Table 5.7 shows that all constructs have AVE ranging from 0.507 to 0.757, which exceeds the recommended threshold value of 0.5 and therefore establishes convergent validity.

5.4.1.b.4 Discriminant validity: Discriminant validity represents the extent to which the construct is empirically distinct from other constructs.

a) The Fornell–Larcker discriminant validity criterion:

One method for assessing the existence of discriminant validity is the Fornell and Larcker (1981) criterion.

Table 5.8: Discriminant Validity (Fornell–Larcker criteria results)

Fornell-Larcker Criterion	Perceived Performance	Perceived Value	Tourist Satisfaction	Transport Accessibility
Perceived Performance	0.769			
Perceived Value	0.750	0.870		
Tourist Satisfaction	0.721	0.833	0.790	
Transport Accessibility	0.762	0.673	0.649	0.712

Source: Researcher's Computations

Based on the results the square root of AVE for all latent variables was higher than the inter-construct correlations, and therefore they confirm discriminant validity.

b) Heterotrait-Monotrait Ratio (HTMT):

Henseler et al. (2015) suggested that if the HTMT value is below 0.85 and 0.90, discriminant validity has been established between a given pair of reflective constructs.

Table 5.9: Discriminant Validity (Heterotrait-Monotrait Ratio Values)

	Perceived Performance	Perceived Value	Tourist Satisfaction
Perceived Performance			
Perceived Value	0.751		
Tourist Satisfaction	0.826	0.835	
Transport Accessibility	0.748	0.661	0.643

Source: Researcher's Computations

From the above Table 5.9, it is found that HTMT 0.85 and 0.90 criteria of discriminant validity between constructs have been satisfied, indicating that discriminant validity has been established for the model.

5.4.1.b.5 Standardized Root Mean Square Residual (SRMR): SRMR is a measure of approximate fit of the researcher's model. A model has a good fit when SRMR is less than 0.08 or a more lenient cut off of less than 0.10. This model's SRMR value is 0.09, which is less than 0.10; thus this model has a good fit.

5.4.1.b.6 Multicollinearity in reflective models: for assessing Multicollinearity in reflective models, variance inflation factor (VIF) coefficient should be less than 3 or within 3 to 5.

Table 5.10: Variance Inflation Factor (VIF) coefficients

Accessibility_1	3.370	Accessibility_10	2.520
Accessibility_2	2.319	Performance_1	2.340
Accessibility_3	2.851	Performance_2	2.181
Accessibility_4	2.616	Performance_3	1.475
Accessibility_5	2.520	Perceived_value_1	2.328
Accessibility_6	5.990	Perceived_value_2	2.328
Accessibility_7	3.349	Overall_Sat_1	2.836
Accessibility_8	2.394	Overall_Sat_2	2.156
Accessibility_9	2.451	Overall_Sat_3	1.704

Source: Researcher's Computations

Problematic co-linearity was found with Accessibility 6, whose VIF coefficient was more than 5, so the item was deleted and the measurement model assessed.

Table 5.11: Summary of Measurement Model Results

Measurement Model Results						
Constructs/Variables	Factor loadings	SD	t-value	CR	α	AVE
Transport Accessibility				**0.900**	**0.904**	**0.507**
Accessibility1	0.886	2.420	21.562			
Accessibility2	0.669	2.269	17.083			
Accessibility3	0.667	2.342	13.071			
Accessibility4	0.853	2.003	23.062			
Accessibility5	0.570	2.398	11.194			
Accessibility6	0.710	2.345	21.218			
Accessibility7	0.603	2.221	17.065			
Accessibility8	0.578	2.119	16.532			
Accessibility9	0.711	1.976	17.051			
Accessibility10	0.795	2.232	17.936			
Perceived performance				**0.813**	**0.813**	**0.592**
Perceived performance1	0.797	1.992	26.815			
Perceived performance2	0.736	1.860	24.615			
Perceived performance3	0.773	2.049	18.072			
Perceived value				**0.861**	**0.861**	**0.757**
Perceived value1	0.844	1.935	51.489			
Perceived value2	0.895	1.862	43.991			
Tourist satisfaction				**0.833**	**0.829**	**0.625**
Overall satisfaction1	0.840	1.625	40.920			
Overall satisfaction2	0.804	1.887	34.244			
Overall satisfaction3	0.722	1.966	26.877			
Note: t-values for n=5000 subsamples; SD=Standard Deviation; CR= Composite Reliability; α= Cronbach's alpha; AVE= Average Variance Extracted						

Source: Researcher's Computations

Following all the steps for testing reliability and validity tests confirmed that the measurement model for this study is valid and fit to be used to test the relationship of the structural model.

5.4.2 Assessment of structural model: The results of the structural model are presented in Figure 5.1

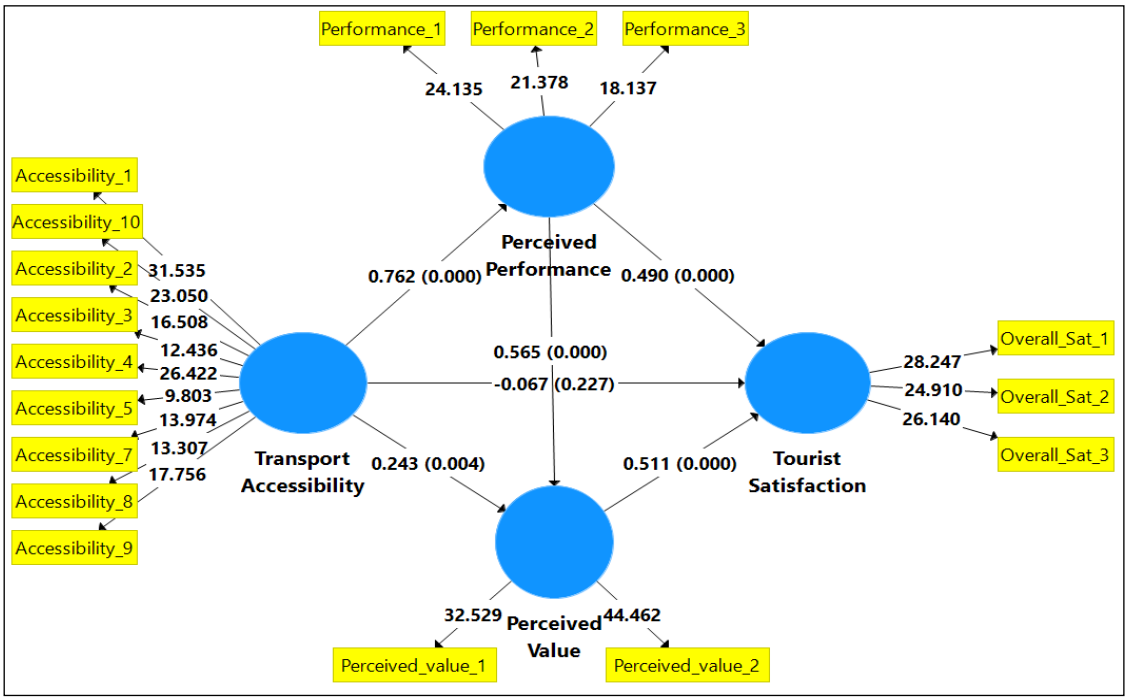


Figure 5.1: Structural model of the study

Source: Researcher's Model

In PLS-SEM, assessment of structural model includes R^2 value to evaluate the model's predictive accuracy, Q^2 to evaluate the model's predictive relevance and f^2 to evaluate the substantial impact of the exogenous variable on an endogenous variable, and path coefficients to evaluate the significance and relevance of structural model relationships (Hair et al., 2013).

5.4.2.a Assessing Coefficient of determination (R^2): R^2 is a measure of the model's predictive accuracy. R^2 values of 0.75, 0.50, or 0.25 for endogenous latent variables in the structural model can be described as substantial, moderate, or weak, respectively.

Table 5.12: R^2 values

Endogenous Latent Variable	R Square	R Square Adjusted
Perceived Value	0.587	0.579
Perceived Performance	0.580	0.586
Tourist satisfaction	0.784	0.783

Source: Researcher's Computations

The R^2 values represent the exogenous variables' combined effects on the endogenous latent variables. In this study, the endogenous variables are perceived value, perceived performance and tourist satisfaction, having R^2 value 0.587, 0.580 and 0.784 respectively which shows that the structural model developed in this study has predictive relevance.

5.4.2.b Assessing Cross-validated redundancy (Q^2): Q^2 is a means for assessing the inner model's predictive relevance. 0.02 represents a "small" effect size, 0.15 represents a "medium" effect, and 0.35 represents a "high" effect size.

Table 5.13: Values of Q^2

Endogenous Latent Variable	Q-square	Effect Size
Perceived Value	0.379	Large
Perceived Performance	0.296	Medium
Tourist satisfaction	0.419	Large

Source: Researcher's Computations

Blindfolding was used to cross-validate the model's predictive relevance for each of the individual endogenous variables. In this study perceived value has a Q^2 value of 0.379, perceived performance has 0.296, and tourist satisfaction has 0.419 respectively showing large and medium effect sizes.

5.4.2.c Assessing f^2 Values (Effect Size): Effect size for each path model can be determined by calculating Cohen's f-square. Cohen (1988) recommended that 0.02 represents a "small" f^2 effect size, 0.15 represents a "medium" effect, and 0.35 represents a "high" effect size. f^2 size effect shows the impact of a specific predictor latent variable on a specific endogenous variable as shown in the Table 5.14

Table 5.14: Effect size

	Perceived Performance	Perceived Value	Tourist Satisfaction
Perceived Performance		0.325	0.352
Perceived Value			0.498
Transport Accessibility	1.381	0.060	0.008

Source: Researcher's Computations

Based on the above results, it is found that the f^2 size effect varies from small to large for all the exogenous variables in explaining the perceived value, perceived performance and tourist satisfaction.

5.4.2.d Structural path coefficients: Path coefficient values are standardized on a range from +1 to -1, with coefficients closer to +1 representing strong positive relationships and coefficients closer to -1 indicating strong negative relationships(Hair et al., 2014).These loadings should be significant (using bootstrapping).

Using the Smart-PLS algorithm output, the relationships between independent and dependent variables were examined. However, in Smart-PLS in order to test the significant level, t-statistics for all paths are generated using the Smart-PLS bootstrapping function. Based on the t-statistics output, the significant level of each relationship is determined. The results are shown in the Table 5.15

Table 5.15: Path Coefficients, Observed T- Statistics, Significance Level

Path	Path coefficient	T-value	P-Value
Transport Accessibility ->Perceived Performance	0.762	26.343	0.000
Transport Accessibility -> Perceived Value	0.243	2.883	0.004
Transport Accessibility -> Tourist satisfaction	-0.067	1.217	0.224
Perceived Performance -> Tourist satisfaction	0.490	5.857	0.000
Perceived Performance -> Perceived Value	0.565	6.325	0.000
Perceived Value -> Tourist satisfaction	0.511	7.447	0.000

Source: Researcher's Computations

The analysis shows that:

1) Transport accessibility has a positive and significant effect on perceived performance (β=0.762, t=26.343, p= 0.000) and perceived value (β=0.243, t=2.883, p= 0.004) but has a negative and not significant effect on satisfaction (β=-0.067, t=1.217, p= 0.224). **Thus it can be said that Hypotheses H1 and H2 are supported but H3 is not supported.**

2) Perceived performance has a positive and significant effect on tourist satisfaction (β=0.490, t=5.857, p= 0.000) and perceived value (β=0.565, t=6.325, p= 0.000); **thus Hypotheses H4 and H5 are supported.**

3) Perceived value has a positive effect on tourist satisfaction (β=0.511, t=7.447, p= 0.000). **As a result, Hypothesis H6 is supported.**

Table 5.16: Summary of Hypotheses H1 to H6

	Hypothesis Statement	Results
H1	Transport Accessibility has a positive effect on perceived performance	Supported
H2	Transport Accessibility has a positive effect on perceived value	Supported
H3	Transport Accessibility has a positive effect on tourist satisfaction	Not Supported
H4	Perceived performance has a positive effect on tourist satisfaction	Supported
H5	Perceived performance has a positive effect on perceived value	Supported
H6	Perceived value has a positive effect on tourist satisfaction	Supported

Source: Researcher's compilation

All the paths have a significant total effect, indirect effect and direct effect except accessibility-satisfaction path. Four out of five paths are significant with a strong coefficient of 0.762, 0.490, 0.565 and 0.511 except one coefficient which is significant but weak at a value of 0.243.

The path between transport accessibility and tourist satisfaction is not significant; this result is due to the mediating effect of perceived performance and perceived value on this relationship which is also shown in the original model and tested further in this study. Mediation represents a situation in which a mediator variable to some extent absorbs the effect of an exogenous on an endogenous construct in the PLS path model (Hair et al., 2014).

5.5 The Mediating Role of Perceived Performance and Perceived Value

The review of the literature, established that perceived performance and perceived value have a positive and direct relationship with tourist satisfaction and this was also proved in the present study. The construct transport accessibility created in this study, measures

the availability of transportation services for tourists at a destination and its relationship with tourist satisfaction. In this study, this direct relationship is hypothesised to be mediated by perceived performance and perceived value. Mediation analysis was carried out to estimate the magnitude of the indirect effect of mediating variable (perceived performance and perceived value) on the relationship between exogenous variable (transport accessibility) and endogenous variable (tourist satisfaction).

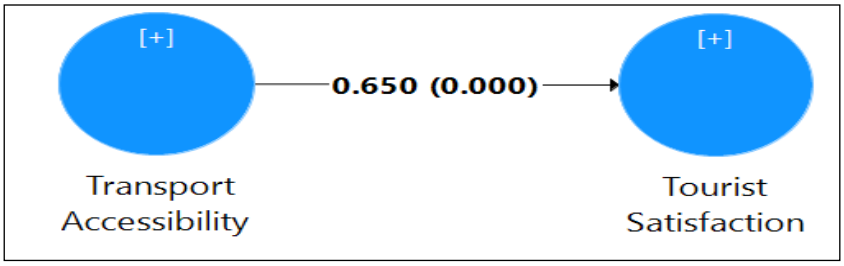
For testing the mediating effect in PLS-SEM, the researcher adopted the bootstrap approach. In this approach, bootstrapping can be used twice: first without the presence of mediation, and secondly, with the presence of mediation. It should be noted that if the direct path is not significant, there is no mediating effect (Hair et al., 2014).

Hair et al. (2014) proposed the following guidelines for mediation analysis.

- The significance of a direct path is to be evaluated first.
- If the direct effect is not significant, there is no mediation.
- If the direct path is significant, then include the mediating variable and use the bootstrapping procedure again.
- If the indirect path is not significant after bootstrapping, there is no mediation;
- If it is significant, then calculate the variance accounted for (VAF).
- VAF value of greater than 80% is full mediation; a value between 20% and 80% is partial mediation and a value less than 20% means there is no mediation.

5.5.1 For testing hypotheses following steps were followed as per the guidelines

5.5.1.a To evaluate the significance of the direct path between transport accessibility and tourist satisfaction.



Note: [+] on the construct shows that indicators are hidden

Figure 5.2: Direct Path Coefficient between Transport Accessibility and Tourist Satisfaction.

Source: Researcher's model

Table 5.17: Significance of the Direct Path between Transport Accessibility and Tourist Satisfaction

Direct path	β	Std. Dev	T value	P Value
Transport Accessibility -> Tourist satisfaction	0.651	0.035	18.438	0.000

Source: Researcher's Computations

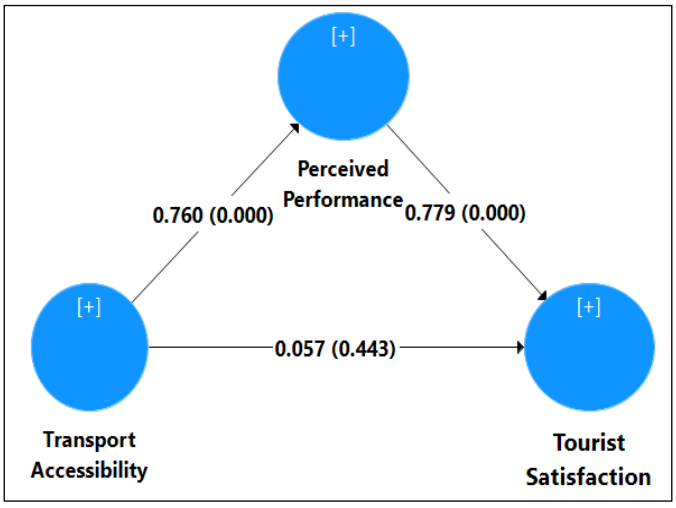
It is seen that transport accessibility has a positive and significant relationship with tourist satisfaction (β=0.651, t=18.438, p= 0.000), it suggests that there could be mediation.

To test hypothesis H7 i.e. the relationship between transport accessibility and tourist satisfaction is mediated by perceived performance and H8 i.e. the relationship between transport accessibility and tourist satisfaction is mediated by perceived value all the steps are followed separately as explained below:

5.5.1.b To evaluate the direct and indirect effect in the presence of a mediator.

Following the next step, it was necessary to check the direct and indirect effect using perceived performance and perceived value as mediators separately.

5.5.1.b.(i) Using perceived performance as a mediator



Note: [+] on the construct shows that indicators are hidden

Figure 5.3: Direct and Indirect Effect Using Perceived Performance as a Mediator

Source: Researcher's model

Table 5.18: Significance of the direct effect using perceived performance as mediator between transport accessibility and tourist satisfaction

Direct effect with mediator	β	T Statistics	P Values
Perceived Performance -> Tourist satisfaction	0.779	10.856	0.000
Transport Accessibility -> Perceived Performance	0.760	26.331	0.000
Transport Accessibility -> Tourist satisfaction	0.060	0.817	0.414

Source: Researcher's Computations

Table 5.19: Significance of the Indirect Effect Using Perceived Performance as Mediator between Transport Accessibility and Tourist Satisfaction

Indirect effects	β	T Statistics	P Values
Transport Accessibility -> Tourist satisfaction	0.590	9.361	0.000

Source: Researcher's Computations

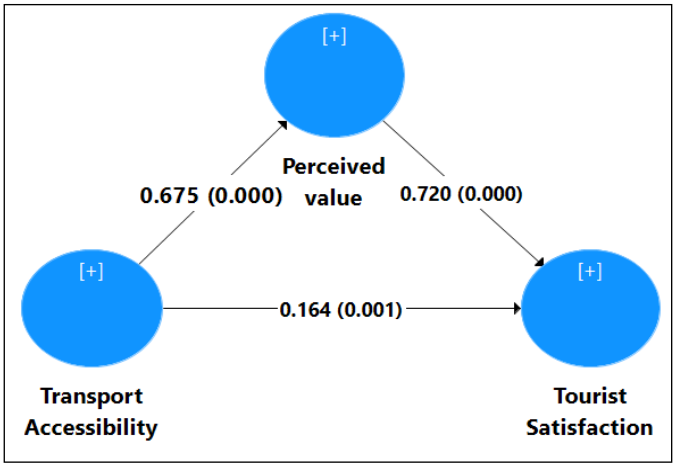
Table 5.20: Direct, Indirect, Total Effect and Variance Accounted For Range

Direct Effect with (P-Value)	Indirect effect with (P-value)	Total Effect with (P-value)	VAF Range	Mediation
0.060 (**0.414**)	0.594 (**0.000**)	0.650 (**0.000**)	**0.907**	**Full**

Source: Researcher's Computations

The analysis shows that perceived performance fully mediates the relationship between transport accessibility and tourist satisfaction **(VAF>0.80). <u>As a result, H7 is supported</u>**.

5.5.1.b(ii) Using perceived value as a mediator



Note: [+] on the construct shows that indicators are hidden

Figure 5.4 Direct and Indirect effect using Perceived Value as a mediator
Source: Researcher's model

Table 5.21: Significance of the Direct Effect Using Perceived Value as Mediator between Transport Accessibility and Tourist Satisfaction

The direct effect with a mediator	β	T Statistics	P Values
Perceived Value -> Tourist satisfaction	0.719	15.046	0.000
Transport Accessibility -> Perceived Performance	0.762	26.262	0.000
Transport Accessibility -> Perceived Value	0.672	22.620	0.000
Transport Accessibility -> Tourist satisfaction	0.166	3.353	0.001

Source: Researcher's Computations

Table 5.22: Significance of the Indirect Effect Using Perceived Performance as Mediator between Transport Accessibility and Tourist Satisfaction

Indirect effect with mediator	β	T Statistics	P Values
Transport Accessibility -> Tourist satisfaction	0.484	11.542	0.000

Source: Researcher's Computations

Table 5.23: Direct, Indirect, Total effect and Variance Accounted For Range

Direct Effect with (P-Value)	Indirect effect with (P-value)	Total Effect with (P-value)	VAF Range	Mediation
0.166 **(0.001)**	0.484 **(0.000)**	0.649 **(0.000)**	0.745	Partial

Source: Researcher's Computations

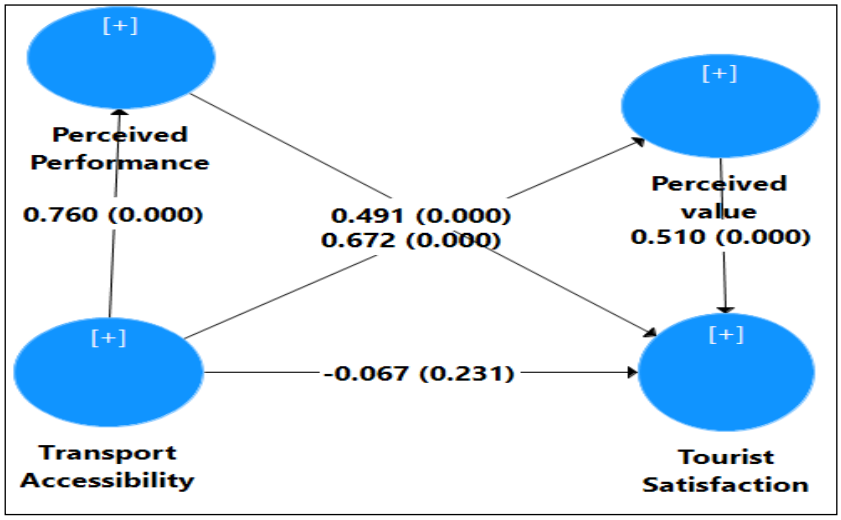
The analysis shows that perceived value partially mediates the relationship between transport accessibility and tourist satisfaction (VAF is between 0.2 and 0.8). **As a result, H8 is supported**.

Table 5.24: Summary of Hypotheses H7 and H8

	Hypothesis Statement	Results
H7	The relationship between transport accessibility and tourist satisfaction is mediated by perceived performance.	Supported
H8	The relationship between transport accessibility and tourist satisfaction is mediated by perceived value.	Supported

Source: Researcher's compilation.

Finally, the combined effect perceived performance and perceived value together on transport accessibility and tourist satisfaction relationship is as shown in the figureure below.



Note: [+] on the construct shows that indicators are hidden

Figure 5.5: Parallel Mediation

Source: Researcher's model

Table 5.25: Significance of the Specific Indirect Effect Using Perceived Performance and Perceived Value as Mediator between Transport Accessibility and Tourist Satisfaction

Specific indirect effect	β	T Statistics	P Values
Accessibility -> perceived value -> satisfaction	0.343	6.674	0.000
Accessibility -> performance -> satisfaction	0.373	5.819	0.000

Source: Researcher's Computations

The analysis already supported perceived performance and perceived value separately as mediator; therefore the combined effect was then tested and was also supported through parallel mediation as shown in the Table 5.25. In PLS-SEM for parallel mediation the specific indirect effect if significant proves the mediation effect.

5.6 TOURIST SATISFACTION INDEX FOR ROAD TRANSPORTATION SERVICES IN GOA

The calculation of the Tourist Satisfaction Index is derived from the structural equation model in which tourist satisfaction is evaluated with respect to its antecedents. This study has adopted Tourist Satisfaction Index (Song et al., 2011) as an evaluation system to identify the relationship between the performance of an individual service provider and satisfaction as perceived by the tourists at the destination. The theoretical and empirical methods used in this study are largely based on the American Customer Satisfaction Index and the Hong Kong Tourist Satisfaction Index.

The transport system and its availability at the destination is an essential determinant of tourist satisfaction. Tourism is a well-established economic activity in Goa, and the State has public as well as private transport operating within the region. Most tourists - international and domestic - use the local transport system during their stay in Goa. The local transport system in Goa comprises the following modes

1) Bus: Buses available for tourists to tour Goa are either from the public bus transport owned by the State Government or private bus operators. Tourists can travel by these buses to all major tourist attractions in Goa; they can choose from the ordinary buses to the air-conditioned deluxe coaches. For the purpose of this study, the bus transport system covers the state-run Kadamba Transport Corporation Limited (KTCL), private bus transport operators, sightseeing vehicles arranged by hotels and travel agents and Government sightseeing buses.
2) Taxi/Cab: Tourists can also opt for a taxi or a cab which can be hired for an entire day or just from one place to another. There are two types of taxis in Goa, one is the black and yellow taxi, and the other is the tourist taxi.
3) Motorcycle Taxi: This kind of taxi is unique to Goa. It consists of a man riding a yellow-and-black two-wheeler, who takes a passenger as the pillion rider. This mode of transport is quite swift and useful in heavy traffic. Goa's motorcycle taxi riders are popularly known as 'pilots.'
4) Auto Rickshaw: An Auto rickshaw is a three-wheeler, with a seat for the driver in front and the back seat wide enough to accommodate 3 people. These auto

rickshaws are available only at the stands located at the specific places such as railway station, bus stand etc.

5) Self-Drive: Hiring cars and Two-Wheelers on a self-drive basis is a popular transport option in Goa and one of the best and most economical ways for tourists to tour the State on their own.

The local transport system covers the above transportation services provided and used by tourists. For the purpose of analysis following modes of transport were covered.

- Public Bus transport (KTCL)
- Private bus transport
- Sightseeing vehicles arranged by hotels, tour operators
- Government sightseeing vehicles
- Taxi/ Cab
- Motorcycle taxi (Pilot)
- Rent a bike/ car
- Auto rickshaw

Table 5.26: Details of modes used by the respondents during their visit to Goa

Modes of transport	Frequency	Per cent
Public Bus transport (KTCL)	33	5.4
Private bus transport	44	7.3
Sightseeing vehicles arranged by hotels, tour operators	48	7.9
Government sightseeing vehicles	100	16.5
Taxi/ Cab	123	20.3
Motor cycle taxi (Pilot)	31	5.1
Rent a bike/ car	165	27.2
Auto rickshaw	62	10.2
Total	606	100.0

Source: Researcher's Computations

5.6.1. Calculation of Mode-wise Tourist Satisfaction Index

The Tourist Satisfaction Index at the mode level is first calculated using the model-implied factor loadings ωη31, ωη32 and ωη33, representing the weights of the three tourist satisfaction indicators, including overall satisfaction (y31), comparison with expectations (y32) and comparison with ideal (y33), where y_{31}, y_{32}, y_{33} are the sample

means of the three satisfaction indicators, respectively (Song, van der Veen, Li, & Chen, 2012).

The Tourist Satisfaction Index of a particular mode of transport equals the weighted average of the means of its three tourist satisfaction indicators multiplied by a scaling constant of 10. Thus, each Tourist Satisfaction Index is scaled on a comparable range of 0 to 100. The higher the tourists' average score on the satisfaction indicators, the higher the sector-level Tourist Satisfaction Index.

The formula for calculating the mode-level TSIs is expressed as follows

$$\text{Modal TSI} = \frac{\omega\eta 31 y31 + \omega\eta 32 y32 + \omega\eta 33 y33}{\omega\eta 31 + \omega\eta 32 + \omega\eta 33} \times 10$$

1) Mode 1: Kadamba Transport Corporation (KTCL)

$$= \frac{0.88 \times 7.97 + 0.715 \times 8.06 + 0.77 \times 6.82}{0.88 + 0.715 + 0.77} \times 10 = 76.23$$

2) Mode 2: Private bus

$$= \frac{0.983 \times 8.61 + 0.996 \times 7.82 + 0.910 \times 7.73}{0.983 + 0.996 + 0.910} \times 10 = 80.60$$

3) Mode 3: Sightseeing vehicles arranged by hotels, tour operators

$$= \frac{0.867 \times 7.25 + 0.926 \times 7.08 + 0.817 \times 7.02}{0.867 + 0.926 + 0.817} \times 10 = 71.18$$

4) Mode 4: Government sightseeing buses

$$= \frac{0.926 \times 8 + 0.686 \times 7.82 + 0.963 \times 6.95}{0.926 + 0.686 + 0.963} \times 10 = 75.59$$

5) Mode 5: Taxi / Cab

$$= \frac{0.785 \times 7.76 + 0.847 \times 7.77 + 0.669 \times 6.63}{0.785 + 0.847 + 0.963} \times 10 = 74.35$$

6) Mode 6: Motor cycle Pilot

$$= \frac{0.603 \times 8.06 + 0.407 \times 8.84 + 0.901 \times 6.45}{0.603 + 0.407 + 0.901} \times 10 = 74.67$$

7) Mode 7: Rent a bike

$$= \frac{0.741 \times 7.78 + 0.702 \times 7.93 + 0.609 \times 6.70}{0.741 + 0.702 + 0.609} \times 10 = 75.10$$

8) Mode 8: Auto-rickshaw

$$= \frac{0.781 \times 7.79 + 0.992 \times 8.11 + 0.504 \times 6.37}{0.781 + 0.992 + 0.504} \times 10 = 76.15$$

The calculated Tourist Satisfaction Index suggest that, of the eight modes considered, tourists are most satisfied with the Private bus operators (80.60), followed by the Public transport (KTCL) (76.25), Auto rickshaw (76.15) and least satisfied with vehicles arranged by hotels and tour operator (71.18) on a scale ranging from 0 to 100.

5.7 FINDINGS OF THE ANALYSIS

- The results show that transport accessibility, perceived performance and perceived value are attributes of road transport services that influence tourist satisfaction with these services at the destination. Transport accessibility is a construct that has been developed for this study and has emerged as a significant attribute of road transport services. Through the operational definition of transport accessibility for this study it means and covers, "Transportation element of accessibility taking into account the ease of travel between attractions at the destination, determined by the quality of services provided by the transportation system which are private and public transport aspects of overall tourism including transportation infrastructure (roads, car parking), equipment and facilities (modes of transport and stops), and operations (routes operated, frequency of services, prices charged)". For internal movement of the tourist at the destination especially by road transport then these services have significant influence on the selection of the destination. The study has measured construct transport accessibility in terms of the components of transport services necessary for smooth movement of tourist at the destination. The study has analysed these components of transport accessibility and their relationship of transport accessibility with perceived performance, perceived value and tourist satisfaction.
- The relationship between transport accessibility and perceived performance is positive and significant (β=0.762, t=26.343, p= 0.000) and indicates that enhancing transport accessibility has a positive effect on perceived performance. This backs up previous research that increasing internal accessibility by

transportation services may increase destination performance (Thompson and Schofield, 2007).

- The relationship between transport accessibility and perceived value is positive and significant (β=0.243, t=2.883, p= 0.004) again indicating that improving transport accessibility will lead to an increase in perceived value.
- The study identifies a negative and insignificant relationship between transport accessibility and tourist satisfaction (β=-0.067, t=1.217, p= 0.224). Similar findings have been reported by other studies by (Ali and Howaidee, 2012; Arasli and Baradarani, 2014; Tyrinopoulos and Antoniou, 2008).
- Further analysis was carried out to determine whether there was any mediating effect of perceived performance and perceived value on the relationship between transport accessibility and tourist satisfaction. It was seen that the relationship is:
    1) fully mediated by the perceived performance that means tourists are satisfied with the performance of transport services which provide better access to tourist sites.
    2) partially mediated by perceived value which shows that price and quality have an effect on tourist satisfaction, but not to a large extent.
- The relationship between perceived performance and tourist satisfaction being positive and significant (β=0.490, t=5.857, p= 0.000) it may be said that perceived performance has a positive effect on tourist satisfaction and has been found by Baker and Crompton (2008); Bigne et al. (2001); Chan et al. (2003); Fornell et al. (1996); Kerdpitak and Heuer (2014); Lai and Chen (2011); Song et al (2011); Tepanon et al. (2008); Tyrinopoulos and Antoniou (2008); Wang Xia et al. (2009). Perceived performance is fully mediating the relationship between transport accessibility and tourist satisfaction.
- The relationship between perceived performance and perceived value is significant (β=0.565, t=6.325, p= 0.000). The positive relationship between perceived performance and perceived value is similar to other studies in the literature (Chan et al., 2003; Chen, 2008; Fornell et al., 1996; Lai and Chen, 2011; Song et al., 2011, 2012 Tepanon et al., 2008; Wang Xia et al., 2009). The results suggest that an increase in performance is likely to enhance tourists'

satisfaction as well as the perceived value implying that tourists perceive that they are obtaining good value for the money spent.

- The relationship between perceived value and tourist satisfaction is significant (β=0.511, t=7.447, p= 0.000). Perceived value has a positive effect on tourist satisfaction, a finding also supported by other studies (Chan et al., 2003; Chen 2008; Fornell et al., 1996; Guzman-Parra et al, 2016; Lai and Chen 2011; Lee et al.2007; Song et al 2011, 2012; Tepanon et al 2008; Wang Xia et al 2009). Perceived value is partially mediating the relationship between transport accessibility and tourist satisfaction.
- The calculated Tourist Satisfaction Index suggest that, on a scale ranging from 0 to 100, of the eight modes considered, tourists are most satisfied with Private bus operators (80.60), followed by Public transport (KTCL) (76.25), Auto rickshaw (76.15) and least satisfied with vehicles arranged by hotels and tour operator (71.18). The mode-wise Tourist Satisfaction Index suggests that the road transport service providers of the modes identified with lower Tourist Satisfaction Index may try to identify the factors influencing the satisfaction and improve their facilities, which will in return enhance tourist satisfaction for these services at the destination. The attributes of road transport services identified in the study, proved to have significant effect on tourist satisfaction through structural equation modelling.

5.8 SUMMARY

The analysis and the results using PLS-SEM presented in this chapter show that transport accessibility, perceived performance and perceived value are attributes of road transport services that influence tourist satisfaction with these services at the destination. The model implied weights were used to calculate Tourist Satisfaction Index for the modes of transport used by the tourists. Based on these results the moderation analysis is conducted in the next chapter to determine whether mode of transport influences the relationship between the attributes of road transport services and tourist satisfaction. Also to identify the factors affecting tourist satisfaction with road transport services at the destination, Importance-Satisfaction Analysis is presented in Chapter 7.

CHAPTER 6

ANALYSIS AND RESULTS- MODERATION ANALYSIS

CHAPTER 6

ANALYSIS AND RESULTS-MODERATION ANALYSIS

This chapter presents the analysis and results of **Objective 3:** To determine whether the mode of transport influences the relationship between transport accessibility, perceived performance, perceived value and tourist satisfaction with road transport services at the destination.

6.1 INTRODUCTION

The third objective of the study viz.to determine whether the mode of transport influences the relationship between the attributes of road transport services and tourist satisfaction, is analysed using Hayes (2018) SPSS Process Macros (Version 3.1) to estimate moderation models. Moderated Multiple Regression (MMR) is the method of choice for testing hypotheses about the moderating effects of categorical variables in a variety of research domains (Aguinis et al. 2005). In moderation, as stated by Hayes and Montoya (2017), the term independent variable or focal predictor refers to the variable X whose effect on an outcome Y is of interest. The moderator variable W, by contrast, is the variable that in some way modifies or influences the size of the independent variable or focal predictor's effect on Y.

6.2 MODERATING ROLE OF MODE OF TRANSPORT

The modes of transport used by tourists during their visit influence their movement patterns (Zoltan, 2014). For any tourist destination, the modes of transport available at the destination provide mobility to the tourist and also affect their satisfaction with the services at the destination (Maseiro & Zoltan, 2013; Page & Lumsdon, 2004).

This study has identified transport accessibility, perceived performance and perceived value as attributes of road transport services affecting tourist satisfaction at the destination, and proposes that the relationship between attributes of road transport services and tourist satisfaction may be influenced by the modes of transport used by tourists at the destination. Therefore the association between attributes of road transport services (X) viz. transport accessibility, perceived performance, perceived value and

tourist satisfaction (Y) is expected to be moderated by the modes of transport (W) used by the tourist at the destination.

The following hypotheses were proposed and tested using moderation analysis as under **H9**. The mode of transport moderates the relationship between tourist satisfaction with road transport services and each of the identified antecedents, viz. transport accessibility, perceived performance and perceived value.

1. **H9a**: The mode of transport moderates the relationship between transport accessibility and tourist satisfaction with road transport services at the destination.
2. **H9b**: The mode of transport moderates the relationship between perceived performance and tourist satisfaction with road transport services at the destination.
3. **H9c**: The mode of transport moderates the relationship between perceived value and tourist satisfaction with road transport services at the destination.

In this study, the influence of Modes of transport (W) on the relationship between Attributes of road transport services (X) and Tourist satisfaction (Y) is analysed using moderated multiple regressions (Hayes, 2012). The moderator variable mode of transport (W) used in the analysis is a multi-categorical variable. When the moderator is a multi-categorical variable probing the interaction involves quantifying the relationship between X and Y in each of the groups that constitute the multi-categorical moderator.

The conceptual and statistical model for multi-categorical moderator is shown in Figure 6.1

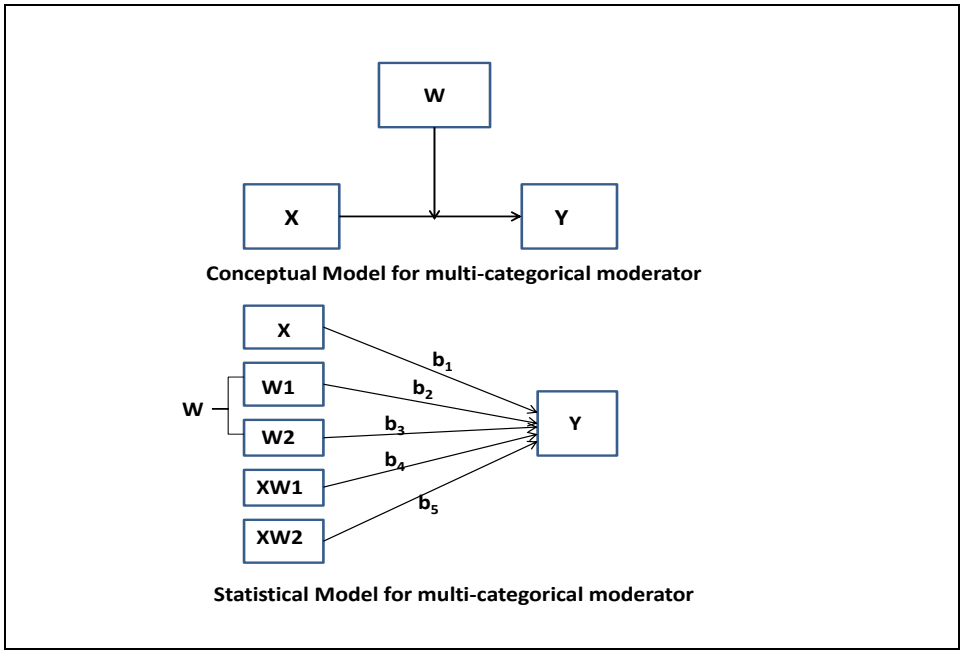


Figure 6.1: Conceptual and Statistical Model for Moderation Analysis

Source: Hayes (2018) Process Model 1

Following Hayes & Montoya (2017), the multi-categorical moderator variable is coded using the indicator coding system, which is common and frequently used. In this study, the multi-categorical moderator contains three categories of modes used by tourists and classified as mass transport, hired vehicles and self-driven vehicles as reported below.

Table 6.1: Categories of Modes of Transport for the Analysis

Mode of transport	No. of respondents	Category of mode
Public Bus transport (KTCL), Private bus transport, Sightseeing vehicles arranged by hotels and tour operators Government sightseeing vehicles	225	Mass transport
Taxi/ Cab Motorcycle taxi (Pilot) Auto rickshaw	216	Hired Vehicles
Rent a Bike and Rent a Car	165	Self-driven Vehicles

Source: Researcher's compilation

6.3 CODING OF THE CATEGORICAL VARIABLE:

For the purpose of analysis, two dummy variables W_1 and W_2 were coded

1) By using mass transport as a reference group
2) By using hired vehicles as a reference group

The details of the coding used for analysis are explained below

6.3.a Mass Transport As The Reference Group

Table 6.2: Indicator Coding with Mass Transport as Reference Group

Coding used for Category of Modes of transport	W_1	W_2	Group
1 (Mass transport)	0	0	Reference Group 1
2 (Hired vehicles)	1	0	Group 2
3 (Self driven vehicles)	0	1	Group 3

Source: Researcher's coding

Table 6.2 shows coding of the multi-categorical variable as 1= mass transport, 2=hired vehicles, 3= self-driven vehicles.

However, by using one category as a reference group, the inferential tests for the other groups may not be available. For e.g. using the above indicator coding, the inferential test for hired vehicles and self-driven vehicles group is not available for analysis. This information can be obtained by recoding the reference group and modifying the construction of W_1 and W_2 with the other reference group. For the purpose of analysis following recoding of the multi-categorical moderator is used.

6.3.b Hired Vehicles As The Reference Group:

Table 6.3: Indicator Coding With Hired Vehicles as Reference Group

Coding used for Category of Modes of transport	W_1	W_2	Group
1 (Hired vehicles)	0	0	Reference Group 1
2 (Self driven vehicles)	1	0	Group 2
3 (Mass transport)	0	1	Group 3

Source: Researcher's coding

The above table shows re-coding of the multi-categorical variable as 1= hired vehicles, 2= self-driven, 3= mass transport.

Using indicator coding when there are three categories, $W_1=W_2=0$ for all cases in the first group which is called as the baseline category or reference group, $W_1=1$ and $W_2=0$ for all cases in the second group and $W_1=0$ and $W_2=1$ for all cases in the third group. Using indicator coding system for a three group categorical variable the linear regression model will be

$$Y = b_0+b_2W_1+b_3W_2 \qquad \text{(Eq.1)}$$

where regression coefficient

- b_0 is the mean of Y for the reference group,
- b_2 estimates the difference between the mean of group coded $W_1=1$ and the reference group and
- b_3 estimates the difference between the mean of group coded $W_2=1$ and the reference group (Hayes 2017).

6.4 PROBING THE INTERACTION AND INTERPRETING THE REGRESSION COEFFICIENTS USING PROCESS MACROS

When the moderator is multi-categorical, probing the interaction involves quantifying the relationship between the focal antecedent X and the outcome variable Y in each of the groups that constitute the multi-categorical moderator. In this study, with multi-categorical moderator having three categories, coding for the variable Mode of transport is represented with two dummy variables W_1 and W_2, predictor variable X is Attributes of road transport services, and the outcome variable Y is Tourist satisfaction. To test for the evidence of moderation i.e. whether the relationship between predictor variable Attributes of the road transport services (X), and the outcome variable Tourist satisfaction (Y) varies systematically as a function of moderator (W), the regression model will be

$$\hat{Y}= b_0 +b_1 X +b_2 W_1+b_3W_2 +b_4XW_1+b_5XW_2 \qquad \text{(Eq 2)}$$

Probing moderation involves ascertaining whether the conditional effect of X on Y is different from zero at certain specified values of W. The above equation can be rewritten in a form that expresses X's effect on Y as a function of multi- categorical W

$$\hat{Y}= b_0 + (b_1+ b_4W_1+b_5W_2) X+b_2 W_1+b_3W_2 \quad \text{(Eq. 3)}$$

The conditional effect of X on Y is defined by the function of the three group multi-categorical moderator W:

$$\theta_{X\rightarrow Y} =b_1 +b_4W_1 +b_5W_2 \quad \text{(Eq. 4)}$$

In this equation $\theta_{X\rightarrow Y}$ is the conditional effect of X on Y, but because there are only three patterns of W_1 & W_2 representing the three groups, the equation produces only three values. These represent how differences in X relate to differences in Y in each of the three groups. With estimates of b_1, b_4 & b_5 the three combinations of W_1 & W_2 representing the three groups can be plugged into this function to get the slopes of the three lines and each can be interpreted just like a regression coefficient as the estimated difference in Y between two cases that differ by one unit on X.

In the Equation No 4 b_1 quantifies the relationship between X&Y when $W_1=W_2=0$ which represents the reference group, and b_4 & b_5 quantify the difference in the relationship between X & Y in the reference group and the group coded W_1 or W_2.

By using indicator coding system for representing three groups of multicategorical variable modes of transport, two analyses were run

- by adopting mass transport as the reference group and
- re-running the analysis by adopting hired vehicles as the reference group.

The following details are available from process output for testing moderation, probing interaction and interpretation of regression coefficients. This study used Process macro with nonparametric bootstrapping with 5000 resample to examine the hypotheses; thus all the coefficients are unstandardised (Hayes, 2018).

6.5 ANALYSIS OF MODERATION EFFECT OF MODES OF TRANSPORT ON TRANSPORT ACCESSIBILITY AND TOURIST SATISFACTION WITH ROAD TRANSPORT SERVICES AT THE DESTINATION:

For testing whether the relationship between transport accessibility and tourist satisfaction is moderated by modes of transport, following moderation analyses were conducted

Model 1 Y: Tourist Satisfaction
X: Transport Accessibility
W: Modes of transport

Table 6.4: Regression Model Estimating Tourist Satisfaction from Transport Accessibility

R	R-sq	MSE	F	df1	df2	P
0.567	0.3215	15.1916	56.8517	5	600	0.0000

Source: Researcher's computation

The model accounts for 32.15% of the variance in tourist satisfaction with $R^2 = 0.3215$, F (5,600) =56.8517, p=0.0000. For testing the hypothesis moderated regression analysis using different reference groups was carried out as given below

6.5.i Using mass transport as the reference group

Table 6.5: Model coefficients for the moderation effects of mode of transport (Using mass transport as the reference group)

Outcome Variable: Tourist Satisfaction						
Model	Coefficient	se	t	p	LLCI	ULCI
Constant b_0	7.8613	1.1292	6.9619	0.0000	5.6437	10.079
Accessibility (IV) b_1	0.2099	0.0155	13.5498	0.0000	0.1795	0.2403
W_1 (Hired vehicles) b_2	6.1263	1.5879	3.858	0.0001	3.0077	9.2449
W_2 (Self driven vehicles) b_3	7.2472	1.6447	4.4065	0.0000	4.0172	10.4772
Accessibility x W_1 b_4	-0.0852	0.0224	-3.8071	0.0002	-0.1291	-0.0412
Accessibility x W_2 b_5	-0.0972	0.0237	-4.1085	0.0000	-0.1436	-0.0507

Source: Researcher's computation

Using the linear regression model:

$$Y = b_0 + b_2W_1 + b_3W_2 \qquad \text{(Eq.5)}$$

The regression coefficient b_0=7.8613 is the mean of Y for the mass transport reference group. The regression coefficient for W_1 is b_2=6.1263 which is equal to the difference between the mean of the hired vehicle group (7.8613+6.1263(1) +7.2472(0) = 13.9876) and mean of mass transport group (7.8613). The regression coefficient for W_2 is b_3=7.2472 which is equal to the difference between the mean of the self driven vehicles group (7.8613+6.1263(0) +7.2472(1) =15.1085) and mean of mass transport group (7.8613)

Results presented in Table 6.5 indicate that transport accessibility is positively and significantly associated with tourist satisfaction (b_1=0.2099, p=0.0000). The moderating effect of modes of transport on the relationship between transport accessibility and tourist satisfaction shows significant negative interaction effect with 1) accessibility and tourist using hired vehicles (b_4=-0.0852,p=0.0002) and 2) accessibility and tourist using self driven vehicles (b_5=-0.0972,p=0.0000)

The regression model for moderation is

$$=b_0 +b_1 X +b_2 W_1+b_3W_2 +b_4XW_1+b_5XW_2 \qquad \text{(Eq. 6)}$$

$$= 7.8613+0.2099 X +6.1263 W_1+7.2472 W_2 -0.0852 XW_1-0.0972XW_2$$

In this model b_0 = 7.8613, b_1 =.2099, b_2 =6.1263, b_3 =7.2472, b_4 = -0.0852, b_5= -0.0972 are statistically different from zero.

For probing moderation the equation $\theta_{X\rightarrow Y} = b_1 + b_4W_1 + b_5W_2$ expresses the conditional effect of X as a function of the three group multi-categorical variable W. In this analysis, plugging the three patterns of W_1 & W_2 into this equation yields three conditional effects through transport accessibility on tourist satisfaction:

$\theta_{X\rightarrow Y}$ | Mass transport = 0.2099- 0.0852(0)-0.0972(0) = 0.2099

$\theta_{X\rightarrow Y}$| Hired vehicles = 0.2099-0.0852(1)-0.0972(0) = 0.1247

$\theta_{X\rightarrow Y}$ | Self- driven vehicles = 0.2099-0.0852(0)-0.0972(1) = 0.1127

Table 6.6: Conditional effects through transport accessibility at three groups of modes of transport for tourist satisfaction (Mass Transport as reference group)

Conditional effects of the focal predictor at values of the moderator(s):							
Modes of transport		Effect	Se	t	p	LLCI	ULCI
Mass transport	1	0.2099	0.0155	13.5498	0.0000	0.1795	0.2403
Hired vehicles	2	0.1247	0.0161	7.7211	0.0000	0.093	0.1564
Self-driven vehicles	3	0.1127	0.0179	6.3041	0.0000	0.0776	0.1478

Source: Researcher's computation

These are the slopes of the three lines in Figure 6.2 The relationship between transport accessibility and tourist satisfaction is positive and statistically significant for all the groups.

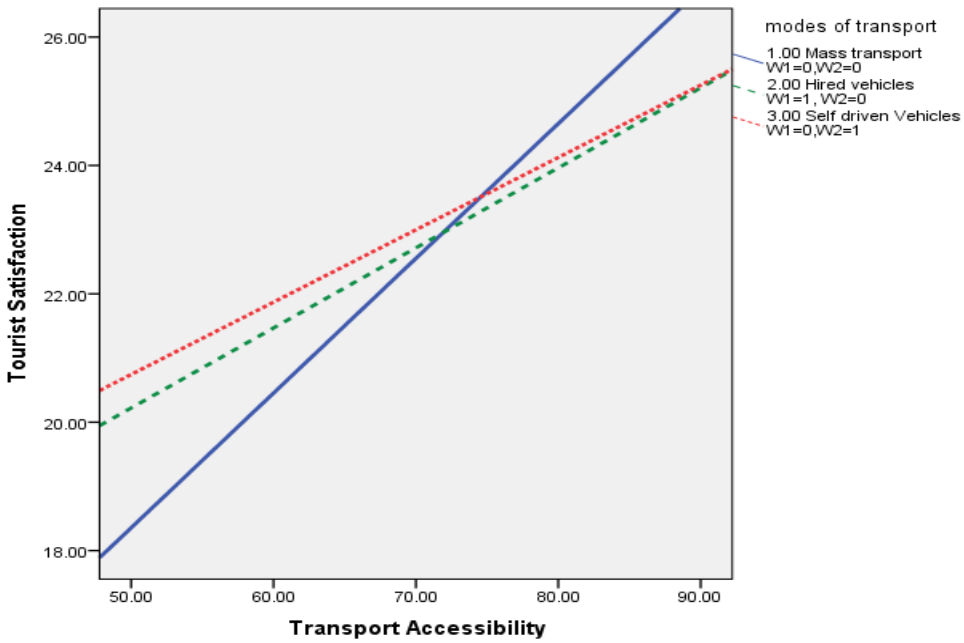


Figure 6.2: Tourist satisfaction as a function of modes of transport and transport accessibility (N= 606)

Source: Researcher's model

With reference to equation no.6, since b_1 quantifies the relationship between transport accessibility and tourist satisfaction when W_1 and W_2 both equal zero, it may be concluded that for the tourists using mass transport, the relationship between transport accessibility and tourist satisfaction is positive and statistically significant.

W_1 captures the comparison between tourists in the mass transport group and the hired vehicles group. So b_4 = 0.1247- 0. 2099 = -0.0852 is the difference in the conditional effect of transport accessibility on tourist satisfaction between these two groups. This is the difference between the slopes of the corresponding lines in Figure. 6.2

As this difference is statistically significant, it can be concluded that *the relationship between transport accessibility and tourist satisfaction differs between tourists using mass transport and those using hired vehicles.*

W_2 captures the comparison between the tourist in the mass transport group and the self-driven vehicles group. So b_5=0.1127-0.2099=-0.0972 is the difference in the conditional effect of transport accessibility on tourist satisfaction between these two groups. This is the difference between the slopes of the corresponding lines in Figure 6.2

As this difference is statistically significant, it can be concluded that *the relationship between transport accessibility and tourist satisfaction differs between tourist using mass transport and those using self-driven vehicles.*

The results for moderation as presented in the conditional effect table shows positive effect of transport accessibility on tourist satisfaction for tourist using mass transport (0.2099), this effect is decreasing for tourists using hired vehicles (0.1247) and is further decreasing for tourists using self driven vehicles (0.1127). **Thus the moderation is showing accelerating effect.**

6.5.ii Using Hired Vehicles as the reference group

To get the information about the statistical significance of the relationship between transport accessibility and tourist satisfaction for tourists in the hired vehicles group and self-driven vehicles group, the hired vehicles group was recoded as the reference group and W_1 & W_2 were modified, and the analysis was repeated.

Table 6.7: Model coefficients for the moderation effects of mode of transport (Using hired vehicles as reference group)

Model		Coefficient	se	t	p	LLCI	ULCI
Constant	b_0	13.9877	1.1164	12.5287	0.0000	11.795	16.1803
Accessibility (IV)	b_1	0.1247	0.0161	7.7211	0.0000	0.093	0.1564
W_1 Self driven vehicles	b_2	1.1209	1.6359	0.6852	0.4935	-2.0919	4.3338
W_2 Mass transport	b_3	-6.1263	1.5879	-3.858	0.0001	-9.2449	-3.0077
Accessibility x W_1	b_4	-0.0120	0.0241	-0.4977	0.6188	-0.0593	0.0353
Accessibility x W_2	b_5	0.0852	0.0224	3.8071	0.0002	0.0412	0.1291

Source: Researcher's computation

Using the linear regression model:

$$Y = b_0 + b_2W_1 + b_3W_2 \qquad \text{(Eq.7)}$$

The regression coefficient b_0=13.9877 is the mean of Y for the hired vehicles reference group. The regression coefficient for W_1 is b_2=1.1209 which is equal to the difference between the mean of the self driven vehicle group 13.9877+1.1209 (1) -6.1263 (0) =15.1086 and mean of hired vehicles group 13.9877. The regression coefficient for W_2

is b_3=-6.1263 which is equal to the difference between the mean of the mass transport group 13.9877+1.1209(0)-6.1263(1) =7.8614 and mean of hired vehicles group13.9877.

Results presented in Table 6.7 indicate that transport accessibility is positively and significantly associated with tourist satisfaction (b_1=0.1247, p=0.0000). The moderating effect of modes of transport on the relationship between transport accessibility and tourist satisfaction shows negative and not significant interaction effect with accessibility and tourist using self driven vehicles (b_4=-0.0120,p=0.6188) and positive and significant interaction effect with accessibility and tourist using mass transport (b_5=0.0852,p=0.0000).

Regression model for moderation is

$$=b_0 +b_1 X +b_2 W_1+b_3W_2 +b_4XW_1+b_5XW_2 \qquad \text{(Eq. 8)}$$

$$= 13.9877+0.1247X +1.1209 W_1-6.1263W_2- 0.0120 XW_1+0.0852XW_2$$

In this model b_0=13.9877, b_1=0.1247, b_2=1.1209, b_3=-6.1263, b_4= -0.0120 is not statistically different from zero and b_5 =0.0852 is statistically different from zero.

For probing moderation, the equation $\theta_{X\rightarrow Y} = b_1 + b_4W_1 + b_5W_2$ expresses the conditional effect of X as a function of the three group multi-categorical variable W. In this analysis, plugging the three patterns of W_1 & W_2 into this equation yields three conditional effect of transport accessibility on tourist satisfaction:

$\theta_{X\rightarrow Y}|$ hired vehicles = 0.1247- 0.0120(0) +0.0852 (0) = 0.1247

$\theta_{X\rightarrow Y}|$ self driven vehicles = 0.1247- 0.0120(1) +0.0852 (0) =0.1127

$\theta_{X\rightarrow Y}|$ mass transport = 0.1247- 0.0120(0) + 0.0852(1) = 0.2099

Table 6.8: Conditional effects through transport accessibility at three groups of modes of transport for tourist satisfaction (hired vehicles as reference group)

Conditional effects of the focal predictor at values of the moderator(s)							
Modes of transport		Effect	Se	t	p	LLCI	ULCI
Hired vehicles	1	0.1247	0.0161	7.7211	0.0000	0.0930	0.1564
Self driven	2	0.1127	0.0179	6.3041	0.0000	0.0776	0.1478
Mass transport	3	0.2099	0.0155	13.5498	0.0000	0.1795	0.2403

Source: Researcher's computation

These are the slopes of the three lines in Figure. 6.3. The relationship between transport accessibility and tourist satisfaction is statistically significant and positive for all the groups

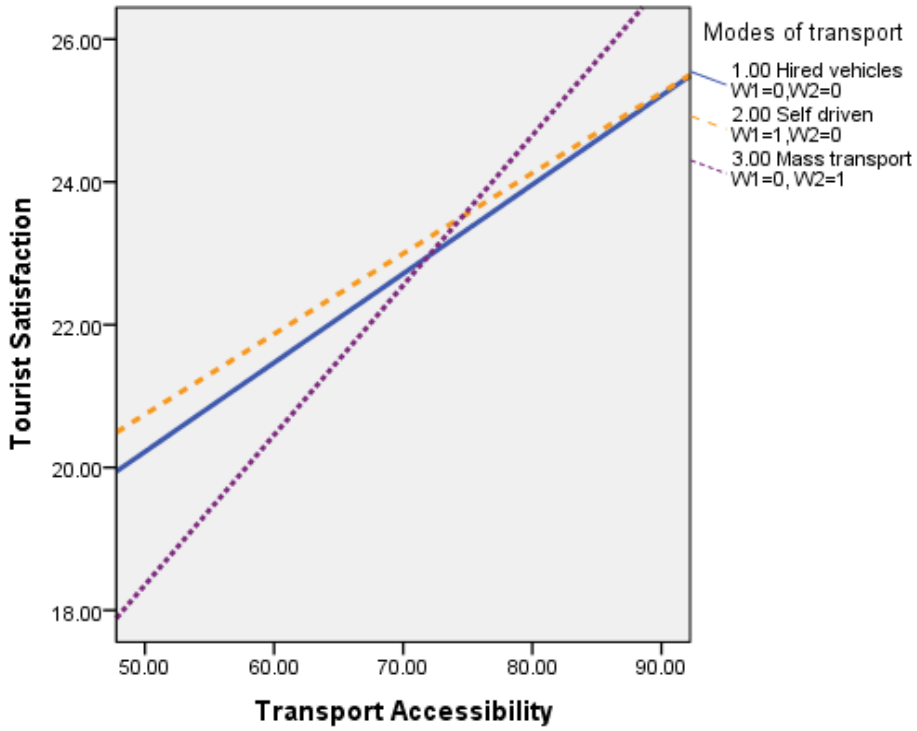


Figure 6.3: Tourist Satisfaction as A Function of Modes of Transport and Transport Accessibility (N= 606)

Source: Researcher's model

After rerunning the analysis, b_1 represents the relationship between transport accessibility and tourist satisfaction in the hired vehicles as the reference group. It may be concluded that for tourists using hired vehicles, the relationship between transport accessibility and tourist satisfaction is positive and statistically significant.

W_1 captures the comparison between tourists in the hired vehicles group and the self-driven vehicles group. So b_4= 0.1127-0.1247=-0.0120 is the difference in the conditional effect of transport accessibility on tourist satisfaction between these two groups. This is the difference between the slopes of the corresponding lines in Figure 6.3

As this difference is not statistically significant, it can be concluded that *the relationship between transport accessibility and tourist satisfaction does not differ between tourists using hired vehicles and those using self-driven vehicles.*

W_2 captures the comparison between tourists in the hired vehicles group and the mass transport group. So b_5=0.2099-0.1247=0.0852 is the difference in the conditional effect of transport accessibility on tourist satisfaction between these two groups. This is the difference between the slopes of the corresponding lines in Figure 6.3

As this difference is statistically significant, it can be concluded that *the relationship between transport accessibility and tourist satisfaction differs between tourists using hired vehicles and those using mass transport.*

The results for moderation as presented in conditional effect Table 6.8 shows positive effect of transport accessibility on tourist satisfaction for tourist using hired vehicles (0.1247), this effect is decreasing for tourist using self driven (0.1127) and is increasing for tourist using mass transport (0.2099). **Thus the moderation is showing de-accelerating effect.**

In both the analyses (using both reference groups) the conditional effect of the transport accessibility on tourist satisfaction was found to be significant for all the three groups, mass transport group (b =0.2099, 95% CI [0.1795, 0.2403], p=0.0000), hired vehicles (b=0.1247, 95% CI [0.0930, 0.1564], p=0.0000), self driven vehicles group (b=0.1127, 95% CI [0.0776, 0.1478], p=0.0000). **Thus interaction indicated significantly conditional effect of the transport accessibility on tourist satisfaction supporting hypothesis H9a.**

6.6 ANALYSIS OF MODERATION EFFECT OF MODES OF TRANSPORT ON PERCEIVED PERFORMANCE AND TOURIST SATISFACTION WITH ROAD TRANSPORT SERVICES AT THE DESTINATION:

For testing whether the relationship between perceived performance and tourist satisfaction is moderated by modes of transport, following moderation analyses were conducted

Model 1 Y: Tourist Satisfaction

X: Perceived Performance

W: Modes of transport

Table 6.9: Regression Model Estimating Tourist Satisfaction from Perceived Performance

R	R-sq	MSE	F	df1	df2	P
0.688	0.4737	11.784	107.9932	5	600	0.0000

Source: Researcher's computation

The model accounts for 47.37 % of the variance in tourist satisfaction with $R^2 = 0.4737$, F (5,600) = 107.9932, p=0.0000. For testing the hypothesis, moderated regression analysis using different reference groups was carried out as given below:

6.6.i Using Mass transport as the reference group

Table 6.10: Model coefficients for the moderation effects of mode of transport Using mass transport as the reference group)

Model		coefficient	se	t	p	LLCI	ULCI
Constant	b_0	8.3441	0.8756	9.5295	0.0000	6.6245	10.0638
Perceived performance (IV)	b_1	0.6677	0.0392	17.0462	0.0000	0.5908	0.7446
W_1 (Hired vehicles)	b_2	1.366	1.4885	0.9177	0.3592	-1.5574	4.2893
W_2 (Self driven vehicle)	b_3	-1.6959	1.6446	-1.0312	0.3029	-4.9257	1.5339
Performance x W_1	b_4	-0.1098	0.0652	-1.6846	0.0926	-0.2377	0.0182
Performance x W_2	b_5	0.0397	0.0728	0.5459	0.5853	-0.1032	0.1827

Source: Researcher's computation

Using the linear regression model:

$$Y = b_0 + b_2W_1 + b_3W_2 \quad \text{(Eq. 9)}$$

The regression coefficient b_0=8.3441 is the mean of Y for the mass transport reference group. The regression coefficient for W_1 is b_2=1.366 which is equal to the difference between the mean of the hired vehicle group (8.3441+1.366(1) -1.6959 (0) =9.7101) and mean of mass transport group (8.3441). The regression coefficient for W_2 is b_3= -1.6959

which is equal to the difference between the mean of the self driven vehicles group (8.3441+1.366 (0) -1.6959 (1) =6.6482) and mean of mass transport group (8.3441).

Results presented in table 6.10 indicate that perceived performance is positively and significantly associated with tourist satisfaction (b_1=0.6677, p=0.0000). The moderating effect of modes of transport on the relationship between perceived performance and tourist satisfaction shows 1) negative not significant interaction effect with perceived performance and tourist using hired vehicles (b_4=-0.1098,p=0.0926) and 2) positive and not significant interaction effect with perceived performance and tourist using self driven vehicles (b_5=0.0397,p=0.5853).

The regression model for moderation is

$$=b_0 +b_1 X +b_2 W_1+b_3W_2 +b_4XW_1+b_5XW_2 \qquad \text{(Eq. 10)}$$

$$=8.3441 +0.6677X + 1.3660W_1-1.6959W_2 - 0.1098XW_1+0.0397XW_2$$

In this model b_0 =8.3441, b_1 =0.6677, b_2 = 1.3660, b_3 = -1.6959, b_4 =-0.1098 and b_5 = 0.0397 both are not statistically different from zero.

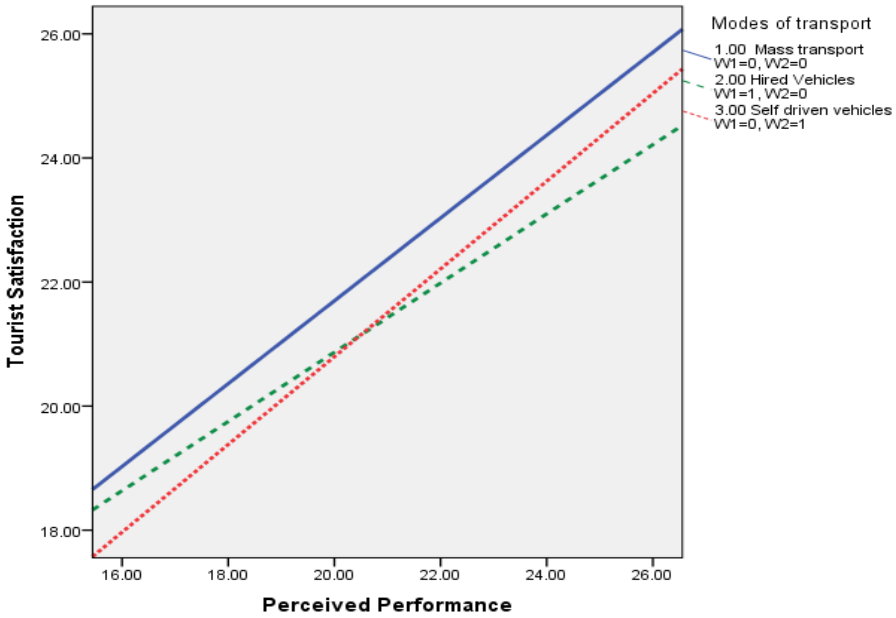


Figure 6.4: Tourist Satisfaction as A Function of Modes of Transport and Perceived Performance (N= 606)

Source: Researcher's model

As b_4 = -0.1098, t (600) = -1.6846, p=.0926 and b_5 =0.0397 t (600) = 0.5459, p=0.5853 are not statistically significant, **interaction results indicate that mode of transport**

does not moderate the relationship between perceived performance and tourist satisfaction.

6.6.ii Hired vehicles as the reference group

Table 6.11: Model coefficients for the moderation effects of mode of transport (Using Hired vehicles as the reference group)

Model		coefficient	se	t	p	LLCI	ULCI
Constant	b_0	9.7101	1.2037	8.0666	0.0000	7.346	12.0741
Perceived performance (IV)	b_1	0.5579	0.0521	10.7134	0.0000	0.4556	0.6602
W_1 (Self driven vehicle)	b_2	-3.0619	1.8403	-1.6637	0.0967	-6.6762	0.5524
W_2 (Mass transport)	b_3	-1.366	1.4885	-0.9177	0.3592	-4.2893	1.5574
Performance x W_1	b_4	0.1495	0.0805	1.8578	0.0637	-0.0085	0.3076
Performance x W_2	b_5	0.1098	0.0652	1.6846	0.0926	-0.0182	0.2377

Source: Researcher's computation

Using the linear regression model:

$$Y = b_0 + b_2W_1 + b_3W_2 \qquad \text{(Eq. 11)}$$

The regression coefficient b_0=9.7101 is the mean of Y for the hired vehicles reference group. The regression coefficient for W_1 is b_2= -3.0619 which is equal to the difference between the mean of the self driven vehicle group (9.7101 -3.0619 (1) -1.366 (0) = 6.6482) and mean of hired vehicles group (9.7101). The regression coefficient for W_2 is b_3=-1.366 which is equal to the difference between the mean of the mass transport group (9.7101 -3.0619 (0) -1.366 (1) = 8.3441) and mean of hired vehicles group (9.7101).

Results presented in Table 6.11 indicate that perceived performance is positively and significantly associated with tourist satisfaction (b_1=0.5579, p=0.0000). The moderating effect of modes of transport on the relationship between perceived performance and tourist satisfaction shows 1) positive and not significant interaction effect with accessibility and tourist using self driven vehicles (b_4=0.1495,p=0.0637) and 2) positive and not significant interaction effect with accessibility and tourist using self driven vehicles (b_5= 0.1098, p=0.0926).

The regression model for moderation is

$$=b_0 +b_1 X +b_2 W_1+b_3W_2 +b_4XW_1+b_5XW_2 \quad \text{(Eq. 12)}$$

$$= 9.7101 +0.5579X-3.0619W_1-1.3660W_2+0.1495XW_1+0.1098XW_2$$

In this model b_0 =9.7101, b_1 =0.5579, b_2 =-3.0619, b_3 =-1.3660, b_4 = 0.1495 and b_5 =0.1098 both are not statistically different from zero.

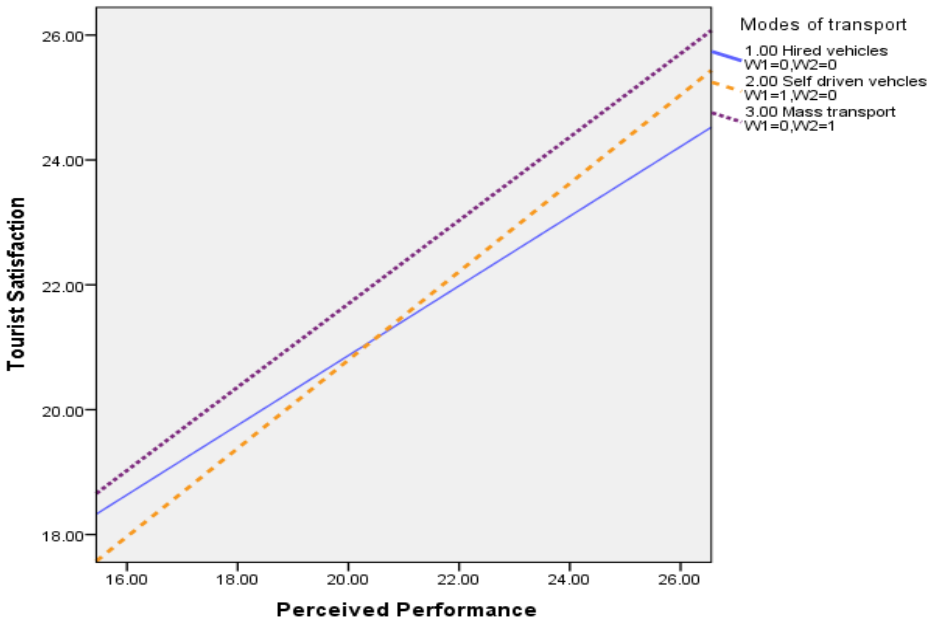


Figure 6.5: Tourist Satisfaction as A Function of Modes of Transport and Perceived Performance (N= 606)

Source: Researcher's model

As b_4 =0.1495, t (600) = 1.8578, p=.0637 and b_5 =0.1098, t (600) =1.6846, p=0.0926 both are not statistically significant, **interaction results indicate that mode of transport does not moderate the relationship between perceived performance and tourist satisfaction.**

In both the analyses, no significant conditional effects were found for all the three groups, thus hypothesis H9b is not supported.

6.7 ANALYSIS OF MODERATION EFFECT OF MODES OF TRANSPORT ON PERCEIVED VALUE AND TOURIST SATISFACTION WITH ROAD TRANSPORT SERVICES AT THE DESTINATION:

For testing whether the relationship between perceived value and tourist satisfaction is moderated by modes of transport, following moderation analyses were conducted

Model 1 Y: Tourist Satisfaction
X: Perceived Value
W: Modes of transport

Model Summary

Table 6.12: Regression model estimating tourist satisfaction from perceived value

R	R-sq	MSE	F	df1	df2	P
0.7093	0.5032	11.1238	121.5249	5	600	0.0000

Source: Researcher's computation

The model accounts for 50.32% of the variance in tourist satisfaction with $R^2 = 0.5032$, F (5,600) = 121.5249, p=0.0000. For testing the hypothesis, moderated regression analysis using different reference groups were carried out is given below:

6.7.i Using Mass transport as the reference group

Table 6.13: Model coefficients for the moderation effects of mode of transport (Using mass transport as the reference group)

Model		coefficient	se	t	p	LLCI	ULCI
Constant	b_0	6.3580	0.9007	7.0591	0.0000	4.5891	8.1268
Perceived value(IV)	b_1	1.0482	0.0558	18.7822	0.0000	0.9386	1.1578
W_1 (Hired vehicles)	b_2	3.7246	1.4337	2.5978	0.0096	0.9088	6.5403
W_2 (Self driven vehicle)	b_3	2.6451	1.515	1.7459	0.0813	-0.3303	5.6206
Perceived Value x W_1	b_4	-0.2576	0.0898	-2.87	0.0042	-0.4339	-0.0813
Perceived Value x W_2	b_5	-0.1661	0.0962	-1.7262	0.0848	-0.355	0.0229

Source: Researcher's computation

Using the linear regression model:

$$Y = b_0 + b_2W_1 + b_3W_2 \qquad \text{(Eq. 13)}$$

The regression coefficient b_0=6.3580 is the mean of Y for the mass transport reference group. The regression coefficient for W_1 is b_2=3.7246 which is equal to the difference between the mean of the hired vehicle group (6.3580+3.7246 (1) +2.6451 (0) =10.0826) and mean of mass transport group (6.3580). The regression coefficient for W_2 is b_3=-1.6959 which is equal to the difference between the mean of the self driven vehicles group (6.3580+3.7246 (0) +2.6451 (1) =9.0031) and mean of mass transport group (6.3580).

Results presented in Table 6.13 indicate that perceived value is positively and significantly associated with tourist satisfaction (b_1=1.0482, p=0.0000). The moderating effect of modes of transport on the relationship between perceived value and tourist satisfaction shows 1) negative and significant interaction effect with perceived value and tourist using hired vehicles (b_4=-0.2576, p=0.0042) and 2) negative and not significant interaction effect with perceived value and tourist using self driven vehicles (b_5=-0.1661, p=0.0848).

Regression model for moderation is

$$=b_0 +b_1 X +b_2 W_1+b_3W_2 +b_4XW_1+b_5XW_2 \qquad \text{(Eq. 14)}$$

$$= 6.3580+1.0482X +3.7246W_1+2.6451W_2-0.2576\ XW_1-0.1661XW_2$$

In this model b_0 = 6.3580, b_1 =1.0482, b_2 =3.7246, b_3 = 2.6451, b_4 = -0.2576 is statistically different from zero and b_5 =-0.1661 is not statistically different from zero.

For probing moderation, the equation $\theta_{X\rightarrow Y} = b_1 + b_4W_1 + b_5W_2$ expresses the conditional effect of X as a function of the three group multi-categorical variable W. In this analysis, plugging the three patterns of W_1 & W_2 into this equation yields three conditional effects of perceived value on tourist satisfaction:

$$\theta_{X\rightarrow Y} \mid \text{Mass transport} = 1.0482-0.2576(0)-0.1661(0) =1.0482$$

$$\theta_{X\rightarrow Y} \mid \text{Hired vehicles} =1.0482-0.2576(1)-0.1661(0) =0.7906$$

$$\theta_{X\rightarrow Y} \mid \text{self driven vehicles} = 1.0482-0.2576(0)-0.1661(1) = 0.8821$$

Table 6.14: Conditional effects through perceived value at three groups of modes of transport for tourist satisfaction (mass transport as reference group)

Conditional effects of the focal predictor at values of the moderator(s)						
Modes of transport	Effect	Se	t	p	LLCI	ULCI
Mass transport 1	1.0482	0.0558	18.7822	0.0000	0.9386	1.1578
Hired vehicles 2	0.7905	0.0703	11.2422	0.0000	0.6524	0.9286
Self driven vehicles 3	0.8821	0.0784	11.2554	0.0000	0.7282	1.0360

Source: Researcher's computation

These are the slopes of the three lines in Figure 6.6. The relationship between perceived value and tourist satisfaction is statistically significant and positive for all the groups.

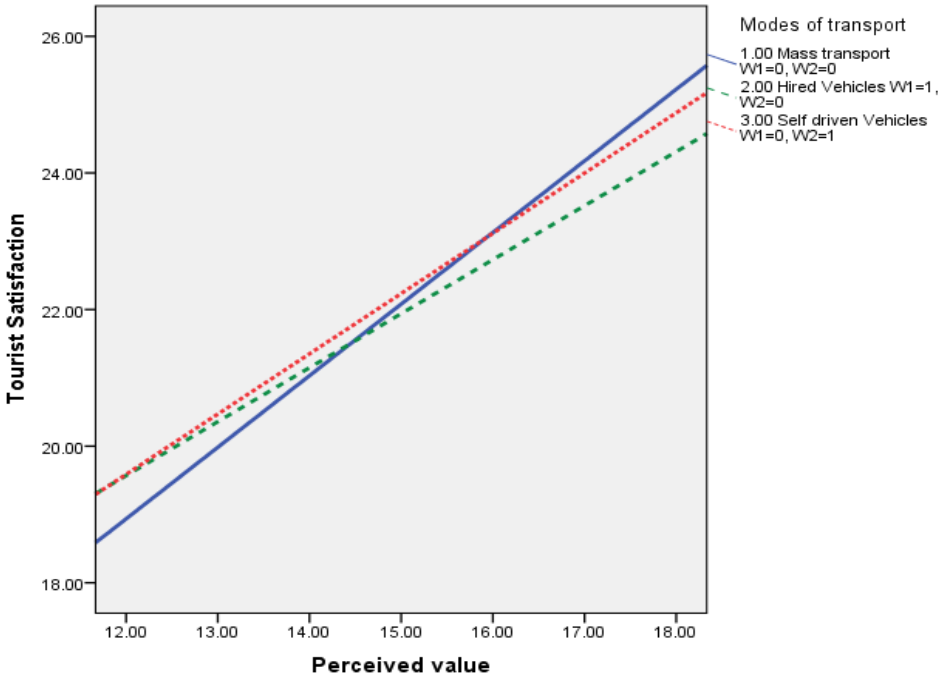


Figure 6.6: Tourist Satisfaction as A Function of Modes of Transport and Perceived Value (N= 606)

Source: Researcher's model

With reference to equation no 14, since b_1 quantifies the relationship between perceived value and tourist satisfaction when W_1 and W_2 both equal zero, *it may be concluded that for tourists using mass transport, the relationship between perceived value and tourist satisfaction is positive and statistically significant.*

W_1 captures the comparison between tourists in the mass transport group and the hired vehicles group. So b_4 = 0.7906- 1.0482=-0.2576 is the difference in the conditional effect of perceived value on tourist satisfaction between these two groups. This is the difference between the slopes of the corresponding lines in Figure 6.6.As this difference is statistically significant, it can be concluded that *the relationship between perceived value and tourist satisfaction differs between tourists using mass transport and those using hired vehicles.*

W_2 captures the comparison between the tourist in the mass transport group and the self-driven vehicles group. So b_5=0.8821 -1.0482 =0.1661 is the difference in the conditional effect of perceived value on tourist satisfaction between these two groups. This is the difference between the slopes of the corresponding lines in Figure 6.6.As this difference is not statistically significant, it can be concluded that *the relationship between perceived value and tourist satisfaction does not differ between tourists using mass transport and those using self-driven vehicles.*

The results for moderation as presented in the conditional effect Table 6.14 shows positive effect of perceived value on tourist satisfaction for tourist using mass transport (1.0482), this effect is decreasing for tourist using hired vehicles (0.7906) and is increasing for tourist using self driven vehicles (0.8821). **Thus the moderation is showing de-accelerating effect.**

6.7.ii Hired vehicles as the reference group

Table 6.15: Model coefficients for the moderation effects of mode of transport (Using Hired Vehicles as the reference group)

Model		Coeff	se	t	p	LLCI	ULCI
Constant	b_0	10.0826	1.1155	9.0385	0.0000	7.8918	12.2733
Perceived value(IV)	b_1	0.7905	0.0703	11.2422	0.0000	0.6524	0.9286
W_1 (Self driven vehicle)	b_2	-1.0795	1.6518	-0.6535	0.5137	-4.3235	2.1646
W_2 (Mass transport)	b_3	-3.7246	1.4337	-2.5978	0.0096	-6.5403	-0.9088
Perceived Value x W_1	b_4	0.0916	0.1053	0.8697	0.3848	-0.1152	0.2984
Perceived Value x W_2	b_5	0.2576	0.0898	2.87	0.0042	0.0813	0.4339

Source: Researcher's computations

Using the linear regression model:

$$Y = b_0 + b_2 W_1 + b_3 W_2 \quad \text{(Eq. 15)}$$

The regression coefficient b_0=10.0826 is the mean of Y for the hired vehicles reference group. The regression coefficient for W_1 is b_2=-1.0795 which is equal to the difference between the mean of the self driven vehicle group (10.0826 -1.0795(1)-3.7246(0) =9.0031) and mean of hired vehicles group (10.0826). The regression coefficient for W_2 is b_3= -3.7246 which is equal to the difference between the mean of the mass transport group (10.0826 -1.0795 (0) -3.7246 (1) =6.358) and mean of hired vehicles group 10.0826.

Results presented in Table 6.15 indicate that perceived value is positively and significantly associated with tourist satisfaction (b_1=0.7905, p=0.0000). The moderating effect of modes of transport on the relationship between perceived value and tourist satisfaction shows negative and not significant interaction effect with perceived value and tourist using self driven vehicles (b_4=-0.0916, p=0.3848) and positive and significant interaction effect with perceived value and tourist using mass transport (b_5=0.2576,p=0.0042).

The regression model for moderation is

$$= b_0 + b_1 X + b_2 W_1 + b_3 W_2 + b_4 X W_1 + b_5 X W_2 \quad \text{(Eq.16)}$$

$$= 10.0826 + 0.7905X - 1.0795 W_1 - 3.7246 W_2 + .0916\, X W_1 + 0.2576 X W_2$$

In this model b_0 = 10.0826, b_1 =0.7905, b_2 =-1.0795, b_3 = -3.7246, b_4 =0.0916 is not statistically different from zero and b_5 =0.2576 is statistically different from zero.

For probing moderation the equation $\theta_{X \to Y} = b_1 + b_4 W_1 + b_5 W_2$ expresses the conditional effect of X as a function of the three group multi-categorical variable W. In this analysis, plugging the three patterns of W_1 & W_2 into this equation yields three conditional effects of perceived value on tourist satisfaction:

$\theta_{X \to Y}$ | Hired vehicles = 0.7905+0.0916(0) +0.2576(0) = 0.7905

$\theta_{X \to Y}$ | Self driven vehicles = 0.7905+0.0916(1) +0.2576(0) = 0.8821

$\theta_{X \to Y}$ | Mass transport = 0.7905+0.0916(0) +0.2576(1) = 1.0481

Table 6.16: Conditional effects through perceived value at three groups of modes of transport for tourist satisfaction (hired vehicles as the reference group)

Conditional effects of the focal predictor at values of the moderator(s)						
Modes of transport	Effect	se	t	p	LLCI	ULCI
Hired Vehicles 1	0.7905	0.0703	11.2422	0.0000	0.6524	0.9286
Self driven vehicles 2	0.8821	0.0784	11.2554	0.0000	0.7282	1.036
Mass transport 3	1.0482	0.0558	18.7822	0.0000	0.9386	1.1578

Source: Researcher's computation

These are the slopes of the three lines in Figure 6.7. The relationship between perceived value and tourist satisfaction is statistically significant and positive for all the groups.

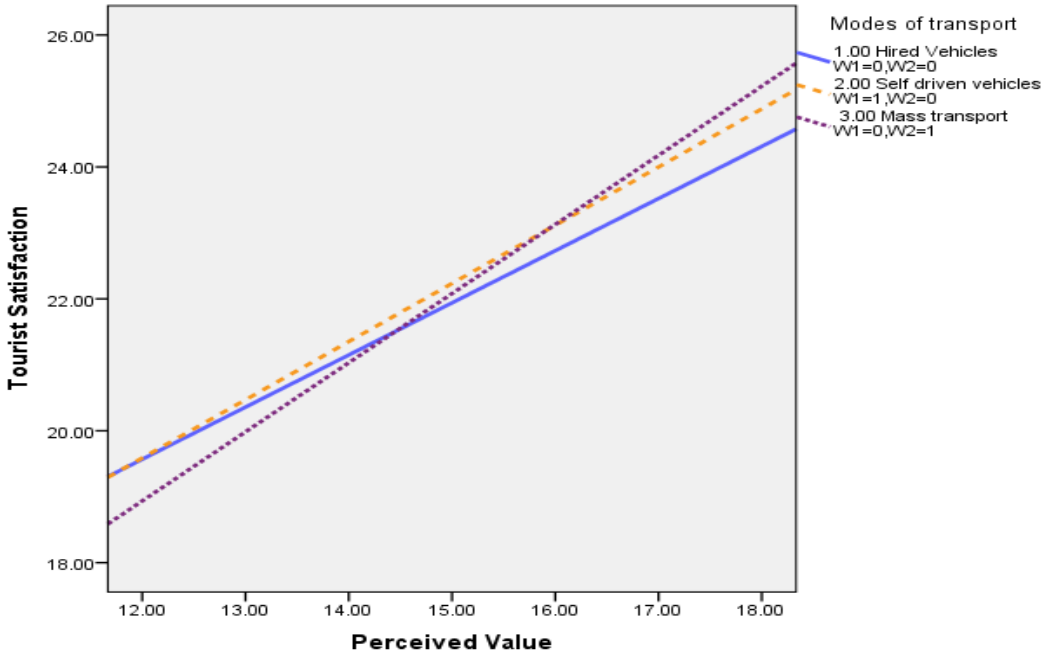


Figure 6.7: Tourist Satisfaction as A Function of Modes of Transport and Perceived Value (N= 606)

Source: Researcher's model

With reference to equation no 16, since b_1 quantifies the relationship between perceived value and tourist satisfaction when W_1 and W_2 both equal zero, it may be concluded that for tourists using hired vehicles, the relationship between perceived value and tourist satisfaction is positive and statistically significant.

W_1 captures the comparison between the tourist in the hired vehicles group and the self driven vehicles group. So b_4=0.8821- 0.7905= 0.0916 is the difference in the conditional effect of perceived value on tourist satisfaction between these two groups. This is the difference between the slopes of the corresponding lines in Figure 6.7. As this difference is not statistically significant, it can be concluded *that the relationship between perceived value and tourist satisfaction does not differ between tourists using hired vehicles and those using self-driven vehicles.*

W_2 captures the comparison between the tourist in the hired vehicles group and the mass transport group. So b_5=1.0481-0.7905 =0.2576 is the difference in the conditional effect of perceived value on tourist satisfaction between these two groups. This is the difference between the slopes of the corresponding lines in Figure 6.7. As this difference is statistically significant, it can be concluded that *the relationship between perceived value and tourist satisfaction differs between tourists using hired vehicles and those using mass transport.*

The results for moderation as presented in the conditional effect table no 6.16 show positive effect of perceived value on tourist satisfaction for tourist using hired vehicles (0.7905), this effect is increasing for tourist using self driven vehicles (0.8821) and this effect is further increasing for tourist using mass transport (1.0481).**Thus the moderation is showing accelerating effect**.

In both the analyses (for both reference groups) the conditional effect of the perceived value on tourist satisfaction was found to be significant for all the three groups, mass transport group (b =1.0482, 95% CI [0.9386, 1.1578], p=0.0000), hired vehicles (b=0.7905, 95% CI [0.6524, 0.9286], p=0.0000), self driven vehicles group (b=0.8821, 95% CI [0.7282, 1.0360], p=0.0000). **The interaction indicated significantly conditional effect of the perceived value on tourist satisfaction supporting hypothesis H9c.**

Table 6.17: Summary of hypotheses tested for Moderation

H9	The mode of transport moderates the relationship between tourist satisfaction with road transport services and each of the identified antecedents, viz. transport accessibility, perceived performance and perceived value.	Supported
H9 a	The mode of transport moderates the relationship between transport accessibility and tourist satisfaction with road transport services at the destination.	Supported
H9 b	The mode of transport moderates the relationship between perceived performance and tourist satisfaction with road transport services at the destination.	Not supported
H9 c	The mode of transport moderates the relationship between perceived value and tourist satisfaction with road transport services at the destination.	Supported

Source: Researcher's compilation

6.8 FINDINGS OF THE ANALYSIS:

i)The mode of transport moderates the relationship between tourist satisfaction with road transport services at the destination and each of the identified antecedents, viz. transport accessibility, perceived performance and perceived value, thus supporting hypothesis H9.

ii) The mode of transport moderates the relationship between transport accessibility and tourist satisfaction with road transport services at the destination.

- Using mass transport as the reference group, the effect of transport accessibility on tourist satisfaction is decreasing between tourists in the mass transport group and those in the hired vehicles group and the effect of transport accessibility on tourist satisfaction is further decreasing between tourists in the mass transport group and those in the self- driven vehicles group, showing an accelerating effect.

- Using hired vehicles as the reference group, the effect of transport accessibility on tourist satisfaction is decreasing between tourists in the hired vehicles group and those in the self driven vehicles group and the effect of transport accessibility on tourist satisfaction is increasing between tourists in the hired vehicles group and those in the mass transport group, showing de-accelerating effect.

iii) The mode of transport does not moderate the relationship between perceived performance and tourist satisfaction with road transport services at the destination.

iv)The mode of transport moderates the relationship between perceived value and tourist satisfaction with road transport services at the destination.

- Using mass transport as the reference group, the effect of perceived value on tourist satisfaction is decreasing between tourists in the mass transport group, and those in the hired vehicles group and the effect of perceived value on tourist satisfaction is further decreasing between tourists in the mass transport group and those in the self- driven vehicles group, showing an accelerating effect.
- Using hired vehicles as the reference group, the effect of perceived value on tourist satisfaction is increasing between tourists in the hired vehicles group and those in the self-driven vehicles group, and the effect of perceived value on tourist satisfaction is further increasing between tourists in the hired vehicles group and those in the mass transport group, showing an accelerating effect.

6.9 SUMMARY

The analysis and results of moderation analysis show that mode of transport moderates the relationship between transport accessibility and tourist satisfaction with road transport services at the destination, and also between perceived value and tourist satisfaction with road transport services at the destination, but does not moderate the relationship between perceived performance and tourist satisfaction with road transport services at the destination.

CHAPTER 7

ANALYSIS AND RESULTS- IMPORTANCE SATISFACTION ANALYSIS

CHAPTER 7

ANALYSIS AND RESULTS-IMPORTANCE SATISFACTION ANALYSIS

This chapter presents the analysis and results of **Objective 4:** To examine tourists' perception of services delivered by transport service providers in terms of importance attached to the service attributes and satisfaction derived

7.1 INTRODUCTION

The fourth objective of this study is to examine tourists' perception of services delivered by transport service providers in terms of importance attached to the service attributes and satisfaction derived is analysed using Importance-Satisfaction Analysis and Three-factor theory (Matzler et al.,2004) and Kano's theory of customer satisfaction.

7.2 IMPORTANCE-SATISFACTION ANALYSIS

The application of Importance-Satisfaction Analysis to transportation services provided by different transport operators for tourism requires tourists' evaluation of the importance of and satisfaction with the salient service quality attributes. The quality of the transportation services is one of the key factors affecting the willingness of tourists to use the different modes of transport during their visit. Tourists are an integral part of the service process and the extent, to which service performance matches tourists' expectations, influences the degree which they feel satisfied.

Zeithaml (1981) stated that services' unique characteristics of intangibility, non-standardisation and inseparability lead them to be more difficult to evaluate than goods. Customers assess service quality by comparing what they want or expect to what they actually get or perceive they are getting (Berry et al., 1988). Organisations offering services which are highly interactive, labour intensive and performed in multiple locations are more vulnerable to service performance gap (Berry et al., 1988), and therefore, it is essential to measure the perception and expectation that customers have of the service quality. Improving service quality through proper evaluation of the

importance of and satisfaction with the salient service quality attributes is necessary to maintain market share and increase profitability.

After identifying service attributes from the Importance-Satisfaction Analysis, the attributes are analysed applying the three-factor theory (Matzler et al.,2004), in which service attributes can be classified into three groups as basic factors, performance factors, and excitement factors. The three-factor theory has its origin in Kano's five-factor theory of customer satisfaction, which classifies product attributes based on how they are perceived by the customer and their effect on customer satisfaction and accordingly classifies customer preferences into five categories as Attractive, One-Dimensional, Must-be, Indifferent and Reverse (Kano et al.,1984). The three-factor theory is used to address the non-linear and asymmetric effects of individual attribute satisfaction on overall satisfaction (Matzler et al., 2004).

The three-factor theory is adopted in the transit riders satisfaction studies such as (Cao and Cao, 2017; Chen Zhang et al., 2017). According to Kano et al. (1984), understanding the functional requirements of a product attribute in addition to the satisfaction rating could reveal the origin of satisfaction as well as the features or attributes that a company should focus on in order to be competitive, increase customer satisfaction or differentiate itself in the marketplace (cited in Gregory and Parsa, 2013).

7.3 SERVICE QUALITY ATTRIBUTES

The first step in application of Importance-Satisfaction Analysis involves generating a fairly comprehensive list of salient attributes that are relevant to the situation being examined (Lee Graf et al., 1992). For the purpose of analysis, the attributes of transit service quality were identified through a review of the literature on transport and tourism. In most of these studies, the main service aspects characterizing a transit service include service frequency , on-time performance, service provision, information provision, value for cost / price, personnel behaviour, vehicles (physical conditions of vehicles and infrastructure), comfort , cleanliness, safety and security, terminals and stops (Andriotis, 2008; Arasli, 2014; Castillo and Benitez, 2013; Chi and Qu, 2008; Dell Corte et al., 2015; Eboli and Mazulla, 2007, 2011; Felleson & Friman, 2008; Guirao, 2016;, Hough and Hassanien, 2010; Kinsella and Caulfield, 2011; Lai and

Chen, 2011; Le-Klahn and Hall, 2014; Mekoth, 1997; Nwachukwu, 2014; Redman, 2013;Transportation Research Board, 1999, 2004; Tyrinopoulos and Antoniou, 2008; Kahtani et al.,2011).

7.4 MEASUREMENT ITEMS OF SERVICE QUALITY ATTRIBUTES

Several service quality attributes were identified for the study. These attributes were grouped on the basis of modes used by the tourists.

7.4. A Attributes of transport services rated for all modes used by tourists.

Table 7.1: List and coding of Attributes of transport services rated for all modes

Coding	Attributes
A1	The affordability of my trip.
A2	The value for the cost of my trip.
A3	Fair price of my trip.
A4	Ease of paying the fare.
A5	The consistency of fare structure.
A6	Personnel is friendly.
A7	Courteous employees.
A8	Quick services from personnel.
A9	Vehicles are safe.
A10	Vehicles are well maintained.
A11	Cleanliness of Vehicles.
A12	Safety from crime on the vehicle.

Source: Researcher's compilation

7.4. B Attributes of transport services rated for the modes- Private buses, Cabs, Motor-cycle taxi (Pilot) and Auto-rickshaw

Table 7.2: List and coding of Attributes of transport services rated for the modes- Private buses, Cabs, Motor-cycle taxi (Pilot) and Auto-rickshaw

Coding	Attributes
B1	The availability of schedule /information at stops.
B2	Staff are able to provide travel information.
B3	Personnel is polite and friendly while communicating with passengers.
B4	Drivers take care of passengers when they get on / off the vehicles.
B5	Drivers are competent.
B6	The smoothness of ride and stops.
B7	The vehicles are travelling at safe speed.

Source: Researcher's compilation

7.4. C Attributes of transport services rated for the modes- Local bus transport or sightseeing buses.

Table 7.3: List and coding of Attributes of transport services rated for the modes- Local bus transport or sightseeing buses.

Coding	Attributes
C1	Frequent services, so that wait times are short.
C2	The frequency of service on Saturday and Sundays.
C3	Reliable – come on time and reaches on time.
C4	The hours of services available during weekdays.
C5	Complaint handling system.
C6	Clear and timely announcements at stops.
C7	Explanation and announcements of delays.
C8	Route and Direction information visible on vehicles.
C9	The cost of making transfers.
C10	Noise on the vehicles is not too loud.
C11	Air conditioning is very comfortable.
C12	No Graffiti (scribbling) on vehicles.
C13	Availability of seats.
C14	Temperature and humidity on vehicles (Not hot/cold).
C15	Vehicles are not overcrowded.
C16	Freedom from the nuisance behaviour of other riders on the vehicle.
C17	Comfort while waiting at stops.
C18	The availability of shelter and benches at stops.
C19	Having stops near the destination.
C20	The physical conditions of stops.
C21	Cleanliness of stops.
C22	Safety from crime at stops.
C23	The availability of schedule / maps at stops.
C24	The absence of graffiti (scribbling) at stops.

Source: Researcher's compilation

Importance ratings were obtained by asking the respondents to rate the items of the service quality attributes listed in the Tables no 7.1 to 7.3 in their order of importance using a five-point scale with "1" =not at all important, "2"= slightly important, "3"= somewhat important, "4"= very important and "5"=extremely important. Satisfaction ratings were obtained by asking the respondents to rank the same using a five-point scale with "1" =not at all satisfied, "2"= slightly satisfied, "3"= somewhat satisfied, "4"= very satisfied and "5"=extremely satisfied.

7.5 DESCRIPTIVE STATISTICS

Using the statistical software SPSS version 22.0, the mean value and standard deviation of each attribute were examined.

Table 7.4: Descriptive Statistics for All Attributes

			Importance		Satisfaction	
Coding	Attributes	N	Mean	Std. Deviation	Mean	Std. Deviation
A1	The value for cost of my trip.	606	4.19	.693	3.65	1.006
A2	Fair price of my trip.	606	4.32	.748	3.66	.976
A3	The affordability of my trip.	606	4.21	.751	3.71	.957
A4	Ease of paying fare.	606	4.14	.783	3.92	1.041
A5	Fare structure is consistent.	606	4.13	.787	3.67	.904
A6	Personnel are friendly	606	4.23	.838	4.10	.845
A7	Courteous employees.	606	4.26	.925	3.99	.901
A8	Quick services from personnel.	606	4.29	.814	3.88	.863
A9	Vehicles are safe.	606	4.41	.723	3.79	.894
A10	Vehicles are well maintained.	606	4.32	.770	3.66	1.005
A11	Cleanliness of Vehicles.	606	4.27	.848	3.76	.967
A12	Safety from crime on vehicle.	606	4.74	.560	4.55	.788
B1	The availability of schedule /information at stops.	260	4.32	.721	3.42	.961
B2	Staff is able to provide travel information.	260	4.23	1.015	3.82	1.132
B3	Personnel is polite and friendly while communicating with passengers.	260	4.25	.963	4.09	.996
B4	Drivers take care of passengers when they get on / off the vehicles.	260	4.49	.683	4.06	.890
B5	Drivers are competent.	260	4.53	.572	3.90	.967
B6	The smoothness of ride and stops.	260	4.35	.799	3.95	.904

B7	The vehicles are travelling at safe speed.	260	4.48	.706	3.81	1.205
C1	Frequent services, so that wait times are short.	181	4.13	.667	3.68	.959
C2	Frequency of service on Saturday and Sundays.	181	3.86	.895	3.60	.993
C3	Reliable – comes on time and reaches on time	181	4.25	.747	3.92	.960
C4	The hours of services available during weekdays.	181	3.98	.836	3.56	.975
C5	Complaint handling system.	181	4.14	.622	3.70	.967
C6	Clear and timely announcements at stops	181	4.43	.739	3.50	1.078
C7	Explanation and announcements of delays.	181	4.30	.776	3.55	1.137
C8	Route and Direction information visible on vehicles.	181	4.18	.932	3.35	1.148
C9	The cost of making transfers.	181	3.72	.775	3.53	.834
C10	Noise on the vehicles is not too loud.	181	3.92	.997	3.80	.987
C11	Air conditioning is very comfortable.	181	4.15	.918	3.03	1.211
C12	No Graffiti (scribbling) on vehicles.	181	3.76	1.056	3.82	1.041
C13	Availability of seats.	181	4.32	.828	3.81	1.006
C14	Temperature and humidity on vehicles (Not hot/cold).	181	4.26	.792	3.24	1.255
C15	Vehicles are not overcrowded.	181	4.18	.806	3.71	1.052
C16	Freedom from the nuisance behaviour of other riders on the vehicle.	181	4.22	.939	3.82	.967
C17	Comfort while waiting at stops.	181	4.02	.760	3.28	1.179

C18	The availability of shelter and benches at stops.	181	4.01	.837	3.11	1.125
C19	Having stops near destination.	181	4.16	.776	3.57	1.007
C20	The physical conditions of stops.	181	4.02	.853	3.36	1.011
C21	Cleanliness of stops.	181	4.31	.764	3.33	1.049
C22	Safety from crime at stops.	181	4.66	.550	4.25	.900
C23	The availability of schedule / maps at stops.	181	3.99	.703	2.72	1.039
C24	Absence of graffiti (scribbling) at stops.	181	3.87	.869	3.69	.904

Source: Researcher's computations

7.6 IMPORTANCE-SATISFACTION ANALYSIS GRID

The Importance-Satisfaction Analysis is carried out to identify the attributes influencing tourist satisfaction with respect to the service attributes of the transport system. Mean values are computed for the importance and satisfaction scores associated with each attribute as applicable for all the modes of transport and plotted on the importance satisfaction graph. For creating quadrants Matrilla and James (1977) recommended that Median values as a measure of central tendency are theoretically preferable to means because a true interval scale may not exist. Accordingly, the median values were used to split the axes.

The Importance-Satisfaction Analysis model is divided into four quadrants, with Satisfaction on the y-axis and Importance on the x-axis. The four-quadrant Importance-Satisfaction Analysis matrix is shown in Figure 7.1

- **Quadrant I** is labelled "Keep up the Good Work," with high importance/high performance (satisfaction), which indicates that the firm has been performing well to gain competitive advantage.
- **Quadrant II** is labelled "Concentrate Here," with high importance/low performance (satisfaction), indicating that the firm has been performing poorly and requires improvement to be a top priority.

- **Quadrant III** is labelled "Low Priority," with low importance/low performance (satisfaction). Any attributes falling into this quadrant are non-important and pose no threat to organizations. Customers do not perceive this feature as important.
- **Quadrant IV** is labelled "Possible Overkill," with low importance/high performance (satisfaction), indicating that customers are satisfied with the performance, but the specific attribute is relatively non-important.

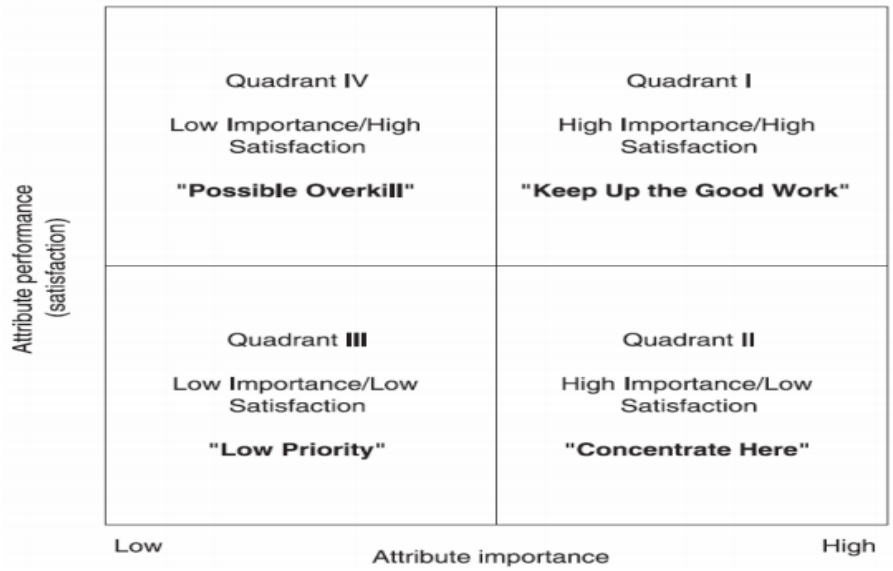


Figure No: 7.1: Importance-Satisfaction Analysis Grid

Source: K. Matzler et al. (2004)

After identifying the attributes by applying the importance-satisfaction grid they are classified into factors according to the Three-factor theory viz. Basic, Performance, and Excitement Factors (Matzler et al., 2004) of transit services for further analysis as discussed below:

1) **Basic factors**: Basic factors (dissatisfiers) are minimum requirements that cause dissatisfaction if not fulfilled but do not lead to customer satisfaction if fulfilled or exceeded. Plotted in Quadrant II "Concentrate Here" with high importance/low performance (satisfaction), these are the must be quality attributes.
2) **Excitement factors**: Excitement factors (satisfiers) are the factors that increase customer satisfaction if delivered but do not cause dissatisfaction if they are not

delivered. Plotted in Quadrant IV "Possible Overkill," with low importance/high performance (satisfaction), these are the attributes of attractive quality.

3) **Performance Factors:** Performance factors lead to satisfaction if performance is high and to dissatisfaction, if performance is low. Plotted in Quadrant I "Keep up the Good Work," with high importance/high performance (satisfaction), are key performance factors and in Quadrant III "Low Priority," with low importance/low performance (satisfaction) are unimportant performance factors. These are one-dimensional quality attributes.

7.7 DATA ANALYSIS

The mean values of the service quality attributes for the different modes of transport in relation to importance and satisfaction are presented in tabular form and then plotted on the importance satisfaction graph. In the Graph**,** the X-axis represents the importance score that attribute had to the respondents in choosing and using that mode of transport. The Y-axis represents the perception of satisfaction scores relating to a tourist's experience of a particular mode of transport used. Importance-Satisfaction grid quadrants were created using median values.

7.7.1 All Modes: Mean values of importance and satisfaction for the attributes common for all the modes rated by the respondents.

Table 7.5: Mean Value of Importance and Satisfaction of Tourists' Perception of Attributes Common to All the Modes

Label	**Attributes**	Mean Importance	Mean Satisfaction
A1	The value for the cost of my trip.	4.20	3.65
A2	Fair price of my trip.	4.33	3.66
A3	The affordability of my trip.	4.21	3.72
A4	Ease of paying the fare.	4.14	3.92
A5	Fare structure is consistent.	4.13	3.67
A6	Personnel are friendly	4.23	4.10
A7	Courteous employees.	4.26	3.99
A8	Quick services from personnel.	4.29	3.88
A9	Vehicles are safe.	4.41	3.79
A10	Vehicles are well maintained.	4.32	3.66
A11	Cleanliness of Vehicles.	4.27	3.76
A12	Safety from crime on the vehicle.	4.74	4.55

Source: Researcher's computations

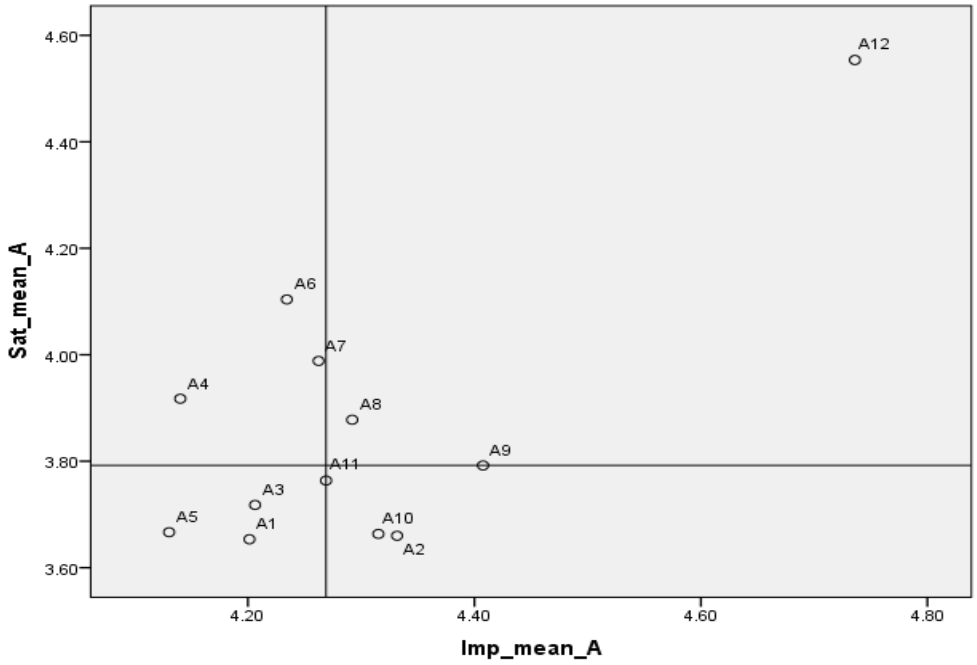


Figure 7.2: Ratings Of Tourists' Perception Of Attributes Common To All The Modes.

Source: Researcher's model

Figure 7.2 is an importance and satisfaction grid showing the ratings of tourists' perceptions of all the modes. After plotting on the graph, the attributes appeared on the grid as follows:

- Quick services from personnel (A8) and safety from crime on the vehicle (A12) are plotted in Quadrant I (Keep up the Good Work).
- Fair price of my trip (A2) and vehicles are well maintained (A10) are plotted in Quadrant II (Concentrate here).
- The value for the cost of my trip(A1); the affordability of my trip (A3) and fare structure is consistent (A5) are plotted in Quadrant III (Low Priority)
- Ease of paying the fare(A4) and personnel are friendly (A6) are plotted in Quadrant IV (Possible Overkill)

Fair price of the trip and vehicles are well maintained are the service attributes which need improvement for satisfying tourists. Transport service providers should concentrate on the performance of these attributes.

7.7.2 Mass transport Services: Mean values of importance and satisfaction for the attributes of Mass transport services rated by the respondents.

Table 7.6: Mean Values of Importance and Satisfaction of Tourists' Perception of Mass Transport Vehicles

Label	Attributes	Mean Importance	Mean Satisfaction
A1	The value for the cost of my trip.	4.15	3.70
A2	Fair price of my trip.	4.23	3.69
A3	The affordability of my trip.	4.26	3.68
A4	Ease of paying the fare.	4.06	3.84
A5	Fare structure is consistent.	4.03	3.68
A6	Personnel are friendly.	4.43	4.17
A7	Courteous employees.	4.23	4.08
A8	Quick services from personnel.	4.28	4.06
A9	Vehicles are safe.	4.44	3.92
A10	Vehicles are well maintained.	4.43	3.94
A11	Cleanliness of Vehicles.	4.29	4.04
A12	Safety from crime on the vehicle.	4.75	4.58
B1	The availability of schedule /information at stops	4.05	2.73
B2	Staff is able to provide travel information.	3.50	2.89
B3	Personnel is polite and friendly while communicating with passengers.	4.05	3.45
B4	Drivers take care of passengers when they get on / off the vehicles.	4.66	3.93
B5	Drivers are competent.	4.27	3.98
B6	The smoothness of ride and stops.	4.30	3.91
B7	The vehicles are travelling at safe speed.	4.25	3.59
C1	Frequent services, so that wait times are short.	4.13	3.68
C2	The frequency of service on Saturday and Sundays.	3.86	3.60
C3	Reliable – come on time and reaches on time.	4.25	3.92
C4	The hours of services available during weekdays.	3.98	3.56
C5	Complaint handling system.	4.14	3.70
C6	Clear and timely announcements at stops.	4.43	3.50
C7	Explanation and announcements of delays.	4.30	3.55
C8	Route and Direction information visible on the vehicle.	4.18	3.35
C9	The cost of making transfers.	3.72	3.53
C10	Noise on the vehicles is not too loud.	3.92	3.80
C11	Air conditioning is very comfortable.	4.15	3.03
C12	No Graffiti (scribbling) on vehicles.	3.76	3.82
C13	Availability of seats.	4.32	3.81
C14	Temperature and humidity on vehicles (Not hot/cold).	4.26	3.24

C15	Vehicles are not overcrowded.	4.18	3.71
C16	Freedom from the nuisance behaviour of another rider.	4.22	3.82
C17	Comfort while waiting at stops.	4.02	3.28
C18	The availability of shelter and benches at stops.	4.01	3.11
C19	Having stops near the destination.	4.16	3.57
C20	The physical conditions of stops.	4.02	3.36
C21	Cleanliness of stops.	4.31	3.33
C22	Safety from crime at stops.	4.66	4.25
C23	The availability of schedule / maps at stops.	3.99	2.72
C24	Absence of graffiti (scribbling) at stops.	3.87	3.69

Source: Researcher's computations

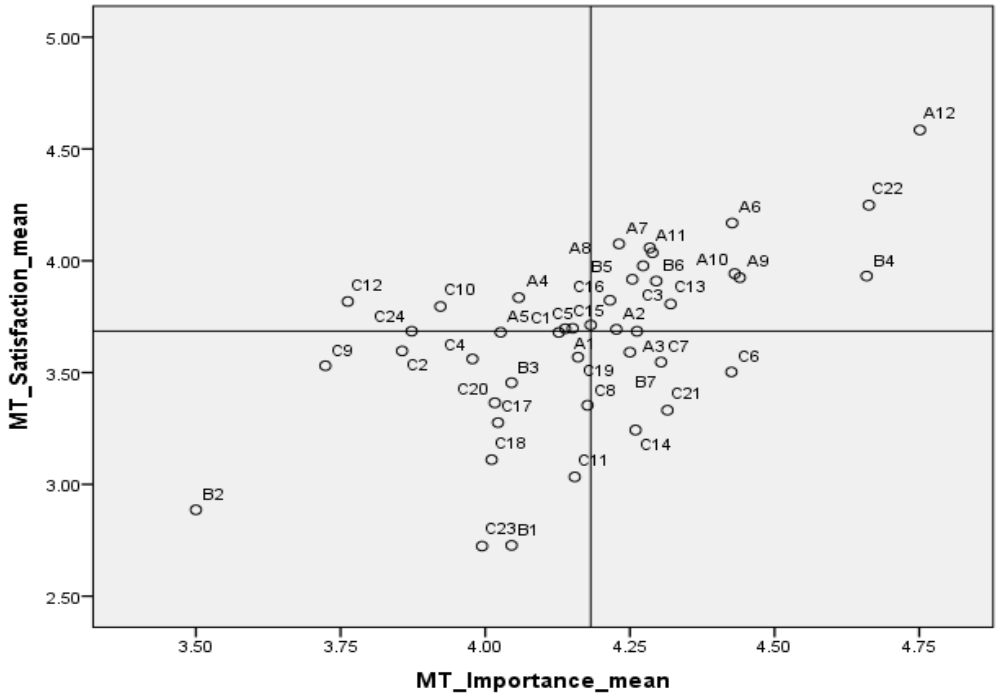


Figure 7.3: Ratings of Tourists' Perception of Mass Transport Vehicles

Source: Researcher's Model

Figure 7.3 is an importance and satisfaction grid showing the ratings of tourists' perceptions of mass transport services. After plotting on the graph, the attributes appeared on the grid as follows:

- Safety from crime on vehicle(A12); cleanliness of vehicles (A11); vehicles are well maintained(A10); vehicles are safe (A9); quick services from personnel (A8); courteous employees(A7); personnel are friendly (A6); drivers take care of

passengers when they get on / off the vehicles (B4); drivers are competent (B5); the smoothness of ride and stops (B6); availability of seats(C13); safety from crime at stops (C22) and reliable – come on time and reaches on time(C3) are plotted in Quadrant I (Keep Up the Good Work).

- Clear and timely announcements at stops (C6); explanation and announcements of delays (C7); temperature and humidity on vehicles (not hot/cold) (C14); cleanliness of stops (C21); the vehicles travelling at safe speed (B7) are plotted in Quadrant II (Concentrate here).
- The availability of schedule /information at stops (C23); staff is able to provide travel information (B2); personnel are polite and friendly while communicating with passengers (B3); frequency of service on Saturday and Sundays (C2); the hours of services available during weekdays (C4); the cost of making transfers (C9); comfort while waiting at stops (C17); the availability of shelter and benches at stops (C18); the physical conditions of stops (C20); and the availability of schedule / maps at stops (C23) are plotted in Quadrant III (Low Priority).
- Ease of paying the fare (A4); noise on the vehicles is not too loud (C10); no Graffiti (scribbling) on vehicles (C12); and freedom from the nuisance behaviour of another rider (C16) are plotted in Quadrant IV (Possible Overkill)

For mass transport services it is necessary to improve on Clear and timely announcements at stops (C6); explanation and announcements of delays (C7); temperature and humidity on vehicles (not hot/cold) (C14); cleanliness of stops (C21); the vehicles travelling at safe speed (B7) attributes which are important for tourist, and they are not satisfied with their present performance.

7.7.2.a Mass Transport- Public Bus transport (Kadamba Transport Corporation Limited) Mean values of importance and satisfaction for the attributes of Public Bus transport (Kadamba Transport Corporation Limited) rated by the respondents.

Table 7.7: Mean Values of Importance and Satisfaction of Tourists' Perception of Public Bus Transport (KTCL)

Label	**Attributes**	Mean Importance	Mean Satisfaction
A1	The value for the cost of my trip.	4.24	4.06
A2	Fair price of my trip.	4.09	3.97
A3	The affordability of my trip.	4.15	3.97
A4	Ease of paying the fare.	3.76	3.94
A5	Fare structure is consistent.	3.67	3.91
A6	Personnel are friendly.	3.97	3.94
A7	Courteous employees.	4.21	3.79
A8	Quick services from personnel.	3.91	3.73
A9	Vehicles are safe.	4.36	3.21
A10	Vehicles are well maintained.	4.30	3.03
A11	Cleanliness of Vehicles.	3.91	3.48
A12	Safety from crime on the vehicle.	4.76	4.24
C1	Frequent services, so that wait times are short.	4.21	3.55
C2	The frequency of service on Saturday and Sundays.	3.76	3.30
C3	Reliable – come on time and reaches on time.	4.30	3.58
C4	The hours of services available during weekdays.	3.97	3.13
C5	Complaint handling system.	3.88	3.06
C6	Clear and timely announcements at stops	4.45	3.33
C7	Explanation and announcements of delays.	4.24	2.79
C8	Route and Direction information visible on the vehicle.	4.48	3.18
C9	The cost of making transfers.	3.76	3.39
C10	Noise on the vehicles is not too loud.	3.85	3.33
C11	Air conditioning is very comfortable.	4.12	2.97
C12	No Graffiti (scribbling) on vehicles.	3.70	3.61
C13	Availability of seats.	4.18	3.24
C14	Temperature and humidity on vehicles (Not hot/cold).	4.03	3.00
C15	Vehicles are not overcrowded.	3.91	2.82
C16	Freedom from the nuisance behaviour of another rider.	4.52	3.27
C17	Comfort while waiting at stops.	4.15	3.03
C18	The availability of shelter and benches at stops.	3.97	3.21
C19	Having stops near the destination.	4.39	3.18
C20	The physical conditions of stops.	3.97	3.00
C21	Cleanliness of stops.	4.24	2.64
C22	Safety from crime at stops.	4.55	3.64
C23	The availability of schedule / maps at stops.	4.21	2.52
C24	Absence of graffiti (scribbling) at stops.	3.70	3.39

Source: Researcher's computations

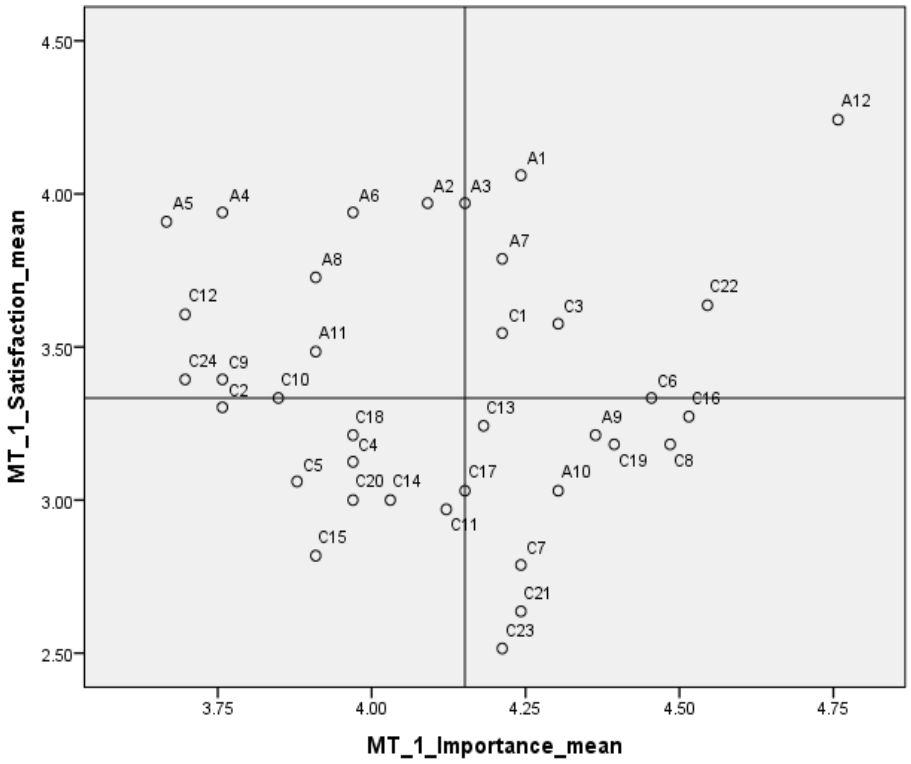


Figure 7.4: Ratings of Tourists' Perception of Public Bus Transport (Kadamba Transport Corporation Limited)

Source: Researcher's Model

Figure 7.4 is an importance and satisfaction grid showing the ratings of tourists' perceptions of Public Bus transport (Kadamba Transport Corporation Limited). After plotting on the graph, the attributes appeared on the grid as follows:

- The value for cost of my trip (A10); courteous employees (A7); safety from crime on vehicle (A12); frequent services so that wait times are short (C1); reliable – comes on time and reaches on time (C3); and safety from crime at stops (C22) are plotted in Quadrant I (Keep up the Good Work).
- Vehicles are safe (A9); vehicles are well maintained(A10); explanation and announcements of delays (C7); route and direction information visible on vehicle (C8); freedom from the nuisance behaviour of other rider 9C16); having stops near destination (C19); cleanliness of stops (C21); and the availability of schedule / maps at stops (C23) are plotted in Quadrant II (Concentrate here).
- The hours of services available during weekdays (C4); complaint handling system (C5); temperature and humidity on vehicles (not hot/cold) (C14); vehicles are not overcrowded (C15); the availability of shelter and benches at

stops (C18); and the physical conditions of stops (C20) are plotted in Quadrant III (Low Priority).

- Fair price of my trip (A2); ease of paying fare (A4); fare structure is consistent(A5); personnel are friendly(A6); quick services from personnel (A8); cleanliness of vehicles (A11); no graffiti (scribbling) on vehicles (C12); absence of graffiti (scribbling) at stops (C24); and the cost of making transfers(C9) are the attributes plotted in Quadrant IV (Possible Overkill).

Public Bus transport (Kadamba Transport Corporation Limited) needs to improve on Vehicles are safe (A9); vehicles are well maintained (A10); explanation and announcements of delays (C7); route and direction information visible on vehicle (C8); freedom from the nuisance behaviour of other rider (C16); having stops near destination (C19); cleanliness of stops (C21); and the availability of schedule / maps at stops (C23) to satisfy the tourist.

7.7.2. b Mass Transport- Private Bus transport

Mean values of importance and satisfaction for the Attributes of Private Bus transport rated by the respondents.

Table 7.8: Mean Values of Importance and Satisfaction of Tourists' Perception of Private Bus Transport

Label	**Attributes**	Mean Importance	Mean Satisfaction
A1	The value for the cost of my trip.	4.34	3.45
A2	Fair price of my trip.	4.48	3.59
A3	The affordability of my trip.	3.91	3.34
A4	Ease of paying the fare.	4.07	3.52
A5	Fare structure is consistent.	3.89	3.43
A6	Personnel are friendly.	4.43	4.09
A7	Courteous employees.	3.95	3.77
A8	Quick services from personnel.	4.23	3.80
A9	Vehicles are safe.	4.34	3.68
A10	Vehicles are well maintained.	4.18	3.64
A11	Cleanliness of Vehicles.	4.14	3.57

A12	Safety from crime on the vehicle.	4.52	4.07
B1	The availability of schedule /information at stops.	4.05	2.73
B2	Staff is able to provide travel information.	3.50	2.89
B3	Personnel is polite and friendly while communicating with passengers.	4.05	3.45
B4	Drivers take care of passengers when they get on / off the vehicles.	4.66	3.93
B5	Drivers are competent.	4.27	3.98
B6	The smoothness of ride and stops.	4.30	3.91
B7	The vehicles are travelling at safe speed.	4.25	3.59

Source: Researcher's computations

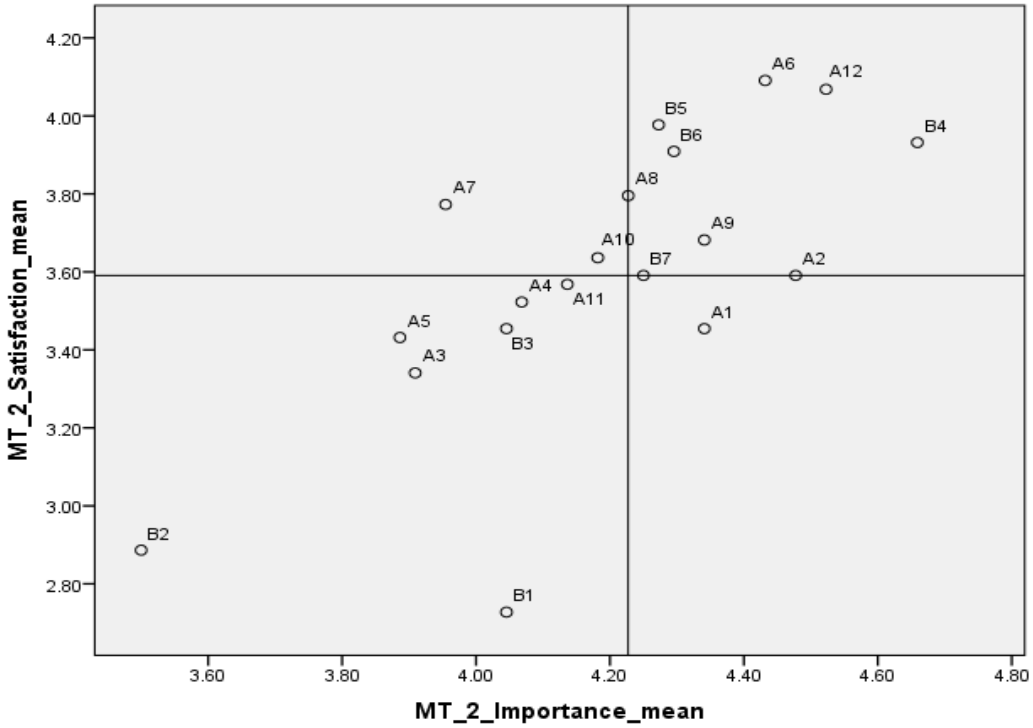


Figure 7.5: Ratings of Tourists' Perception of Private Bus Transport
Source: Researcher's Model

Figure 7.5 is an importance and satisfaction grid showing the ratings of tourists' perceptions of Private Bus transport. After plotting on the graph, the attributes appeared on the grid as follows:

- Personnel are friendly(A6); Vehicles are safe (A9); safety from crime on vehicle(A12); drivers take care of passengers when they get on / off the

vehicles(B4); drivers are competent (B5); the smoothness of ride and stops(B6) are plotted in the Quadrant I (Keep up the good work).

- The value for the cost of my trip (A10) is the only attribute plotted in the Quadrant II (Concentrate here).
- The affordability of my trip(A3); ease of paying the fare(A4); fare structure is consistent(A5); the availability of schedule /information at stops (C23); and the staff is able to provide travel information (B2) are plotted in the Quadrant III (Low Priority).
- Courteous employees (A7) and vehicles are well maintained (A10) are plotted in the Quadrant IV (Possible Overkill).

For private bus transport, the value for the cost of my trip is the attribute where tourists are not satisfied and needs improvement.

7.7.2. c Mass Transport – Sightseeing Vehicles Arranged By Hotels, Tour Operators

Mean values of importance and satisfaction for the attributes of Sightseeing vehicles arranged by hotels, tour operators rated by the respondents.

Table 7.9: Mean Values of Importance and Satisfaction of Tourists' Perception of Sightseeing Vehicles Arranged By Hotels, Tour Operators

Label	**Attributes**	Mean Importance	Mean Satisfaction
A1	The value for the cost of my trip.	4.15	3.56
A2	Fair price of my trip.	4.29	3.42
A3	The affordability of my trip.	4.27	3.52
A4	Ease of paying the fare.	4.02	3.63
A5	Fare structure is consistent.	4.21	3.77
A6	Personnel are friendly	4.31	4.02
A7	Courteous employees.	4.10	4.33
A8	Quick services from personnel.	4.31	4.02
A9	Vehicles are safe.	4.42	3.85
A10	Vehicles are well maintained.	4.42	3.96
A11	Cleanliness of Vehicles.	4.19	3.94

A12	Safety from crime on the vehicle.	4.52	4.54
C1	Frequent services, so that wait times are short.	4.10	3.67
C2	The frequency of service on Saturday and Sundays.	3.90	3.77
C3	Reliable – come on time and reaches on time	3.85	3.63
C4	The hours of services available during weekdays.	3.98	3.60
C5	Complaint handling system.	4.13	3.81
C6	Clear and timely announcements at stops.	4.25	3.48
C7	Explanation and announcements of delays.	4.17	3.60
C8	Route and Direction information visible on the vehicle	4.21	3.52
C9	The cost of making transfers.	3.88	3.46
C10	Noise on the vehicles is not too loud.	3.71	3.79
C11	Air conditioning is very comfortable.	3.96	3.13
C12	No Graffiti (scribbling) on vehicles.	3.46	3.50
C13	Availability of seats.	4.19	3.73
C14	Temperature and humidity on vehicles (Not hot/cold).	4.10	3.25
C15	Vehicles are not overcrowded.	4.15	3.50
C16	Freedom from the nuisance behaviour of another rider.	4.02	3.71
C17	Comfort while waiting at stops.	3.94	3.42
C18	The availability of shelter and benches at stops.	3.83	3.19
C19	Having stops near the destination.	4.10	3.60
C20	The physical conditions of stops.	4.00	3.38
C21	Cleanliness of stops.	4.25	3.46
C22	Safety from crime at stops.	4.77	4.02
C23	The availability of schedule / maps at stops.	3.79	2.75
C24	Absence of graffiti (scribbling) at stops.	3.90	3.35

Source: Researcher's computations

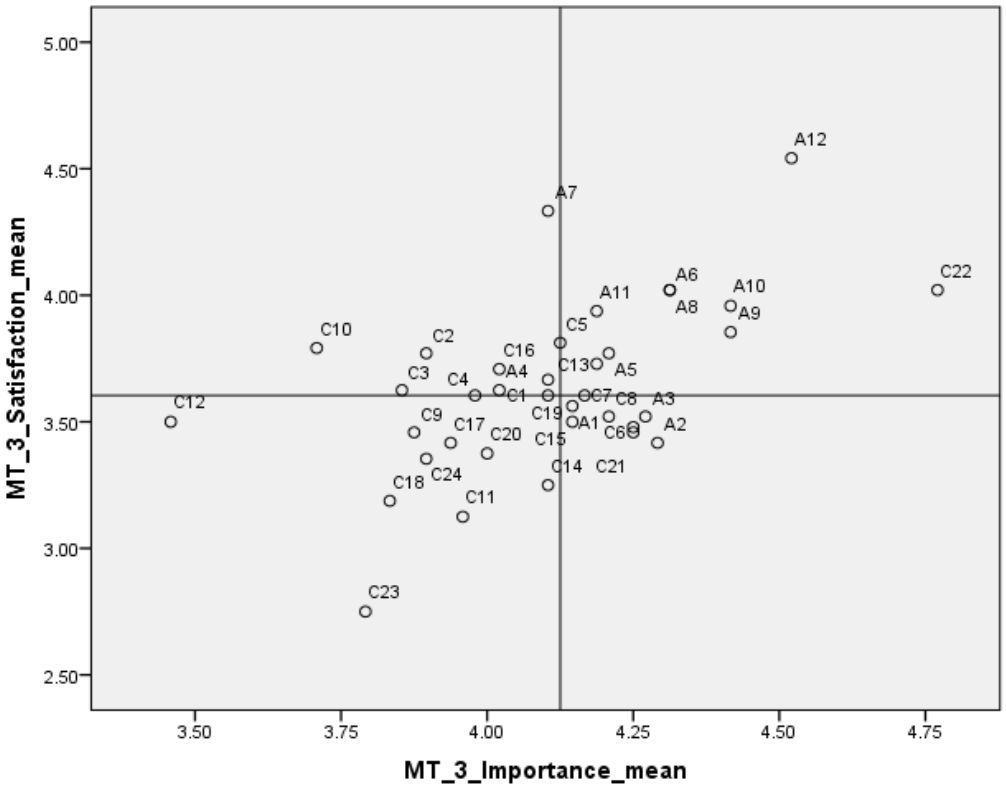


Figure 7.6: Ratings of Tourists' Perception of Sightseeing Vehicles Arranged By Hotels, Tour Operators

Source: Researcher's model

Figure 7.6 is an importance and satisfaction grid showing the ratings of tourists' perceptions of the Sightseeing vehicles arranged by hotels, tour operators. After plotting on the graph, the attributes appeared on the grid as follow:

- Personnel are friendly (A6); courteous employees (A7); quick services from personnel (A8); vehicles are safe (A9); vehicles are well maintained (A10); cleanliness of vehicles (A11); and safety from crime on vehicle (A12) are plotted in Quadrant I (Keep up the Good Work).
- Fair price of my trip (A2); the affordability of my trip(A3); clear and timely announcements at stops (C6); explanation and announcements of delays (C7); route and direction information visible on vehicle (C8); and cleanliness of stops (C21) are plotted in Quadrant II (Concentrate here).
- Frequent services, so that wait times are short (C1); reliable – come on time and reaches on time(C3); the hours of services available during weekdays (C4); the

cost of making transfers (C9); air conditioning is very comfortable (C11); no graffiti (scribbling) on vehicles (C12); the availability of shelter and benches at stops (C18); having stops near destination (C19); the physical conditions of stops (C20); the availability of schedule / maps at stops(C23); absence of graffiti (scribbling) at stops (C24); ease of paying fare (A4); and comfort while waiting at stops(C17) are plotted in Quadrant III (Low Priority)

- Noise on the vehicles is not too loud (C10) is plotted in Quadrant IV (Possible Overkill)

Tourist using Sightseeing vehicles arranged by hotels, tour operators are not satisfied with Fair price of my trip (A2); the affordability of my trip (A3); clear and timely announcements at stops (C6); explanation and announcements of delays (C7); route and direction information visible on vehicle (C8); and cleanliness of stops (C21). Improvement in these attributes may increase tourist satisfaction.

7.7.2. d Mass Transport – Government Sightseeing Vehicles

Mean values of importance and satisfaction for the Attributes of Government Sightseeing vehicles rated by the respondents.

Table 7.10: Mean Values of Importance and Satisfaction of Tourists' Perception of Government Sightseeing Vehicles

Label	**Attributes**	Mean Importance	Mean Satisfaction
A1	The value for the cost of my trip.	4.04	3.75
A2	Fair price of my trip.	4.13	3.78
A3	The affordability of my trip.	4.45	3.82
A4	Ease of paying the fare.	4.17	4.04
A5	Fare structure is consistent.	4.12	3.67
A6	Personnel are friendly	4.63	4.35
A7	Courteous employees.	4.42	4.18
A8	Quick services from personnel.	4.42	4.30
A9	Vehicles are safe.	4.52	4.30
A10	Vehicles are well maintained.	4.59	4.37
A11	Cleanliness of Vehicles.	4.53	4.45

A12	Safety from crime on the vehicle.	4.96	4.92
C1	Frequent services, so that wait times are short.	4.11	3.73
C2	The frequency of service on Saturday and Sundays.	3.87	3.61
C3	Reliable – come on time and reaches on time.	4.43	4.17
C4	The hours of services available during weekdays.	3.98	3.68
C5	Complaint handling system.	4.23	3.85
C6	Clear and timely announcements at stops.	4.50	3.57
C7	Explanation and announcements of delays.	4.39	3.77
C8	Route and Direction information visible on the vehicle.	4.06	3.33
C9	The cost of making transfers.	3.64	3.61
C10	Noise on the vehicles is not too loud.	4.05	3.95
C11	Air conditioning is very comfortable.	4.26	3.01
C12	No Graffiti (scribbling) on vehicles.	3.93	4.04
C13	Availability of seats.	4.43	4.03
C14	Temperature and humidity on vehicles (Not hot/cold).	4.41	3.32
C15	Vehicles are not overcrowded.	4.29	4.11
C16	Freedom from the nuisance behaviour of another rider.	4.21	4.06
C17	Comfort while waiting at stops.	4.02	3.29
C18	The availability of shelter and benches at stops.	4.11	3.04
C19	Having stops near the destination.	4.11	3.68
C20	The physical conditions of stops.	4.04	3.48
C21	Cleanliness of stops.	4.37	3.50
C22	Safety from crime at stops.	4.65	4.56
C23	The availability of schedule / maps at stops.	4.02	2.78
C24	Absence of graffiti (scribbling) at stops.	3.92	3.94

Source: Researcher's computations

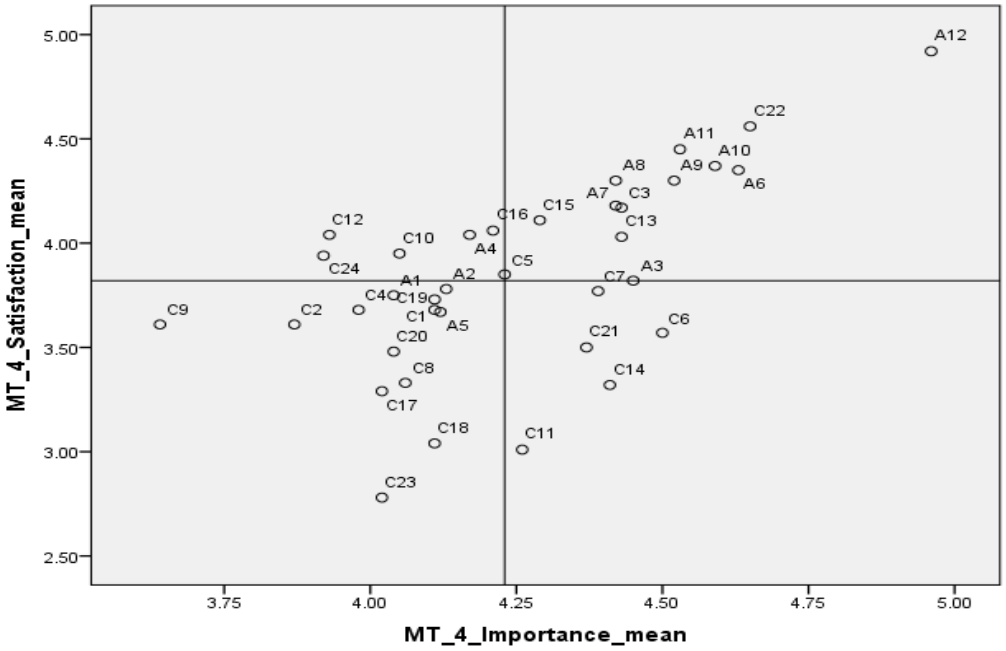


Figure 7.7: Ratings of Tourists' Perception of Government Sightseeing Vehicles

Source: Researcher's Model

Figure 7.7 is an importance and satisfaction grid showing the ratings of tourists' perceptions of Government Sightseeing vehicles. After plotting on the graph, the attributes appeared on the grid as follow:

- Personnel are friendly (A6); courteous employees (A7); quick services from personnel (A8); vehicles are safe (A9); vehicles are well maintained (A10); cleanliness of vehicles (A11); safety from crime on vehicle (A12); availability of seats (C13); vehicles are not overcrowded (C15); freedom from the nuisance behaviour of another rider (C16); safety from crime at stops (C22); and reliable – come on time and reaches on time (C3) are plotted in Quadrant I (Keep Up the Good Work).
- Complaint handling system (C5); air conditioning is very comfortable (C11); temperature and humidity on vehicles (not hot/cold) (C14); and cleanliness of stops (C21) are plotted in Quadrant II (Concentrate here).
- The value for cost of my trip (A10); frequent services, so that wait times are short (C1); frequency of service on Saturday and Sundays (C2); fare structure is consistent (A5); the hours of services available during weekdays (C4); route and direction information visible on vehicle (C8); the cost of making transfers (C9); comfort while waiting at stops (C17); the availability of shelter and benches at

stops (C18); the physical conditions of stops (C20); the availability of schedule / maps at stops (C23); and having stops near destination(C19) are plotted in Quadrant III (Low Priority)

- Ease of paying the fare (A4); noise on the vehicles is not too loud (C10); no graffiti (scribbling) on vehicles (C12); and absence of graffiti (scribbling) at stops (C24) are plotted in Quadrant IV (Possible Overkill).

Service attributes such as Complaint handling system (C5); air conditioning is very comfortable (C11); temperature and humidity on vehicles (not hot/cold) (C14); and cleanliness of stops (C21) needs attention from Government sightseeing service providers to make tourists satisfied. These attributes are important for them, but they are not satisfied with the performance.

7.7.3 Hired Vehicles: Mean values of importance and satisfaction for the attributes of Hired vehicles rated by the respondents.

Table 7.11: Mean Values of Importance and Satisfaction of Tourists' Perception of Hired Vehicles

Label	**Attributes**	Mean Importance	Mean Satisfaction
A1	The value for the cost of my trip.	4.34	3.45
A2	Fair price of my trip.	4.48	3.59
A3	The affordability of my trip.	3.91	3.34
A4	Ease of paying the fare.	4.07	3.52
A5	Fare structure is consistent.	3.89	3.43
A6	Personnel are friendly.	4.43	4.09
A7	Courteous employees.	3.95	3.77
A8	Quick services from personnel.	4.23	3.80
A9	Vehicles are safe.	4.34	3.68
A10	Vehicles are well maintained.	4.18	3.64
A11	Cleanliness of Vehicles.	4.14	3.57
A12	Safety from crime on the vehicle.	4.52	4.07
B1	The availability of schedule /information at stops.	4.05	2.73
B2	Staff is able to provide travel information.	3.50	2.89
B3	Personnel are polite and friendly while communicating with passengers.	4.05	3.45
B4	Drivers take care of passengers when they get on / off the vehicles.	4.66	3.93
B5	Drivers are competent.	4.27	3.98
B6	The smoothness of ride and stops.	4.30	3.91
B7	The vehicles are travelling at safe speed.	4.25	3.59

Source: Researcher's computations.

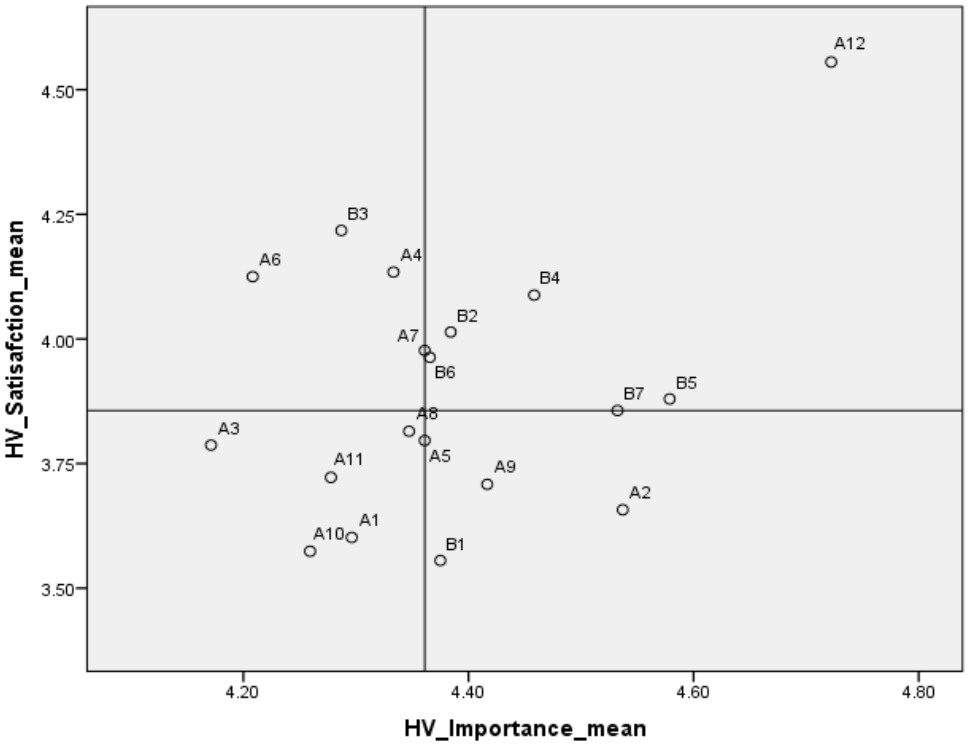


Figure 7.8: Ratings of Tourists' Perception of Hired Vehicles
Source: Researcher's Model

Figure 7.8 is an importance and satisfaction grid showing the ratings of tourists' perceptions of Hired vehicles. After plotting on the graph, the attributes appeared on the grid as follow:

- Safety from crime on the vehicle (A12); drivers take care of passengers when they get on / off the vehicles (B4), and drivers are competent (B5) are plotted in Quadrant I (Keep up the Good Work).
- Fair price of my trip (A2); vehicles are safe (A9); and the availability of schedule /information at stops (C23) are plotted in Quadrant II (Concentrate here).
- The value for the cost of my trip (A10); the affordability of my trip (A3); vehicles are well maintained (A10); and cleanliness of vehicles (A11) are plotted in Quadrant III (Low Priority)
- Ease of paying the fare (A4); personnel are friendly (A6); personnel are polite and friendly while communicating with passengers (B3) are plotted in Quadrant IV (Possible Overkill)

Service attributes such as Fair price of my trip (A2); vehicles are safe (A9), and the availability of schedule /information at stops (C23) need the attention of transport service providers as tourists rate them as important but they are not satisfied with the attributes.

7.7.3. a Hired Vehicles- Taxi or Cab

Mean values of importance and satisfaction for the attributes of Taxi or Cab rated by the respondents.

Table 7.12: Mean Values of Importance and Satisfaction of Tourists' Perception of Taxi/ Cab

Label	**Attributes**	Mean Importance	Mean Satisfaction
A1	The value for the cost of my trip.	4.29	3.52
A2	Fair price of my trip.	4.42	3.51
A3	The affordability of my trip.	4.15	3.69
A4	Ease of paying the fare.	4.20	3.85
A5	Fare structure is consistent.	4.20	3.63
A6	Personnel are friendly.	4.25	4.11
A7	Courteous employees.	4.32	3.90
A8	Quick services from personnel.	4.23	3.70
A9	Vehicles are safe.	4.37	3.61
A10	Vehicles are well maintained.	4.18	3.41
A11	Cleanliness of Vehicles.	4.16	3.63
A12	Safety from crime on the vehicle.	4.67	4.46
B1	The availability of schedule /information at stops.	4.24	3.47
B2	Staff is able to provide travel information.	4.29	3.84
B3	Personnel are polite and friendly while communicating with passengers.	4.15	4.02
B4	Drivers take care of passengers when they get on / off the vehicles.	4.38	3.85
B5	Drivers are competent.	4.51	3.76
B6	The smoothness of ride and stops.	4.20	3.72
B7	The vehicles are travelling at safe speed.	4.41	3.50

Source: Researcher's computations.

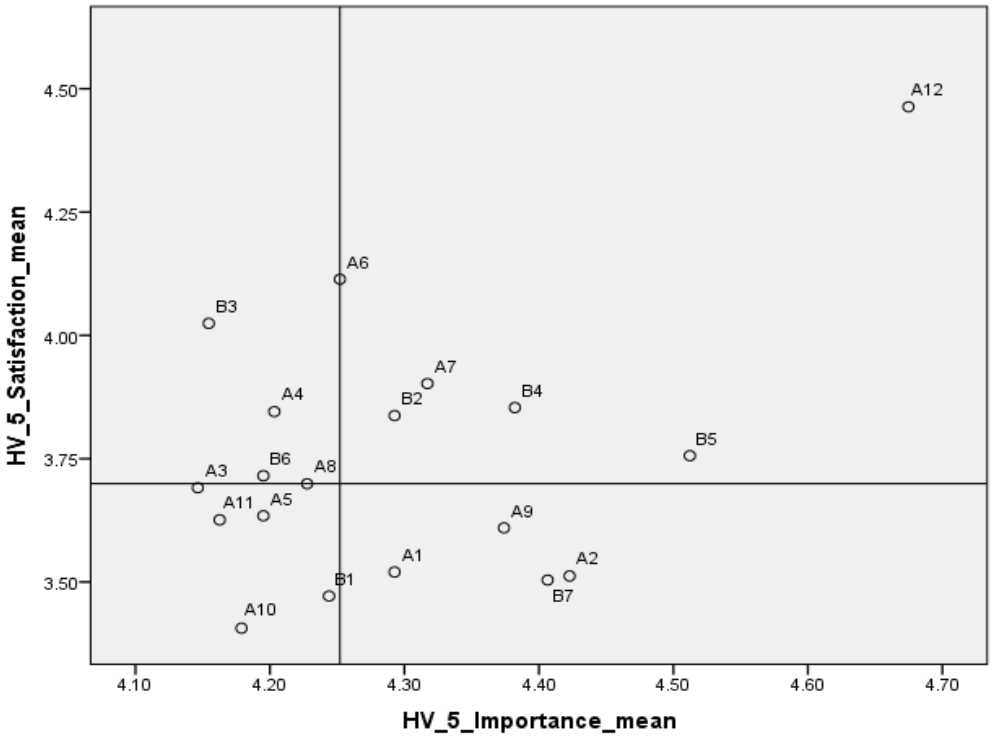


Figure 7.9: Ratings of Tourists' Perception of Taxi/ Cab

Source: Researcher's Model

Figure 7.9 is an importance and satisfaction grid showing the ratings of tourists' perceptions of taxi/cab. After plotting on the graph, the attributes appeared on the grid as follows:

- Courteous employees (A7); safety from crime on vehicle (A12); staff is able to provide travel information (B2); drivers take care of passengers when they get on / off the vehicles (B4); and drivers are competent (B5) are plotted in Quadrant I (Keep up the Good Work).
- The value for the cost of my trip (A10); the fair price of my trip (A2); and vehicles are safe (A9) are plotted in Quadrant II (Concentrate here).
- The fare structure is consistent (A5); vehicles are well maintained (A10), and Cleanliness of vehicles (A11) are plotted in Quadrant III (Low Priority)
- The affordability of my trip (A3); ease of paying the fare (A4); personnel are polite and friendly while communicating with passengers (B3); and the smoothness of ride and stops (B6) are plotted in Quadrant IV (Possible Overkill)

Service attributes such as the value for the cost of my trip (A10); the fair price of my trip (A2); and vehicles are safe (A9) needs the attention of taxi or cab owners to satisfy the tourists'. These are important attributes, but they are not satisfied.

7.7.3. b Hired Vehicles- Motorcycle taxi (Pilot)

Mean values of importance and satisfaction for the attributes of Motorcycle Taxi (Pilot) rated by the respondents.

Table 7.13: Mean Values of Importance and Satisfaction of Tourists' Perception of Motorcycle Taxi (Pilot)

Label	**Attributes**	Mean Importance	Mean Satisfaction
A1	The value for the cost of my trip.	3.97	3.45
A2	Fair price of my trip.	4.58	4.03
A3	The affordability of my trip.	4.06	4.06
A4	Ease of paying the fare.	4.42	4.87
A5	Fare structure is consistent.	4.52	4.03
A6	Personnel are friendly.	4.13	4.23
A7	Courteous employees.	4.55	4.13
A8	Quick services from personnel.	4.65	4.13
A9	Vehicles are safe.	4.71	3.90
A10	Vehicles are well maintained.	4.55	3.87
A11	Cleanliness of Vehicles.	4.74	3.90
A12	Safety from crime on the vehicle.	4.97	4.94
B1	The availability of schedule /information at stops.	4.65	3.84
B2	Staff is able to provide travel information.	4.58	4.52
B3	Personnel is polite and friendly while communicating with passengers.	4.58	4.71
B4	Drivers take care of passengers when they get on / off the vehicles.	4.68	4.55
B5	Drivers are competent.	4.65	3.94
B6	The smoothness of ride and stops.	4.77	4.42
B7	The vehicles are travelling at safe speed.	4.71	4.48

Source: Researcher's computations.

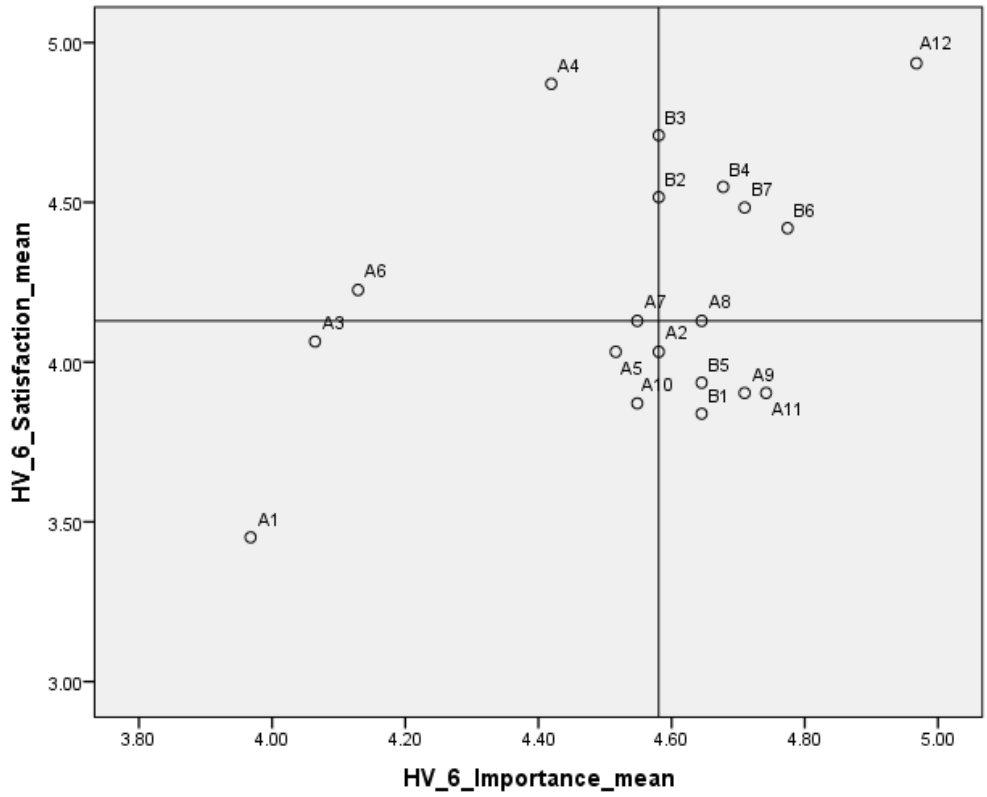


Figure 7.10: Ratings of Tourists' Perception of Motorcycle Taxi (Pilot)

Source: Researcher's Model

Figure 7.10 is an importance and satisfaction grid showing the ratings of tourists' perceptions of Motor-cycle taxi. After plotting on the graph, the attributes appeared on the grid as follow:

- Safety from crime on the vehicle (A12); drivers take care of passengers when they get on / off the vehicles (B4); the smoothness of ride and stops (B6); and the vehicles travelling at safe speed (B7) are plotted in Quadrant I (Keep Up the Good Work).
- Vehicles are safe (A9); vehicles are well maintained (A10); cleanliness of vehicles (A11); the availability of schedule /information at stops (C23); and drivers are competent (B5) are plotted in Quadrant II (Concentrate here).
- The value for the cost of my trip(A10); the affordability of my trip (A3); fare structure is consistent(A5); and vehicles are well maintained (A10) are plotted in Quadrant III (Low Priority)
- Ease of paying the fare(A4) and personnel are friendly (A6) are plotted in Quadrant IV (Possible Overkill)

Vehicles are safe (A9); vehicles are well maintained (A10); cleanliness of vehicles (A11); the availability of schedule /information at stops (C23); and drivers are competent (B5) are the service attributes of motorcycle taxi which are important for tourists' but they are not satisfied with the performance.

7.7.3. c Hired Vehicles- Auto-rickshaw

Mean values of importance and satisfaction for the attributes of Auto-rickshaw rated by the respondents.

Table 7.14: Mean Values of Importance and Satisfaction of Tourists' Perception of Auto-Rickshaw

Label	**Attributes**	Mean Importance	Mean Satisfaction
A1	The value for the cost of my trip.	4.47	3.84
A2	Fair price of my trip.	4.74	3.76
A3	The affordability of my trip.	4.27	3.84
A4	Ease of paying the fare.	4.55	4.34
A5	Fare structure is consistent.	4.61	4.00
A6	Personnel are friendly.	4.16	4.10
A7	Courteous employees.	4.35	4.05
A8	Quick services from personnel.	4.44	3.89
A9	Vehicles are safe.	4.35	3.81
A10	Vehicles are well maintained.	4.27	3.76
A11	Cleanliness of Vehicles.	4.27	3.82
A12	Safety from crime on the vehicle.	4.69	4.55
B1	The availability of schedule /information at stops.	4.50	3.58
B2	Staff is able to provide travel information.	4.47	4.11
B3	Personnel is polite and friendly while communicating with passengers.	4.40	4.35
B4	Drivers take care of passengers when they get on / off the vehicles.	4.50	4.32
B5	Drivers are competent.	4.68	4.10
B6	The smoothness of ride and stops.	4.50	4.23
B7	The vehicles are travelling at safe speed.	4.69	4.24

Source: Researcher's computations.

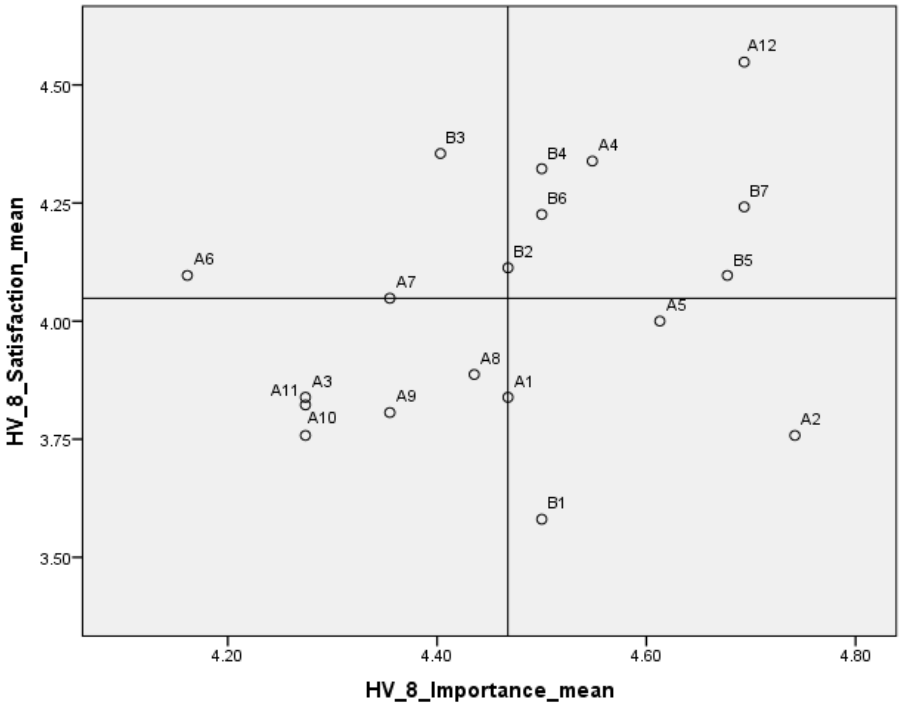


Figure 7.11: Ratings of Tourists' Perception of Auto-Rickshaw
Source: Researcher's Model

Figure 7.11 is an importance and satisfaction grid showing the ratings of tourists' perceptions of Auto-rickshaw. After plotting on the graph, the attributes appeared on the grid as follow:

- Ease of paying fare (A4); safety from crime on vehicle (A12); drivers take care of passengers when they get on / off the vehicles (B4); drivers are competent (B5) the smoothness of ride and stops(B6); and the vehicles travelling at safe speed (B7) are plotted in Quadrant I (Keep Up the Good Work).
- Fair price of my trip (A2); fare structure is consistent (A5); and the availability of schedule /information at stops (C23) are plotted in Quadrant II (Concentrate Here).
- The affordability of my trip (A3); quick services from personnel (A8); vehicles are safe (A9); vehicles are well maintained (A10), and cleanliness of vehicles (A11) are plotted in Quadrant III (Low Priority)
- Personnel are friendly (A6); and personnel are polite and friendly while communicating with passengers (B3) are plotted in Quadrant IV (Possible Overkill)

Fair price of my trip (A2); fare structure is consistent (A5); and the availability of schedule /information at stops (C23) are the attributes which need to be improved by the auto rickshaw owners.

7.7.4 Self Driven Vehicles- Rent a Bike or Rent a Car

Mean values of importance and satisfaction for the Attributes of Rent a Bike or Rent a Car rated by the respondents.

Table 7.15: Mean Values of Importance and Satisfaction of Tourists' Perception of Self-Driven Vehicles (Rent a Bike or Rent a Car)

Label	**Attributes**	Mean Importance	Mean Satisfaction
A1	The value for the cost of my trip.	4.15	3.66
A2	Fair price of my trip.	4.21	3.62
A3	The affordability of my trip.	4.18	3.67
A4	Ease of paying the fare.	4.00	3.75
A5	Fare structure is consistent.	3.97	3.48
A6	Personnel are friendly.	4.01	3.99
A7	Courteous employees.	4.18	3.88
A8	Quick services from personnel.	4.23	3.72
A9	Vehicles are safe.	4.35	3.72
A10	Vehicles are well maintained.	4.23	3.40
A11	Cleanliness of Vehicles.	4.23	3.45
A12	Safety from crime on the vehicle.	4.73	4.51

Source: Researcher's computations.

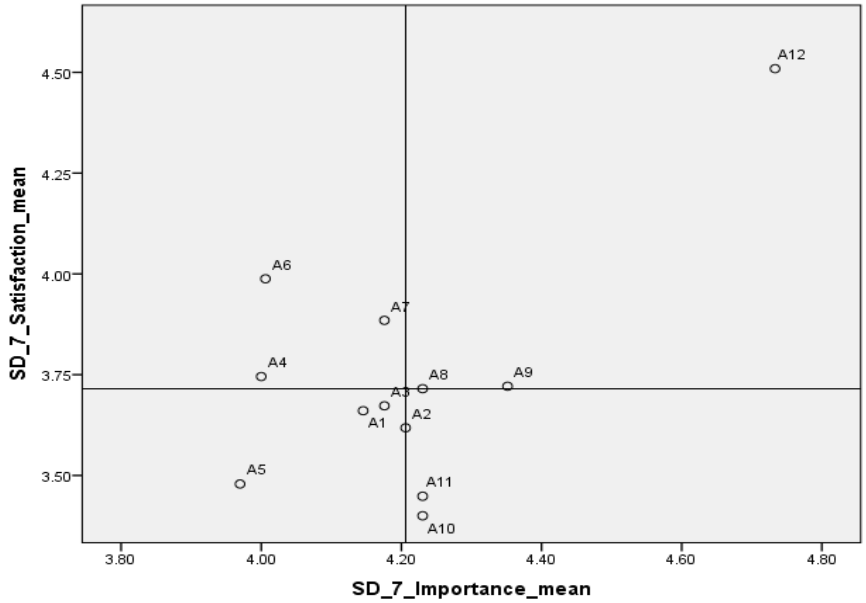


Figure 7.12: Ratings of Tourists' Perception of the Self-Driven Vehicles (Rent a Bike or Rent a Car)

Source: Researcher's Model

Figure 7.12 is an importance and satisfaction grid showing the ratings of tourists' perceptions of Rent a bike or Rent a car. After plotting on the graph, the attributes appeared on the grid as follows:

- Safety from crime on the vehicle (A12) is plotted in Quadrant I (Keep up the Good Work).
- Vehicles are well maintained (A10), and cleanliness of vehicles (A11) attributes are plotted in Quadrant II (Concentrate here).
- The fare structure is consistent (A5) is plotted in Quadrant III (Low Priority)
- Ease of paying the fare (A4); and personnel are friendly (A6) are plotted in Quadrant IV (Possible Overkill).

Service attributes such as Vehicles are well maintained (A10), and cleanliness of vehicles (A11) needs a concentration of providers as tourists' to find these attributes as important but not satisfied.

7.8 FINDINGS OF THE ANALYSIS

By applying Importance-Satisfaction Analysis service attributes which are important to the tourist and also affects their satisfaction are identified. Each quadrant helps to identify the attributes as perceived by the tourist. Quadrant analysis was carried to identify the service attributes for all the modes of transport used by the tourists during their visit at the destination. These attributes are collectively analysed for transportation services adopting three-factor theory (Matzler et al., 2004) as given below:

1) Basic factors: Plotted in Quadrant II (Concentrate here) with high importance/low performance (satisfaction), these are the must be quality attributes. Attributes plotted in the Quadrant II are

- Clear and timely announcements at stops (C6).
- Explanation and announcements of delays (C7).
- Temperature and humidity on vehicles (not hot/cold) (C14).
- Cleanliness of stops (C21).
- The vehicles travelling at safe speed (B7).
- Fair price of my trip (A2); vehicles are safe (A9).
- Vehicles are well maintained (A10).

- Route and direction information visible on vehicle (C8).
- Cleanliness of vehicles (A11).

These are basic factors of transport services and their provision is essential for tourist satisfaction.

2) Excitement factors: Plotted in Quadrant IV "Possible Overkill," with low importance/high performance (satisfaction), these are the attributes of attractive quality.

Attributes plotted in this quadrant are

- Ease of paying fare (A4).
- Personnel are friendly (A6).
- Noise on the vehicles is not too loud (C10).
- No Graffiti (scribbling) on vehicles (C12).
- Personnel are polite and friendly while communicating with passengers (B3).
- Absence of graffiti (scribbling) at stops (C24).

These are the excitement factors for transport services.

3) **Performance Factors:** These are one-dimensional quality attributes. Attributes plotted in two quadrants are considered as performance factors as under:

A) Plotted in Quadrant I "Keep up the Good Work," with high importance/high performance (satisfaction), are key performance factors and

B) Quadrant III "Low Priority," with low importance/low performance (satisfaction) are unimportant performance factors.

A) Attributes plotted in the Quadrant I are:

- Quick services from personnel (A8).
- Cleanliness of Vehicles (A11).
- Vehicles are well maintained (A10).
- Vehicles are safe (A9).
- Courteous employees (A7).
- Safety from crime on vehicle (A12).
- Personnel are friendly (A6).

- Drivers take care of passengers when they get on / off the vehicles (B4).
- Drivers are competent (B5).
- The smoothness of ride and stops (B6).
- Safety from crime at stops (C22).
- Reliable – come on time and reaches on time (C3).
- Availability of seats (C13).

These are key performance factors of transport services.

B) Attributes plotted in the Quadrant III are

- The value for cost of my trip (A1).
- The affordability of my trip (A3).
- Fare structure is consistent (A5).
- The availability of schedule / maps at stops (C23).
- The hours of services available during weekdays (C4).
- The cost of making transfers (C9).
- Comfort while waiting at stops (C17).
- The availability of shelter and benches at stops (C18).

These are unimportant performance factors of transport services.

These performance factors are necessary for tourist satisfaction; if their performance is high, tourist will be more satisfied. So the transport service providers should maintain performance as high as possible to satisfy the tourist.

7.9 SUMMARY

The analysis and results of the Importance-Satisfaction Analysis show the attributes which are important to the tourist and also affects their satisfaction. Identification of these attributes is necessary for improvement of transportation services. Attributes Plotted in Quadrant I "Keep up the Good Work," with high importance/high performance (satisfaction), are key performance factors. These are the basic factors influencing tourist satisfaction. From the mode wise analysis presented in this chapter will assist the transportation service providers to identify these attributes. Improvement in these factors will enhance tourist satisfaction.

CHAPTER 8

SUMMARY AND CONCLUSIONS

CHAPTER 8

SUMMARY AND CONCLUSIONS

8.1 INTRODUCTION

This chapter provides a summary of the hypotheses in relation to the findings obtained from the data analysis. This chapter provides the findings in relation to the model, the relationship between the attributes of road transport services and tourist satisfaction, the moderating role of mode of transport between the attributes of road transport and tourist satisfaction at the destination. The chapter also includes the discussion and findings of the Importance-Satisfaction Analysis that was carried out, and highlights the service attributes which require the attention of the transport service providers. The contribution of the study, managerial implications, limitations of the study and direction for future research are also discussed in the chapter.

The review of the literature in the area of transport and tourism provided the underlying foundation for this study. The literature in this area indicated studies had acknowledged the importance of transport as an overall element in tourism development. However in the literature, the transportation services at the destination were considered only as the availability of transport and the convenience of travelling at the tourist destination (Andriotis et al., 2008; Arasli, 2014; Della Corte, 2015; Kozak, 2001; Pizam et al., 1978; Kahtani et al., 2011). Limited research is available on the significance of transport for tourism as an independent activity at the destination and also whether there is any specific causal relationship between transport system performance at the destination and tourist satisfaction. This research becomes more relevant as it aims to identify the components of the transport system affecting tourist satisfaction when travel within the destination is possible only by road transport system. The gap in the literature led to the formulation of the research question, “Which service quality attributes of road transport services influence tourist satisfaction with these services at the destination?”

Based on the research question, specific hypotheses were formulated and tested.

8.2 SUMMARY OF FINDINGS:

8.2.1 Attributes of road transport services:

Based on the review of the literature on user satisfaction, tourist satisfaction and transport and tourism, perceived performance and perceived value were identified as important attributes of tourist satisfaction. These dimensions were incorporated in the model developed for the study based on Fornell's American Customer Satisfaction Index model (1996) and the Tourist Satisfaction Index model (Song et al., 2011) as important antecedents to tourist satisfaction. In the present study, transport accessibility was identified as another attribute of road transport services based on the preliminary survey and past research. In previous studies, accessibility was termed as the availability of transportation services and convenience of travel at the destination. The present study differs by defining the term transport accessibility in a broader sense covering infrastructure, equipment, operational factors and facilities at the destination. This study has developed this construct and hypothesised it to be related to tourist satisfaction with road transport services at the destination, perceived performance and perceived value in the tourist satisfaction model developed.

Hypotheses H1 to H6 were the predicted relationships between attributes of road transport services and tourist satisfaction with these services at the destination. In this study, transport accessibility means and covers infrastructure, equipment, operational factors and facilities of transportation services at a destination and measured in terms of tourist satisfaction with these components of road transport services and its relationship with tourist satisfaction. H7 and H8 were proposed to test the mediation effect of perceived performance and perceived value on the relationship between transport accessibility and tourist satisfaction with these services at the destination.

Using the Smart-PLS algorithm output, the relationships between independent and dependent variables were examined and the significance level of each relationship determined; the mediation effect was also tested.

Based on the results of the analysis provided in Chapter 5, the summary of hypotheses and results is provided in the following table:

Table No 8.1: Summary of Hypotheses and Research Results

	Hypothesis Statement	Results
H1	Transport Accessibility has a positive effect on perceived performance	Supported
H2	Transport Accessibility has a positive effect on perceived value	Supported
H3	Transport Accessibility has a positive effect on tourist satisfaction	Not Supported
H4	Perceived performance has a positive effect on tourist satisfaction	Supported
H5	Perceived performance has a positive effect on perceived value	Supported
H6	Perceived value has a positive effect on tourist satisfaction	Supported
H7	The relationship between transport accessibility and tourist satisfaction is mediated by perceived performance	Supported
H8	The relationship between transport accessibility and tourist satisfaction is mediated by perceived value	Supported

Source: Researcher's compilation

As seen in Table 8.1, seven out of eight hypotheses, viz. H1, H2, H4, H5, H6, H7 and H8 are supported, and H3 was not supported.

The analysis indicated that

1) Transport accessibility, perceived performance and perceived value are found to be the attributes of road transport services affecting tourist satisfaction with these services at the destination.
2) Transport accessibility has a positive and significant relationship with tourist satisfaction with road transport services at the destination.
3) The study identifies a negative and insignificant relationship between transport accessibility and tourist satisfaction with road transport services at the destination. The study has also established that the relationship is statistically insignificant as it is mediated by perceived performance and perceived value.
4) The relationship between transport accessibility and tourist satisfaction with road transport services at the destination is mediated fully by perceived performance implying that tourists are satisfied with the performance of transport services which provide better access to tourist sites.

5) The relationship between transport accessibility and tourist satisfaction with road transport services at the destination is partially mediated by perceived value, which shows that price and quality have an effect on tourist satisfaction, but not to a large extent.

8.2.2 Tourist Satisfaction Index for road transport services:

In the present study, the Tourist Satisfaction Index for transportation services is calculated based on the structural equation model in which tourist satisfaction is evaluated with respect to its antecedents. This study has adopted the Tourist Satisfaction Index (Song et al., 2011) evaluation system for the same and also used to determine the level of tourist satisfaction with various modes of transport at the destination. The calculated Tourist Satisfaction Indices suggest that, of the eight modes considered, tourists are most satisfied with Private bus operators (80.60), followed by the Public transport (KTCL) (76.25), Auto rickshaw (76.15) and least satisfied with vehicles arranged by hotels and tour operator (71.18) on a scale ranging from 0 to 100.

8.2.3 Moderating effect of mode of transport:

The present study examined the moderating role of mode of transport on the relationship between transport accessibility, perceived performance and perceived value and tourist satisfaction with road transport services at the destination. Using indicator coding, moderation analysis was conducted to test the proposed hypotheses.

The following table is the summary of hypotheses tested

Table 8.2: Summary Of Hypotheses Tested

H9	The mode of transport moderates the relationship between tourist satisfaction with road transport services and each of the identified antecedents, viz. transport accessibility, perceived performance and perceived value	Supported
H9a	The mode of transport moderates the relationship between transport accessibility and tourist satisfaction with road transport services at the destination	Supported

H9 b	The mode of transport moderates the relationship between perceived performance and tourist satisfaction with road transport services at the destination	Not supported
H9 c	The mode of transport moderates the relationship between perceived value and tourist satisfaction with road transport services at the destination.	Supported

Source: Researcher's compilation

It was found that the mode of transport

- moderates the relationship between between transport accessibility, perceived performance and perceived value and tourist satisfaction with road transport services at the destination.
- moderates the relationship between transport accessibility and tourist satisfaction with road transport services at the destination showing a de-accelerating effect
- does not moderate the relationship between perceived performance and tourist satisfaction with road transport services at the destination
- moderates the relationship between perceived value and tourist satisfaction with road transport services at the destination, showing accelerating effect.

8.2.4 Service Quality attributes of road transport services:

The quality of transportation services is a key factor affecting the willingness of tourists to use different modes of transport during their visit. The present study examined tourists' perception of services delivered by transport service providers in terms of importance attached to the service attributes and satisfaction derived. By applying Importance-Satisfaction Analysis, the attributes as perceived by the tourists were plotted in the respective quadrant for each mode of transport. Of the four quadrants, the quadrant "Concentrate here" or "basic factors" is of crucial importance to service providers because these are the minimum required factors expected by the tourist and directly affects their satisfaction.

In this study, the following attributes emerged as basic attributes that should be given due attention by respective transport service providers in order to enhance tourist satisfaction.

1) **For Public Bus Transport:** The important factors are the safety and maintenance of the vehicle, the availability of sufficient information to the tourists at the stops regarding explanation and announcement of delays and onboard information regarding announcements of stops, route and direction, freedom from nuisance behaviour of other riders, safety and security while travelling in the vehicle, the distance that they have to walk, having stops near the destination, cleanliness of stops and availability of maps and information about schedules at the stops.
2) **For Private Bus Transport:** The important attribute for tourists using private bus transport is the cost of travel which is the fare paid by them.
3) **For Sightseeing vehicles arranged by Hotels, Tour operators**: Here again the important attribute is the cost of the travel, the availability of sufficient information at the stops regarding explanation and announcement of delays, clear and timely announcements and onboard information regarding announcements of stops, route and direction, the cleanliness of the stops.
4) **For Government Sightseeing Vehicles**: The important attribute is the complaint handling system, on-board conditions of the vehicle and the comfort, including air-conditioning, temperature and humidity on vehicles, the cleanliness of the stops is also an important attribute affecting their satisfaction.
5) **For Taxi**: The important and basic attributes affecting tourist satisfaction are the value for the cost of the travel and safety of the vehicles.
6) **For Motorcycle taxi**: The important factors are safety, maintenance and cleanliness of the vehicle, the availability of sufficient information, the availability of schedule /information at stops and the driver's competence.
7) **For Rent a car**: The important factors here are the maintenance and cleanliness of the vehicle.
8) **For Auto-rickshaw**: The important attribute for this mode of transport is the cost of travel, which includes the fair price of the trip and consistency of fare structure and the availability of sufficient information at stops.

From the mode-wise Importance-Satisfaction Analysis, the following service attributes were found to be basic factors of the transportation services common to service providers of all modes of transport and collectively affecting tourist perception.

- **Information provision**: The most important and basic factor is the availability of sufficient information at the stops regarding explanation and announcement of delays, clear and timely announcements and onboard information regarding announcements of stops, route and direction visible on the vehicle.
- **Comfort**: On-board conditions of the vehicle and the comfort including air-conditioning, temperature and humidity on vehicles (not hot/cold) are basic attributes that tourists perceive as important
- **Terminals and stops:** The cleanliness of stops is a basic and important factor affecting tourist satisfaction at the destination.
- **Safety**: The important factor is the safety related to transportation services.
- **Price**: The cost of the travel, which is the affordability of the fare and fair price of the trip, is a basic and important attribute.
- **Physical conditions of the vehicles**: Another basic and important attribute while travelling is the physical condition of the vehicle, its maintenance and cleanliness.

The transport and tourism industry should take corrective measures towards improving their performance in all the above areas, which will enhance tourist satisfaction.

8.3 THE CONTRIBUTION OF THE STUDY

In general, this thesis has made contributions to research by identifying important attributes of road transport services and analysing the relationship between these attributes and tourist satisfaction in the context of transportation services for tourism. More specifically, the contributions are as follows:

1) The study contributes to the body of knowledge by developing construct viz. transport accessibility, for measuring tourist satisfaction with the components of road transport services. This construct is broader in scope than the traditional understanding of accessibility, including as it does, infrastructure, equipment,

operational factors and facilities at the destination and can be applied to different transport services for measuring customer satisfaction.

2) The combination of Customer satisfaction and Tourist satisfaction model literature laid the foundation for conceptualising the attributes of road transport services. This study tested transport accessibility in the tourist satisfaction model as an antecedent to tourist satisfaction and found that it significantly contributes to overall satisfaction along with perceived performance and perceived value of transportation services. This was confirmed by adopting Johnson and Fornell's theory of customer satisfaction (1991), which proposes that cumulative satisfaction describes total consumption experience with a product or service at a destination. The model developed in this thesis can be adopted for measuring user satisfaction with transportation services.
3) This study also contributes to the body of knowledge by determining the relationship between the attributes of road transport services with overall tourist satisfaction by adopting the American Customer Satisfaction model (1996) and Tourist Satisfaction model (2011), and also identifying the attribute level satisfaction by adopting importance-satisfaction analysis and three-factor theory (2004) based on Kano's model of customer satisfaction. This study provides a stepwise methodology for measuring overall customer satisfaction and also satisfaction derived from each service attribute which could contribute towards improvement of the services. The mode of transport moderates the relationship between attributes of road transport services and tourist satisfaction with these services at the destination – this is a very important contribution of this study. This finding adds to the body of existing literature on transport and user satisfaction studies.

8.4 MANAGERIAL IMPLICATIONS OF THE STUDY:

This study has important implications for tourism and transport organisations that provide services to tourists. The study can be of interest to transport service providers, who can enhance the satisfaction of their customers by understanding their needs. The study has identified the important attributes of road transport services and explained the

relationship between these attributes and tourist satisfaction with these services at the destination.

Litman (2011) stated that accessibility most accurately reflects the ultimate goal of transportation and allows the widest range of transport problems and solutions to be considered. Service providers can apply the components of road transport services that were identified to measure transport accessibility, to identify the problems faced by tourists or transport users, and also to consider possible solutions. For transport services, it is essential to identify the causes that may be affecting their performance, which may in turn affect user satisfaction.

Perceived performance is an important dimension in satisfaction studies (Anderson et al., 1994; Chan et al., 2003; Fornell et al., 1996; Kerdpitak, 2014; Mingfang, 2011; Song et al., 2012; Wang Xia et al., 2009). In case of transportation services, performance has a direct effect on tourist satisfaction. In this study, performance is found to be fully mediating the relationship between transport accessibility and tourist satisfaction with road transport services at the destination, proving that users are greatly affected by the performance of transportation services. Transport service providers should monitor their performance regularly and improve, as it has a direct effect on tourist satisfaction.

The study can be useful to service providers to improve the quality of service attributes which are identified by quadrant analysis. The methodology of the study can be useful to transport service providers to identify mode-wise attributes and concentrate on the important aspects of their development. This will also ensure better utilization of scarce resources. The attribute-based measurement technique common to both transport and tourism research is necessary to measure the performance of transport services that predict satisfaction with the destination (Thompson & Schofield, 2007).

8.5 LIMITATIONS OF THE STUDY

1. Since the research was intended to study tourist satisfaction with attributes of road transport services at the destination the tourist satisfaction model was adopted till the stage of satisfaction. The consequences of satisfaction are not considered in this study.

2. The components of transport accessibility identified by using preliminary survey may not be complete and comprehensive, thus leaving scope for identification of additional components of transport accessibility.

8.6 DIRECTION FOR FUTURE RESEARCH

1) This study has identified transport accessibility, perceived performance and perceived value as attributes of road transport services affecting tourist satisfaction. It would be worthwhile to identify and test the consequences of tourist satisfaction with respect to transportation services provided at the destination.
2) The calculation of the tourist satisfaction index can be done on a regular basis to monitor the performance of transportation services and take necessary steps for improvement.
3) This study has analysed tourist satisfaction with road transport services at the destination using structural equation modelling. Further studies can analyse passenger or user satisfaction with road transport services applying the proposed framework of tourist satisfaction.

8.7 CONCLUSIONS

This research has measured tourist satisfaction with road transport services at the destination. The study identified transport accessibility, perceived performance and perceived value as attributes of road transport services and tested their relationship with tourist satisfaction. Transport accessibility is the construct developed for this study by exploring the components of road transport services that are necessary and essential for tourism activities at the destination.

The Tourist satisfaction model adopted in the study was based on Johnson and Fornell's Framework of Customer Satisfaction and American Customer Satisfaction Index. Hypothesised relationships were tested using Structural Equation Modelling, Smart-PLS software. The results indicated that transport accessibility, perceived performance and perceived value are the antecedents of tourist satisfaction and perceived performance and perceived value mediate the relationship between transport accessibility and tourist satisfaction. The Tourist Satisfaction Index indicated that tourists are most satisfied with the services provided by the private bus operators.

The mode of transport used by the tourist moderates the relationship between identified attributes of road transport services and tourist satisfaction with these services at the destination. Service quality attributes identified by the study, such as information provision, comfort, terminals and stops, safety, price and physical conditions of the vehicles are important for tourists and affect their satisfaction. The findings of the study would help transport service providers to take corrective measures towards improving their performance and enhancing tourist satisfaction.

The study has made some theoretical and managerial contributions which would be of great help to academicians and transport service providers. The study has also outlined the directions for future research, which could guide future researchers to extend the work in this area.

BIBLIOGRAPHY

BIBLIOGRAPHY

Abu Ali Assistant Al, J., & Howaidee Assistant Al, M. (2012). The Impact of Service Quality on Tourist Satisfaction in Jerash. Interdisciplinary Journal of Contemporary Research in Business, 164–187.

Aguiló, E., Palmer, T., & Rosselló, J. (2012). Road transport for tourism: Evaluating policy measures from consumer profiles. Tourism Economics, 18(2), 281–293. http://doi.org/10.5367/te.2012.0120

Aguinis, H., Beaty, J. C., Boik, R. J., & Pierce, C. A. (2005). Effect size and power in assessing moderating effects of categorical variables using multiple regression: a 30-year review. Journal of Applied Psychology, 90(1), 94.

Aktaş, A., Aksu, A. A., & Çizel, B. (2007). Destination choice: an important-satisfaction analysis. Quality & Quantity, 41(2), 265-273.

Al Katani, S. J., Xia, C., & Veenendaal, B. (2008). A review of methodologies on measure of accessibility to tourist attractions, (January 2008), 14p.

Albalate, D., & Bel, G. (2010). Tourism and urban public transport: Holding demand pressure under supply constraints. Tourism Management, 31(3), 425–433. http://doi.org/10.1016/j.tourman.2009.04.011

Almanza, B. A., Jaffe, W., & Lin, L. (1994). Use of the service attribute matrix to measure consumer satisfaction. Hospitality Research Journal, 17(2), 63-75.

American society for quality control. (1998). American Customer Satisfaction Index (ACSI). Methodology Report. ASQ.

Anable, J. (2005). 'Complacent car addicts' or 'aspiring environmentalists'? Identifying travel behaviour segments using attitude theory. Transport Policy, 12(1), 65-78.

Anderson, E. W., Fornell, C., & Lehmann, D. R. (1994). Customer satisfaction, market share, and profitability: Findings from Sweden. Journal of marketing, 58(3), 53-66.

Andrew F. Hayes & Amanda K. Montoya (2017) A Tutorial on Testing, Visualizing, and Probing an Interaction Involving a Multicategorical Variable in Linear Regression Analysis, Communication Methods and Measures, 11:1, 1-30, DOI: 10.1080/19312458.2016.1271116

Andrew F. Hayes (2013) Introduction to Mediation, Moderation, and Conditional Process Analysis A Regression-Based Approach THE GUILFORD PRESS New York

London

Andrew F. Hayes (2018) Introduction To Mediation, Moderation, And Conditional Process Analysis, Second Edition: A Regression-Based Approach The Guilford Press New York London.

Andriotis, K., Agiomirgianakis, G., & Mihiotis, A. (2008). Measuring tourist satisfaction: A factor-cluster segmentation approach. Journal of Vacation Marketing, 14(3), 221-235.

Araslı, H., & Baradarani, S. (2014). European Tourist Perspective on Destination Satisfaction in Jordan's Industries. Procedia - Social and Behavioral Sciences. http://doi.org/10.1016/j.sbspro.2013.12.645

Azimi, M., Hoseini, M., Ildormi, A., & Abroofarakh, M. (2013). The Role Of Road Transport In Tourism Industry Development (Gilan Province)

Aziz, N. S., & Kamaludin, A. (2015, August). Using pre-test to validate the Questionnaire for Website Usability (QWU). In 2015 4th International Conference on Software Engineering and Computer Systems (ICSECS) (pp. 107-111). IEEE.

Badiger K.R(1994) Spatial patterns of transport and communication systems in Goa, Karnataka Unversity, Dharwad, Karnataka

Baker, D. A., & Crompton, J. L. (2000). Quality, satisfaction and behavioral intentions. Annals of Tourism Research, 27(3), 785–804. http://doi.org/10.1016/S0160-7383(99)00108-5

Bănică, A., & Camară, G. (2011). Accessibility and tourist function development of the Romanian small towns. GeoJournal of Tourism and Geosites, 7(1), 22-133.

Barclay, D., Higgins, C., & Thompson, R. (1995). The partial least squares (PLS) approach to casual modeling: personal computer adoption ans use as an Illustration

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. Journal of personality and social psychology, 51(6), 1173.

Becken, S., & Schiff, A. (2011). Distance Models for New Zealand International Tourists and the Role of Transport Prices. Journal of Travel Research, 50(3), 303–320. http://doi.org/10.1177/0047287510362919

Beirão, G., & Sarsfield Cabral, J. a. (2007). Understanding attitudes towards public transport and private car: A qualitative study. Transport Policy, 14(6), 478–489. http://doi.org/10.1016/j.tranpol.2007.04.009

Berry, L. L., Parasuraman, A., & Zelthami, V. a. (1988). The Service-Quality Puzzle.pdf. Business Horizons. http://doi.org/10.1016/0007-6813(88)90053-5

Bigné, J. E., Sánchez, M. I., & Sánchez, J. (2001). Tourism image, evaluation variables and after purhase behaviour: Inter-relationship. Tourism Management, 22(6), 607–616. http://doi.org/10.1016/S0261-5177(01)00035-8

Bimonte, S., & Punzo, L. F. (2016). Tourist development and host-guest interaction: An economic exchange theory. Annals of Tourism Research, 58(May), 128–139. http://doi.org/10.1016/j.annals.2016.03.004

Blešić, I., Popov-Raljić, J., Uravić, L., Stankov, U., Đeri, L., Pantelić, M., & Armenski, T. (2014). An importance-performance analysis of service quality in spa hotels. Economic research-Ekonomska istraživanja, 27(1), 483-495

Boit, J. (2013). The Role Of Destination Attributes And Visitor Satisfaction On Tourist Repeat Visit Intentions: The Case Of Lake Nakuru National Park, Kenya (Vol. 1, Pp. 1–30). http://doi.org/10.1017/CBO9781107415324.004

Boopen, S. (2005). Transport Capital as a Determinant of Tourism Development: A Time Series Approach, (25402).

Bugheanu, A. (2015). SWOT analysis of public transport system in Bucharest. Management Research and Practice, 7(1), 14-31.

Busacca, B., & Padula, G. (2005). Understanding the relationship between attribute performance and overall satisfaction Theory , measurement and implications, 23(6), 543–561. http://doi.org/10.1108/02634500510624110.

Cao, J. (2017). Comparing importance-performance analysis and three-factor theory in assessing rider satisfaction with transit, 837–854.

Celata, F. (2007). Geographic marginality, transport accessibility and tourism development. Global Tourism and regional competitiveness. Bologna

Chan, L. K., Hui, Y. V., Lo, H. P., Tse, S. K., Tso, G. K., & Wu, M. L. (2003). Consumer satisfaction index: new practice and findings. European Journal of Marketing, 37(5/6), 872-909.

Chang, H. H., & Lai, T. Y. (2009). The Taipei MRT (Mass Rapid Transit) tourism attraction analysis from the inbound tourists' perspective. Journal of Travel and Tourism Marketing, 26(5–6), 445–461. http://doi.org/10.1080/10548400903162964

Chen, C. F. (2008). Investigating structural relationships between service quality, perceived value, satisfaction, and behavioral intentions for air passengers: Evidence from

Taiwan. Transportation Research Part A: Policy and Practice, 42(4), 709–717. http://doi.org/10.1016/j.tra.2008.01.007

Chen, C. F., & Chen, F. S. (2010). Experience quality, perceived value, satisfaction and behavioral intentions for heritage tourists. Tourism management, 31(1), 29-35.

Chen, C.-H. (2009). Development of a Model to Measure Customer Satisfaction with International Tourist Hotels in Taiwan. North, 199.

Chen, Y. C., & Lin, S. (2013). Applying Importance-Performance Analysis for Improving Internal Marketing of Hospital Management in Taiwan International. Business Research, 6(4), 46-54.

Chi, C. G. Q., & Qu, H. (2008). Examining the structural relationships of destination image, tourist satisfaction and destination loyalty: An integrated approach. Tourism Management, 29(4), 624–636. http://doi.org/10.1016/j.tourman.2007.06.007

Chin, W. W. (1998). The partial least squares approach to structural equation modeling. Modern methods for business research, 295(2), 295-336.

Cohen, P., West, S. G., & Aiken, L. S. (2014). Applied multiple regression/correlation analysis for the behavioral sciences. Psychology Press.

Constantin, C. (2014). Using the Importance-Satisfaction matrix in designing relationship marketing strategies. în Bulletin of the Transilvania University of Braşov Series V: Economic Sciences, 7(56).

Cronin Jr, J. J., & Taylor, S. A. (1992). Measuring service quality: a reexamination and extension. Journal of marketing, 56(3), 55-68.

Cronin, J. J., Brady, M. K., & Hult, G. T. M. (2000). Assessing the effects of quality, value, and customer satisfaction on consumer behavioral intentions in service environments. Journal of retailing, 76(2), 193-218

Currie, C., & Falconer, P. (2014). Maintaining sustainable island destinations in Scotland: The role of the transport–tourism relationship. Journal of Destination Marketing & Management, 3(3), 162–172. http://doi.org/10.1016/j.jdmm.2013.10.005

De Oña, J., De Oña, R. R., Calvo, F. J., Eboli, L., Mazzulla, G., Nathanail, E., … Paper, C. (2008). A classification tree approach to identify key factors of transit service quality. Transport Policy, 34(4), 9040. http://doi.org/10.1016/j.tranpol.2008.06.002

del Bosque, I. R., & San Martín, H. (2008). Tourist satisfaction a cognitive-affective model. Annals of Tourism Research, 35(2), 551–573. http://doi.org/10.1016/j.annals.2008.02.006

del Castillo, J. M., & Benitez, F. G. (2013). Determining a public transport satisfaction index from user surveys. Transportmetrica A: Transport Science, 9(8), 713–741. http://doi.org/10.1080/18128602.2011.654139

Dell'Olio, L., Ibeas, A., & Cecin, P. (2011). The quality of service desired by public transport users. Transport Policy, 18(1), 217-227.

Della Corte, V. (2015). Customer Satisfaction in Tourist Destination: The Case of Tourism Offer in the City of Naples. Journal of Investment and Management, 4(1), 39. http://doi.org/10.11648/j.jim.s.2015040101.16.

Dept. of Tourism, Govt of Goa (Total Number of tourist arrivals in Goa) retrieved from www.goatourism.gov.in/statistics/333-tourist-arrival-statistics-2018.

Dijkstra, T. K., Sarstedt, M., Ringle, C. M., Diamantopoulos, A., Straub, D. W., Jr, D. J. K., … Calantone, R. J. (2014). Common Beliefs and Reality About PLS : Comments on ¨ nkko ¨ and Evermann (2013) Ro, 17(2), 182–209. http://doi.org/10.1177/1094428114526928

Donald R Cooper, Pamela S. Schindler (2006) Business Research Methods: McGraw-Hill. 9th Edition

Duke, C. R., & Persia, M. A. (1996). Performance-importance analysis of escorted tour evaluations. Journal of Travel & Tourism Marketing, 5(3), 207-223.

Eboli, L., & Mazzulla, G. (2007). Service Quality Attributes Affecting Customer Satisfaction for Bus Transit. Journal of Public Transportation, 10(3), 21–34. http://doi.org/10.5038/2375-0901.10.3.2

Eboli, L., & Mazzulla, G. (2009). A new customer satisfaction index for evaluating transit service quality. Journal of Public transportation, 12(3), 2.

Eboli, L., & Mazzulla, G. (2011). A methodology for evaluating transit service quality based on subjective and objective measures from the passenger's point of view. Transport Policy, 18(1), 172–181. http://doi.org/10.1016/j.tranpol.2010.07.007

Economic Survey, (Statistical Handbook of Goa) retrieved from http://goadpse.gov.in/publications.html

http://goadpse.gov.in/Statistical-Book-2012-13-Final.pdf

http://goadpse.gov.in/Statistical%20Hand%20Book%20of%20Goa%202013-14.pdf

http://goadpse.gov.in/Statistical%20Hand%20Book%20of%20Goa%202014-15.pdf

http://goadpse.gov.in/Statistical%20Hand%20Book%20of%20Goa%202015-16.pdf

http://goadpse.gov.in/Statistical%20Hand%20Book%20of%20Goa%202016-17.pdf

Ekiz, E. H., & Khoo-Lattimore, C. (2014). Destination India: Investigating the impact of Goa's attributes on families' leisure travel experience. Tourism, 62(2), 165–180.

Evans, M. R., & Chon, K. S. (1989). Formulating and Evaluating Tou Rism Policy Using Importance-Performance Analysis. Hospitality Education and Research Journal, 13(3), 203-213.

Fairchild, A. J., & MacKinnon, D. P. (2009). A general model for testing mediation and moderation effects. Prevention Science, 10(2), 87-99.

Fairchild, A. J., & McQuillin, S. D. (2010). Evaluating mediation and moderation effects in school psychology: A presentation of methods and review of current practice. Journal of school psychology, 48(1), 53-84.

Fellesson, M., & Friman, M. (2008). Perceived Satisfaction with Public Transport Service in Nine European Cities, 47(3).

Fellesson, M., & Friman, M. (2009). Service Supply and Customer Satisfaction in Public Transportation: The Quality Paradox. Journal of Public Transportation, 12(4), 13. Retrieved from http://www.nctr.usf.edu/jpt/pdf/JPT12-4Friman.pdf

Fornell, C. (1992). A National Customer Satisfaction Barome- ter: The Swedish Experience. Journal of Marketing, 56(1), 6–21. http://doi.org/10.2307/1252129

Fornell, C., & Bookstein, F. L. (2006). Two Structural Equation Models: LISREL and PLS Applied to Consumer Exit-Voice Theory. Journal of Marketing Research, 19(4), 440. http://doi.org/10.2307/3151718

Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. Journal of Marketing Research, 18(1), 39. http://doi.org/10.2307/3151312

Fornell, C., Johnson, M. D., Anderson, E. W., & Bryant, B. E. (1996). The American Customer Satisfaction Index : Nature , Purpose , and Findings The American Customer Satisfaction Index : Nature , Purpose , and. Journal of Marketing, 60(4), 7–18. http://doi.org/10.2307/1251898

Frazier, P. A., Tix, A. P., & Barron, K. E. (2004). Testing moderator and mediator effects in counseling psychology research. Journal of counseling psychology, 51(1), 115.

Gailevičiūtė, I. (2011). Kano model: How to satisfy customers?. Global Academic Society Journal: Social Science Insight, 4(12), 4-25.

Gallarza, M. G., & Saura, I. G. (2006). Value dimensions, perceived value, satisfaction and loyalty: An investigation of university students' travel behaviour. Tourism

Management, 27(3), 437–452. http://doi.org/10.1016/j.tourman.2004.12.002

Gaman, G., & Racasan, B. (2016). Transport Accessibility as a Factor for Tourism Flow Augmentation. Case Study: The Romanian Health Resorts. Journal of Settlements and Spatial Planning, 7(1), 65.

Garson, G. D. (2016). Partial least squares: Regression and structural equation models. Asheboro, NC: Statistical Associates Publishers.

Gaskin, J., (2016), "Partial Least Squares", Gaskination's StatWiki. retrieved from http://statwiki.kolobkreations.com

Gefen, D., Straub, D., & Boudreau, M. C. (2000). Structural equation modeling and regression: Guidelines for research practice. Communications of the association for information systems, 4(1), 7.

Georgescu, C. (2015). Role of Road Transport in the International Development of Services and Tourism. Knowledge Horizons. Economics, 7(3), 74–78.

Geurs, K. T., & Ritsema van Eck, J. (2001). Accessibility measures: review and applications. Evaluation of accessibility impacts of land-use transportation scenarios, and related social and economic impact. RIVM Report, 787, 1–265. Retrieved from https://rivm.openrepository.com/rivm/handle/10029/9487

Geurs, K. T., & van Wee, B. (2004). Accessibility evaluation of land-use and transport strategies: review and research directions. Journal of Transport Geography, 12(2), 127–140. http://doi.org/10.1016/j.jtrangeo.2003.10.005

Goa State Report 2019 retrieved fromhttps://www.ibef.org/states/goa.aspx

Goa Most Preferred Destination in India says report retrieved from http://www.traveltradejournal.com/a-google-shot-in-the-arm-for-state-goa-most-preferred-destination-in-india-says-report

Goa Miles app-based taxi services retrieved from https://goa-tourism.com/goamiles

Goa tourism e-bikes retrieved from https://goa-tourism.com/ebikes and

http://www.uniindia.com/goa-tourism-launches-india-s-first-electric-vehicle-tourism-initiative/west/news/1407264.html

Goa tourism-women taxi retrieved fromhttps://goa-tourism.com/women_taxi

Govender, K. K. (2014). Public transport service quality in South Africa: A case study of bus and mini bus services in Johannesburg. African Journal of Business Management, 8(10), 317.

Gregory, A. M., & Parsa, H. G. (2012). Journal of Hospitality Marketing & Kano ' s

Model : An Integrative Review of Theory and Applications to the Field of Hospitality and Tourism Kano ' s Model : An Integrative Review of Theory and Applications to the Field of Hospitality, (February 2013), 37–41. http://doi.org/10.1080/19368623.2011.641073

Grigoroudis, E., & Siskos, Y. (2004). A survey of customer satisfaction barometers: Some results from the transportation-communications sector. European Journal of Operational Research, 152(2), 334-353.

Guirao, B., García-Pastor, A., & López-Lambas, M. E. (2016). The importance of service quality attributes in public transportation: Narrowing the gap between scientific research and practitioners' needs. Transport Policy, 49, 68-77.

Guiver, J., Lumsdon, L., Weston, R., & Ferguson, M. (2007). Do buses help meet tourism objectives? The contribution and potential of scheduled buses in rural destination areas. Transport Policy, 14(4), 275–282. http://doi.org/10.1016/j.tranpol.2007.02.006

Guzman-Parra, V. F., Vila-Oblitas, J. R., & Maqueda-Lafuente, F. J. (2016). Exploring the effects of cognitive destination image attributes on tourist satisfaction and destination loyalty: a case study of Málaga, Spain. Tourism & Management Studies, 12(1), 67–73. http://doi.org/10.18089/tms.2016.12107

Hadi, N. U., Abdullah, N., & Sentosa, I. (2016). Making sense of mediating analysis: A marketing perspective. Review of Integrative Business and Economics Research, 5(2), 62.

Hair Jr, J., Sarstedt, M., Hopkins, L., & G. Kuppelwieser, V. (2014). Partial least squares structural equation modeling (PLS-SEM) An emerging tool in business research. European Business Review, 26(2), 106-121.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). Multivariate Data Analysis. Vectors. http://doi.org/10.1016/j.ijpharm.2011.02.019

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-sem : Indeed a silver bullet PLS-SEM : Indeed a Silver Bullet, (February 2014). http://doi.org/10.2753/MTP1069-6679190202

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2013). Partial least squares structural equation modeling: Rigorous applications, better results and higher acceptance. Long range planning, 46(1-2), 1-12.

Hair, J. F., Sarstedt, M., Ringle, C. M., & Mena, J. A. (2012). An assessment of the use of

partial least squares structural equation modeling in marketing research, 414–433. http://doi.org/10.1007/s11747-011-0261-6.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2014). Multivariate data analysis: Harlow. UK: Pearson Education Limited.

Hall, D. (2004). Transport and tourism: Some policy issues. Scottish Geographical Journal, 120(4), 311–325. http://doi.org/10.1080/00369220418737214

Hall, D. R. (1999). Conceptualising tourism transport: inequality and externality issues. Journal of Transport Geography, 7(3), 181–188. http://doi.org/10.1016/S0966-6923(99)00001-0

Handy, S. L., & Niemeier, D. A. (1997). Measuring accessibility: An exploration of issues and alternatives. Environment and Planning A, 29(7), 1175–1194. http://doi.org/10.1068/a291175

Hawes, J. M., & Rao, C. P. (1985). Using Importance--Performance Analysis To Develop Health Care Marketing Strategies. Journal of Health Care Marketing, 5(4).

Hayes, A. F. (2012). An Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-based Approach . New York: Guilford Press. 1, 1–39.

Hayes, A. F. (2012). PROCESS: A versatile computational tool for observed variable mediation, moderation, and conditional process modeling.

Hayes, A. F. (2013). Introduction to Mediation , Moderation , and Conditional Process Analysis.

Hayes, A. F. (2018). Partial, conditional, and moderated moderated mediation: Quantification, inference, and interpretation. Communication Monographs, 85(1), 4-40.

Hayes, A. F., & Hayes, A. F. (2017). Partial , conditional , and moderated moderated mediation : Quantification , inference , and interpretation Quantification , inference , and interpretation. Communication Monographs, 0(0), 1–37. http://doi.org/10.1080/03637751.2017.1352100

Hayes, A. F., Montoya, A. K., & Rockwood, N. J. (2017). The analysis of mechanisms and their contingencies : PROCESS versus structural equation modeling. Australasian Marketing Journal (AMJ), 1–6. http://doi.org/10.1016/j.ausmj.2017.02.001

He, Y., & Song, H. (2008). A mediation model of tourists' repurchase intentions for packaged tour services. Journal of Travel Research, 47(3), 317-331

Henderson, J. (2009). Transport and Tourism Destination Development: An Indonesian

Perspective. Tourism and Hospitality Research, 9(3), 199–208. http://doi.org/10.1057/thr.2009.1

Henseler, J., Ringle, C. M., & Sarstedt, M. (2012). Using partial least squares path modeling in advertising research: basic concepts and recent issues. Handbook of research on international advertising, 252.

Henseler, J., Ringle, C. M., & Sarstedt, M. (2014). A new criterion for assessing discriminant validity in variance-based structural equation modeling. Journal of the Academy of Marketing Science, 43(1), 115–135. http://doi.org/10.1007/s11747-014-0403-8

Hilton, C. E. (2017). The importance of pretesting questionnaires: a field research example of cognitive pretesting the Exercise referral Quality of Life Scale (ER-QLS). International Journal of Social Research Methodology, 20(1), 21-34.

Holbrook, M. B. (Ed.). (1999). Consumer value: a framework for analysis and research. Psychology Press.

Hough, G., & Hassanien, A. (2010). Transport choice behaviour of Chinese and Australian tourists in Scotland. Research in Transportation Economics, 26(1), 54–65. http://doi.org/10.1016/j.retrec.2009.10.008

Hu, K. C., & Jen, W. (2006). Passengers' perceived service quality of city buses in Taipei: Scale development and measurement. Transport Reviews, 26(5), 645–662. http://doi.org/10.1080/01441640600679482

Huh, J. (2002). Tourist satisfaction with cultural/heritage sites: The Virginia historic triangle.

Israeli, Y., & Mansfeld, Y. (2003). Transportation accessibility to and within tourist attractions in the Old City of Jerusalem. Tourism Geographies, 5(4), 461–481. http://doi.org/10.1080/1461668032000129173

Jacobs, R. (1999). Evaluating satisfaction with media products and services: an attribute based approach. European media management review.

Jannit, J., & Aeka, A. (2016). an Important Factors Influencing the Decision of, (November), 29–32.

Jao-Hong, C., Chien Yuan, L., Huei-Ping, C., & Chun-Liang, O. (2010). The service quality analysis of public transportation system using PZB model — Dynamic bus information system. The 40th International Conference on Computers & Indutrial Engineering, 1–5. http://doi.org/10.1109/ICCIE.2010.5668302

Jayaraman K. (2011). Robust models for the utilization of public bus transport services in Malaysia. African Journal of Business Management, 5(26), 10586–10600. http://doi.org/10.5897/AJBM11.510

Jen, W., & Hu, K. C. (2003). Application of perceived value model to identify factors affecting passengers' repurchase intentions on city bus: A case of the Taipei metropolitan area. Transportation, 30(3), 307-327.

Jeremiah, S. N. (2015). Analysis Of The Moderating Role Of Service Failure On The Relationship Between Service Quality And Customer Satisfaction : Evidence From Kenya ' S Mobile Phone Sector, Iii(12), 656–667.

Joe F Hair, Jeffrey Joe Risher, Marko Sarstedt, Christian M Ringle,(2018) "When to use and how to report the results of PLS-SEM", European Business Review, https://doi.org/10.1108/EBR-11-2018-0203

Joewono, T. B., & Kubota, H. (2007). User Perceptions of Private Paratransit Operation in Indonesia. Journal of Public Transportation, 10(4), 99–118. http://doi.org/10.5038/2375-0901.10.4.5

Johnson, M. D., & Fornell, C. (1991). A framework for comparing customer satisfaction across individuals and product categories. Journal of Economic Psychology, 12(2), 267–286. http://doi.org/10.1016/0167-4870(91)90016-M

Johnson, M. D., Anderson, E. W., & Fornell, C. (1995). Rational and Adaptive Performance Expectations in a Customer Satisfaction Framework. Journal of Consumer Research, 21(Mars), 695–707. http://doi.org/10.1086/209428

Jomnonkwao, S., & Ratanavaraha, V. (2016). Measurement modelling of the perceived service quality of a sightseeing bus service: An application of hierarchical confirmatory factor analysis. Transport Policy, 45, 240-252.

Joppe, M., Martin, D. W., & Waalen, J. (2001). Toronto's image as a destination: a comparative importance-satisfaction analysis by origin of visitor. Journal of travel research, 39(3), 252-260.

Jr, J. F. H., Hopkins, L., Georgia, M., & College, S. (2008). Partial least squares structural equation modeling (PLS-SEM) An emerging tool in business research. http://doi.org/10.1108/EBR-10-2013-0128

Kahtani, Jianhong Xia and Bert Veenendaal (2011). Measuring accessibility to tourist attractions, the Geospatial Science Research Symposium 2011, Melbourne

Kashyap, R., & Bojanic, D. C. (2000). A structural analysis of value, quality, and price

perceptions of business and leisure travelers. Journal of travel research, 39(1), 45-51.

Kattiyapornpong, U. (2006). Understanding travel behavior using demographic and socioeconomic variables as travel constraints. ANZMAC 2006 : Advancing theory, maintaining relevance : Proceedings of the 2006 Australian & New Zealand Marketing Academy Conference (pp. 1-9). Brisbane, Queensland: Queensland University of Technology, School of Advertising, Marketing and Public Relations.

Kerdpitak, C., & Heuer, K. (2014). Influencing Factors To Decision of Tourist in Choosing Services Tourist Attraction. Ijbts-Journal.Com, 1–24. Retrieved from http://www.ijbts-journal.com/images/column_1411713996/2 CD Proceeding ICTTT2014.pdf

Kerdpitak, C., & Heuer, K. (2016). Key sucess factors of tourist satisfaction in tourism services provider. Journal of Applied Business Research, 32(4), 1237–1242. http://doi.org/10.19030/jabr.v32i4.9733

Khadaroo, J., & Seetanah, B. (2007). Transport infrastructure and tourism development. Annals of Tourism Research, 34(4), 1021–1032. http://doi.org/10.1016/j.annals.2007.05.010

Khadaroo, J., & Seetanah, B. (2008). The role of transport infrastructure in international tourism development: A gravity model approach. Tourism Management, 29(5), 831–840. http://doi.org/10.1016/j.tourman.2007.09.005

Kinsella, J., & Caulfield, B. (2011). An Examination of the Quality and Ease of Use of Public Transport in Dublin from a Newcomer's Perspective. Journal of Public Transportation, 14(1), 69–81. http://doi.org/10.5038/2375-0901.14.1.4

Kock, N. (2015). Common Method Bias in PLS-SEM. International Journal of E-Collaboration, 11(4), 1–10. http://doi.org/10.4018/ijec.2015100101

Kothari, C. R. & Garg G (2014). Research Methodology, Methods and Techniques New Delhi. New age international publishers, 2.

Kovačić, M., & Milošević, T. (2016). Interdependence of Transport and Tourism. Pomorski zbornik, 52(1), 99-111.

Kozak, M. (2001). Comparative assessment oftourist satisfaction with destinations across two nationalities. Tourism Management, 22, 391–401.

Kozak, M., & Rimmington, M. (1999). Measuring tourist destination competitiveness: conceptual considerations and empirical findings. Hospitality Management,

18(November 1998), 273–283. http://doi.org/10.1016/S0278-4319(99)00034-1

Kozak, M., & Rimmington, M. (2000). Tourist Satisfaction with Mallorca, Spain, as an Off-Season Holiday Destination. Journal of Travel Research, 38(3), 260–269. http://doi.org/10.1177/004728750003800308

Kumar, K. (2012). Expectations and Perceptions of Passengers on Service Quality with Reference to Public Transport Undertakings. The IUP Journal of Operations Management, 11(3), 67–81.

Kuo, F. W., & Yang, S. C. (2017). The moderating effect of the need to belong and classroom composition on belongingness seeking of minority adolescents. Journal of adolescence, 61, 22-30.

Kwan, Y. W., & Wong, A. F. (2015). Effects of the constructivist learning environment on students' critical thinking ability: Cognitive and motivational variables as mediators. International Journal of Educational Research, 70, 68-79.

Lai, W. T., & Chen, C. F. (2011). Behavioral intentions of public transit passengers-The roles of service quality, perceived value, satisfaction and involvement. Transport Policy, 18(2), 318–325. http://doi.org/10.1016/j.tranpol.2010.09.003

Lars Nilsson-Witell Anders Fundin, (2005),"Dynamics of service attributes: a test of Kano's theory of attractive quality", International Journal of Service Industry Management, Vol. 16 Iss 2 pp. 152 - 168

Lather, A. S., Singh, R., & Singh, A. (2010). Comparing the Levels of Expectation and Satisfaction of Indian and Foreign Adventure Tourists Visiting India. Agroinform Publishing House, Budapest.

Le, D. T. T. (2014). Tourist Use of Public Transport at Destinations-the Case of Munich, Germany (Doctoral dissertation, Universitätsbibliothek der TU München).

Lee A. Graf Masoud Hemmasi Warren Nielsen, (1992),"Importance-Satisfaction Analysis: A Diagnostic Tool for Organizational Change", Leadership & Organization Development Journal, Vol. 13 Iss 6 pp. 8 - 12

Lee, C. K., Yoon, Y. S., & Lee, S. K. (2007). Investigating the relationships among perceived value, satisfaction, and recommendations: The case of the Korean DMZ. Tourism Management, 28(1), 204–214. http://doi.org/10.1016/j.tourman.2005.12.017

Lee, T. H. (2009). A structural model to examine how destination image, attitude, and motivation affect the future behavior of tourists. Leisure Sciences, 31(3), 215-236.

Leiper, N. (1979). The framework of tourism. Annals of Tourism Research, 6(4), 390–407. http://doi.org/10.1016/0160-7383(79)90003-3

Leiper, N. (1990). Tourist attraction systems. Annals of Tourism Research, 17(3), 367–384. http://doi.org/10.1016/0160-7383(90)90004-B

Le-Klähn, D. T., Gerike, R., & Michael Hall, C. (2014). Visitor users vs. non-users of public transport: The case of Munich, Germany. Journal of Destination Marketing and Management, 3(3), 152–161. http://doi.org/10.1016/j.jdmm.2013.12.005

Le-Klähn, D. T., Roosen, J., Gerike, R., & Hall, C. M. (2015). Factors affecting tourists' public transport use and areas visited at destinations. Tourism Geographies, 17(5), 738–757. http://doi.org/10.1080/14616688.2015.1084527

Le-Klahn, D.-T., Hall, M., & Gerike, R. (2014). Analysis of Visitor Satisfaction with Public Transport in Munich. Journal of Public Transport, 17(3), 68–85. http://doi.org/http://dx.doi.org/10.5038/2375-0901.17.3.5

Litman, T. (2003). Measuring transportation: traffic, mobility and accessibility. Institute of Transportation Engineers. ITE Journal, 73(10), 28.

Litman, T. (2011). You can get there from here: Evaluating transportation system diversity. Victoria Transport Policy Institute.

Liu, X., Li, J. J., & Yang, Y. (2015). Travel arrangement as a moderator in image–satisfaction–behavior relations: An investigation of Chinese outbound travelers. Journal of Vacation Marketing, 21(3), 225-236.

Lohmann, G., & Duval, D. T. (2011). Critical Aspects of the Tourism-Transport Relationship.

Lowry, P. B., & Gaskin, J. (2014). Partial least squares (PLS) structural equation modeling (SEM) for building and testing behavioral causal theory: When to choose it and how to use it. IEEE transactions on professional communication, 57(2), 123-146.

Lumsdon, L. (2000). Transport and Tourism: Cycle Tourism – A Model for Sustainable Development? Journal of Sustainable Tourism, 8(5), 361–377. http://doi.org/10.1080/09669580008667373

Lumsdon, L. M. (2006). Factors affecting the design of tourism bus services. Annals of Tourism Research, 33(3), 748-766

Mammadov, R. (2012). The Importance of Transportation in Tourism Sector. 7th Silk Road International Conference "Challenges and Opportunities of Sustainable Economic Development in Eurasian Countries," 381–386

Martilla, J. A., & James, J. C. (1977). Importance-performance analysis. Journal of marketing, 41(1), 77-79.

Masiero, L., & Zoltan, J. (2013). Tourists Intra-Destination Visits and Transport Mode: a Bivariate Probit Model. Annals of Tourism Research, 43, 529–546. http://doi.org/10.1016/j.annals.2013.05.014

Matzler, K., Bailom, F., Hinterhuber, H. H., Renzl, B., & Pichler, J. (2004). The asymmetric relationship between attribute-level performance and overall customer satisfaction : a reconsideration of the importance – performance analysis, 33, 271–277. http://doi.org/10.1016/S0019-8501(03)00055-5

Mekoth N (1997a), Quality of service in Passenger Road transport:A comparision between public and private sectors with reference to Goa, Indian Journal of transport management,pp 367-374

Mekoth N (1997b), Passenger Road Transport in Goa:A Model of Unfair Competition, Indian Journal of transport management,pp 17-20

Meng, F., Tepanon, Y., & Uysal, M. (2008). Measuring tourist satisfaction by attribute and motivation: The case of a nature-based resort. Journal of vacation marketing, 14(1), 41-56.

Mingfang, Z. (2011). Examining the Structural Relationships of Tourist Characteristics and Destination Satisfaction. International Conference on E-Business, Management and Economics IPEDR, 3, 187–191.

Montoya, A. K. (2016). Extending the Johnson-Neyman Procedure to Categorical Independent Variables: Mathematical Derivations and Computational Tools (Doctoral dissertation, The Ohio State University).

Mouwen, A. (2015). Drivers of customer satisfaction with public transport services. Transportation Research Part A: Policy and Practice, 78, 1–20. http://doi.org/10.1016/j.tra.2015.05.005

Murphy, P., Pritchard, M. P., & Smith, B. (2000). The destination product and its impact on traveller perceptions. Tourism Management, 21(1), 43–52. http://doi.org/10.1016/S0261-5177(99)00080-1

Musa, I. J. (2011). The Role of Transportation In The Development Of Tourism In Nigeria, Tourismos: An International Multidisciplinary Journal Of Tourism 6(1), 297–305.

Nadkarni S.S (1997) A Study of Mini Bus Operation in Goa (A Comparative approach)M.Phil disseration Goa university

Neal, J. D., & Gursoy, D. (2008). A multifaceted analysis of tourism satisfaction. Journal of Travel Research, 47(1), 53–62. http://doi.org/10.1177/0047287507312434.

Newman, I., Lim, J., & Pineda, F. (2013). Content validity using a mixed methods approach: Its application and development through the use of a table of specifications methodology. Journal of Mixed Methods Research, 7(3), 243-260.

Noriaki, Kano (2001). Life cycle and creation of attractive quality. In Proceedings of the 4th QMOD Conference, Linkoping (pp. 18-36).

Nguyen, C. P., Wong, Y. J., Juang, L. P., & Park, I. J. (2015). Pathways among Asian Americans' family ethnic socialization, ethnic identity, and psychological well-being: A multigroup mediation model. Asian American Journal of Psychology, 6(3), 273.

Nwachukwu, A. A. (2014). Assessment of Passenger Satisfaction with Intra-City Public Bus Transport Services in Abuja , Nigeria. Journal of Public Transportation, 17(1), 99–119. http://doi.org/10.5038/2375-0901.17.1.5

O'Leary, S., & Deegan, J. (2005). Ireland's image as a tourism destination in France: Attribute importance and performance. Journal of travel research, 43(3), 247-256.

Oh, H. (2000). The effect of brand class, brand awareness, and price on customer value and behavioral intentions. Journal of Hospitality & Tourism Research, 24(2), 136-162.

Oliver, R. L. (1977). Effect of expectation and disconfirmation on postexposure product evaluations: An alternative interpretation. Journal of applied psychology, 62(4), 480

Oliver, R. L. (1980). A cognitive model of the antecedents and consequences of satisfaction decisions. Journal of marketing research, 460-469.

Page, C. M. H. & S. J. (n.d.). Progress in Tourism Management: From the geography of tourism to Geographies of Tourism – A review Progress in Tourism Management Paper Progress in Tourism Management : From the Geography of Tourism to Geographies of Tourism – A review C . Michael Hall.

Page, S., & Lumsdon, L. (2004). Tourism and transport: Issues and agenda for the new millennium.

Pappachan, J., & Koshy, M. P. (2016). Moderation Effect of Travel Context in the Linkage among Employee Service-Quality, Satisfaction and Trust on Word-of-Mouth of Airline Passengers in India. Amity Journal of Marketing, 1(1), 75-92.

Parab(1993) Management and development of passenger transport in Goa with special reference to Kadamba Transport Corporation, Shivaji University, Kolhapur,

Maharashtra

Parasuman, A., Zeithaml, V., & Berry, L. (1988). A Multiple Item Scale for Measuring Consumer Perceptions of Service Quality. Journal of Retailing, 64(1), 12–37. http://doi.org/10.1016/S0148-2963(99)00084-3

Parasuraman, A., Berry, L. L., & Zeithaml, V. A. (1993). More on improving service quality measurement. Journal of Retailing, 69(1), 140–147. http://doi.org/10.1016/S0022-4359(05)80007-7

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). A Conceptual Model of Service Quality and Its Implications for Future Research. Journal of Marketing, 49(4), 41. http://doi.org/10.2307/1251430

Patel, H., & Joseph, J. (2016). Questionnaire designing process: A review. Journal of Clinical Trials, 6(2), 255.

Petrick, J. F. (2004). The roles of quality, value and satisfaction in predicting cruise passengers' behavioral intentions. Journal of Travel Research, 42(4), 397–407. http://doi.org/10.1177/0047287504263037

Pilelienė, L., & Grigaliūnaitė, V. (2016). The index of tourist satisfaction with Lithuania. European Journal of Tourism, Hospitality and Recreation, 7(1), 30–39. http://doi.org/10.1515/ejthr-2016-0004

Pizam, A., Neumann, Y., & Reichel, A. (1978). Dimentions of tourist satisfaction with a destination area. Annals of Tourism Research, 5(3), 314–322. http://doi.org/10.1016/0160-7383(78)90115-9

Polit, D. F., & Beck, C. T. (2004). Nursing research: Principles and methods. Lippincott Williams & Wilkins.

Polit, D. F., & Beck, C. T. (2006). The content validity index: are you sure you know what's being reported? Critique and recommendations. Research in nursing & health, 29(5), 489-497.

Polit, D. F., Beck, C. T., & Owen, S. V. (2007). Is the CVI an acceptable indicator of content validity? Appraisal and recommendations. Research in nursing & health, 30(4), 459-467.

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. Behavior research methods, 40(3), 879-891.

Preacher, K. J., Rucker, D. D., & Hayes, A. F. (2007). Addressing Moderated Mediation

Hypotheses : Theory , Methods , and Prescriptions, 42(1), 185–227.

Prideaux, B. (2000). The role of the transport system in destination development, 21(July 1999), 53–63.

Ragavan, N. A., Subramonian, H., & Sharif, S. P. (2014). Tourists' Perceptions of Destination Travel Attributes: An Application to International Tourists to Kuala Lumpur. Procedia - Social and Behavioral Sciences, 144, 403–411. http://doi.org/10.1016/j.sbspro.2014.07.309

Redman, L., Friman, M., Gärling, T., & Hartig, T. (2013). Quality attributes of public transport that attract car users: A research review. Transport Policy, 25, 119–127. http://doi.org/10.1016/j.tranpol.2012.11.005

Regent (2005) American Customer Satisfaction Index (ACSI) Methodology Reportretrievedfromhttps://www.reginfo.gov/public/do/DownloadDocument?objectID=13111701

Rizal, P. R., & Asokan, R. (2013). Role Of Transportation In Tourism Industry In Sikkim State, India. International Journal of Innovative Research and Development, 2(6). 336–346.

Ringle, C. M., Wende, S., and Becker, J.-M. 2015. "SmartPLS 3." Boenningstedt: SmartPLS GmbH, http://www.smartpls.com.

Rossiter, J. R. (2002). The C-OAR-SE procedure for scale development in marketing. International journal of research in marketing, 19(4), 305-335.

Sajilal-Virkar A & Waingainkar. U (2017) .A Study Of Service Quality And Customer Satisfaction Of Local Public Transport Sector Of Goa. International Referred Multidisciplinary Journal Of Contemporary Research, Special Issue,182-189

Sajilal-Virkar A.et.al (2016) The Study Of Perceived Factors Influencing The Sustainability Of Local Public Bus Transport In Goa. Sustainable Business Development – strategies & initiatives, 35-47

Salleh, N. H., Zarul, A. N., Othman, R., & Idris, S. H. M. (2014). Advances in Natural and Applied Sciences Determinant Factors and Tourist Satisfaction Index : A Case Study at the Pulau Kapas Marine Park. Advances in Natural and Applied Sciences, 8(January), 5–11.

Sánchez-Fernández, R., & Iniesta-Bonillo, M. Á. (2007). The concept of perceived value: A systematic review of the research. Marketing Theory, 7(4), 427–451. http://doi.org/10.1177/1470593107083165

Schiefelbusch, M., Jain, A., Schäfer, T., & Müller, D. (2007). Transport and tourism: roadmap to integrated planning developing and assessing integrated travel chains. Journal of Transport Geography, 15(2), 94–103. http://doi.org/10.1016/j.jtrangeo.2006.12.009

Seetanah, B., & Khadaroo, J. (2009). An analysis of the relationship between transport capital and tourism development in a dynamic framework. Tourism Economics, 15(4), 785–802. http://doi.org/10.5367/000000009789955215

Shahin, A., & Zairi, M. (2009). Kano model: A dynamic approach for classifying and prioritising requirements of airline travellers with three case studies on international airlines. Total Quality Management, 20(9), 1003-1028.

Shahrivar, R. B. (2012). Factors that influence tourist satisfaction. Journal of Travel and Tourism Research, (January 2012), 61–79. http://doi.org/10.1017/CBO9781107415324.004

Singh, S. K. (2012). Urban Transport in India : Issues , Challenges , and the Way Forward, (52), 1–26.

Singleton, P. (2013). A Theory of Travel Decision-Making with Applications for Modeling Active Travel Demand, 1–255. http://doi.org/10.15760/etd.1493

Song, H., Li, G., van der Veen, R., & Chen, J. L. (2011). Assessing mainland Chinese tourists' satisfaction with Hong Kong using tourist satisfaction index. International Journal of Tourism Research, 13(1), 82-96.

Song, H., van der Veen, R., Li, G., & Chen, J. L. (2012). The Hong Kong tourist satisfaction index. Annals of Tourism Research, 39(1), 459–479. http://doi.org/10.1016/j.annals.2011.06.001

Sorupia, E. (2005). Rethinking the role of transportation in tourism. In Proceedings of the Eastern Asia Society for Transportation Studies(Vol. 5, pp. 1767-1777).

Steenkamp, J. B. E., & Van Trijp, H. C. (1989). A methodology for estimating the maximum price consumers are willing to pay in relation to perceived quality and consumer characteristics. Journal of International Food & Agribusiness Marketing, 1(2), 7-24.

Suanmali, S. (2014). Factors Affecting Tourist Satisfaction: An Empirical Study in the Northern Part of Thailand. Web of Conferences, 12. http://doi.org/10.1051/shsconf/20141201027

Suhr, D. D. (2006). Exploratory or confirmatory factor analysis? Statistics and Data

Analysis Paper 200-31 University of Northern Colorado SUGI 31,1-17.

Sweeney, J., & Soutar, G. (2001). Consumer perceived value: the development of a multiple item scale. Journal of Retailing, 77(2), 203–220. http://doi.org/10.1016/S0022-4359(01)00041-0

Synodinos, N. E. (2003). The "art" of questionnaire construction: some important considerations for manufacturing studies. Integrated manufacturing systems, 14(3), 221-237.

Tepanon, Y., & Uysal, M. (2008). Measuring tourist satisfaction by attribute and motivation: The case of a nature-based resort. Journal of Vacation Marketing, 14(1), 41–56. http://doi.org/10.1177/1356766707084218

Thomas, T. K. (2013). Modeling the Index Components of Tourist Satisfaction for Destination Performance Evaluation: a Study on Kerala Tourism. BEST EN Think Tank XIII, 290–307.

Thompson, K., & Schofield, P. (2007). An investigation of the relationship between public transport performance and destination satisfaction. Journal of Transport Geography, 15(2), 136–144.

Tóth, G., & Dávid, L. (2010). Tourism and accessibility: An integrated approach. Applied Geography, 30(4), 666–677. http://doi.org/10.1016/j.apgeog.2010.01.008

Tourist Satisafaction Index retrieved from https://www.touristsatisfaction.org/uploads/1/6/5/1/16512380/tsi_2014__artwork_0715_r1_full_set.pdf and https://www.touristsatisfaction.org/uploads/1/6/5/1/16512380/tsi_tsqi_2016_report.pdf

Transportation Research Board. (1999). A Handbook for Measuring Customer Satisfaction and Service Quality. Transit Cooperative Research Program, Report 47.

Transportation Research Board. (2004). Retrieved from http://www.trb.org/Publications/Blurbs/155326.aspx

Troxel, E. (1955). Economics of Transport, New York: Rinehart and Co.

Truong, T. H., & Foster, D. (2006). Using HOLSAT to evaluate tourist satisfaction at destinations: The case of Australian holidaymakers in Vietnam. Tourism management, 27(5), 842-855.

Tyrinopoulos, Y., & Antoniou, C. (2008). Public transit user satisfaction: Variability and policy implications. Transport Policy, 15(4), 260–272.

http://doi.org/10.1016/j.tranpol.2008.06.002

Valle, P. O. D., Silva, J. a., Mendes, J., & Guerreiro, M. (2006). Tourist satisfaction and destination loyalty intention : A structural and categorical analysis. International Journal of Business Science and Applied Management, 1(1), 25–44.

Virkar, A. R., & Mallya, P. D. (2018). A Conceptual Paper on the Dimensions of the Road Transport System that Influence Tourist Satisfaction. International Journal of Research in Social Sciences, 8(3), 296-303.

Virkar, A. R., & Mallya, P. D. (2018). A review of dimensions of tourism transport affecting tourist satisfaction. Indian Journal of Commerce and Management Studies, 9(1), 72-80.

Virkar, A. R., & Mallya, P. D. (2018). An Analysis of the Factors Influencing Tourist Satisfaction with Public Transport in Goa. Indian Journal of Commerce and Management Studies, Vol.–V, Special Issue, 55-61.

Wang, X., Zhang, J., Gu, C., & Zhen, F. (2009). Examining antecedents and consequences of tourist satisfaction: A structural modeling approach. Tsinghua Science & Technology, 14(3), 397-406.

Wang, Y. (2016). More Important than Ever: Measuring Tourist Satisfaction. Griffith Institute for Tourism Research Report Series (Vol. 10).

Waryszak, R., & King, B. (2000). Tourists and taxis: An examination of the tourism transport interface. Journal of Vacation Marketing, 6(4), 318–328. http://doi.org/10.1177/135676670000600403

Williams, P., & Soutar, G. N. (2000, November). Dimensions of customer value and the tourism experience: An exploratory study. In Australian and New Zealand Marketing Academy Conference (Vol. 28).

Wu, H. H., & Shieh, J. I. (2010). Quantifying uncertainty in applying importance-performance analysis. Quality & Quantity, 44(5), 997-1003.

Yavas, U., & Shemwell, D. J. (2001). Modified importance-performance analysis: an application to hospitals. International Journal of Health Care Quality Assurance, 14(3), 104-110.

Year wise distribution of Domestic and Foreign Tourist Arrivals retrieved fromhttp://goatourism.gov.in/statistics/333

http://www.goadpse.gov.in/Economic%20Survey%202017-18.pdf

http://www.goadpse.gov.in/Economic%20Survey%202018-19.pdf

Yi, Y. (1990). A critical review of consumer satisfaction. Review of marketing, 4(1), 68-123.

Yüksel, A., & Yüksel, F. (2001). The Expectancy-Disconfirmation Paradigm: A Critique. Journal of Hospitality and Tourism Research, 25(2), 107–131. http://doi.org/10.1177/109634800102500201

Yuksel, A., & Yuksel, F. (2008). Consumer Satisfaction Theories: A Critical Review. … Measurement and Management Issues in the …, (1984), 5

Zeithaml, V. (1988). Consumer Perceptions of Price, Quality, and Value: A Means-End Model and Synthesis of Evidence. Journal of Marketing, 52(3), 22. http://doi.org/10.2307/1251446

Zeithaml, V. A. (1981). How Consumer Evaluation Processes Dlffer Between Goods And Services

Zhang, C., Cao, X., Nagpure, A., & Agarwal, S. (2017). Exploring rider satisfaction with transit service in Indore , India : an application of the three-factor theory, 7867(November).

Zohrabi, M. (2013). Mixed Method Research: Instruments, Validity, Reliability and Reporting Findings. Theory & practice in language studies, 3(2).

Zoltan, J. (2014). Understanding tourist behaviour in terms of activeness and intra-destination movement patterns for managing tourism experience, 110.

APPENDICES

Appendix-A

Instrument for validation

Respected Sir/Madam,

I am a Research Scholar at Research Centre in Management Studies, VVM's Shree Damodar College of Commerce & Economics, affiliated to Goa University. The topic of my Ph.D. research study is "Tourist Satisfaction with Road Transport Services at the Destination". This cross sectional study will be conducted by interviewing tourists who have used road transport services during the visit within Goa.

Kindly give your valuable suggestions and expert guidance to make this study complete and contributory. I request you to kindly return the validated instrument by 24th March 2018.

Yours faithfully,

Anjali Virkar

Ph.D. Scholar

Guide
Dr.Prita D. Mallya,
Research Centre in Management Studies,
VVM's Shree Damodar College of Commerce & Economics
Margao Goa

Research Objectives

1. To determine whether tourists' perception of transport accessibility, perceived performance and perceived value have any influence upon their satisfaction with road transport services at the destination.
2. To determine the level of tourist satisfaction with various modes of transport at the destination.
3. To determine whether the mode of transport influences the relationship between transport accessibility, perceived performance, perceived value and tourist satisfaction.
4. To examine tourists' perception of services delivered by transport service providers in terms of importance attached to the service attributes and satisfaction derived.

The Questionnaire for the survey is developed

1) using scales from "A Handbook for Measuring Customer Satisfaction and Service Quality" of Transportation Research Board (1999) (by adapting the relevant items), and
2) by referring studies on transport and tourism for the construct 'transport accessibility'.

Background theory and model

The study proposes to use Fornell's (1991) Framework Of Customer Satisfaction as its background theory and adopts Tourist Satisfaction Model i.e. American Customer Satisfaction model which is a cause-and-effect model of tourist satisfaction. and their post-purchase evaluation. **Kindly give your response on a 4-point ordinal scale**

SCORE AND ITS DESCRIPTION	
For RELEVANCE	1 – not relevant 2 - item needs some revision 3 - relevant but needs minor revision 4 – relevant
For CLARITY	1 – not clear 2 - item needs some revision 3 - clear but need minor revision 4 – clear
For SIMPLICITY	1 – not simple 2- item needs some revision 3- simple but need minor revision 4- simple

The following questions are designed to understand which mode was used by the tourist, important attributes while choosing a mode and satisfaction with availability of transport modes.

Which mode did you mainly use during your visit? (Tick any one)

	Modes of transport	Relevance (1-4)	Clarity (1-4)	Simplicity (1-4)
A	Public bus transport (Kadamba Transport			
B	Private bus transport			
C	Sightseeing vehicles arranged by hotels, tour			
D	Government sightseeing vehicles			
E	Taxi/ Cab			
F	Motor cycle taxi (Pilot)			
G	Rent a bike/ car			
H	Auto rickshaw			
Comments/ Suggestions				

Instruction: While choosing a transport mode, please rate how important each of these attributes is on a scale, with **1= not at all important, 2= slightly important, 3= somewhat important, 4= very important and 5 = extremely important.**

	Attributes	Relevance (1 -4)	Clarity (1 -4)	Simplicity (1 -4)
A	Comfort			
B	Convenience			
C	Safety			
D	Best priced			

E	Flexibility			
F	Environment- friendly			
G	Time saving			
H	Availability			
Comments/ Suggestions:				

Operational definition of Transport Accessibility: Transportation element of accessibility taking into account the quality of local transport, determined by the quality of services provided by the transportation system, which are private and public transport aspects of overall tourism, including transportation infrastructure, equipments and facilities, and operations.

Transport Accessibility: To measure transport accessibility, the following measurement items were identified from the literature and adapted in the study. These items are related to components of transport system which may have influence on tourist satisfaction while using transport services.

Variables	Measurement Item
Operational factors	1) Convenience of local transportation services
	2) Availability of travel information
	3) Frequency of local transport services
Equipments	4) Local transport vehicles are safe
	5) Easy access through different modes of transport
Infrastructure:	6)Quality of streets and road signs
	7) Availability of local parking
Facilities	8) Network of local transport services
	9) Level of local transportation prices

Instruction: How satisfied are you with each component of the transport system in Goa? Please rate each component on a scale of 0 to 10, where **0 =very dissatisfied and 10 = very satisfied**

Scale: (An 11 point scale is used for this construct as per the requirement of tourist satisfaction index)

	Components	Relevance (1 -4)	Clarity (1 -4)	Simplicity (1 -4)
A	Convenience of local transportation services			
B	Availability of travel information			
C	Safety of Local transport vehicles			
D	Easy access through different modes of transport			
E	Quality of roads and signs			
F	Availability of local parking			
G	Network of local transport services			
H	Level of local transportation prices			
Comments/ Suggestions:				

Service Quality: Service quality is a measure of how well the service level delivered matches customer expectations, while a firm delivering quality services means conforming to customer expectations on a consistent basis (Transportation Research Board 1999, 2004). Therefore the extent to which service performance matches customer expectations influences the degree to which the customer feels satisfied. These are questions related to service quality attributes of transport service, which might be considered important and may also influence tourist satisfaction during their visit.

Please tick all the modes used by you during your visit?

		Relevance	Clarity	Simplicity
		(1-4)	(1-4)	(1-4)
A	Public bus transport (Kadamba Transport			
B	Private bus transport			
C	Sightseeing vehicles arranged by hotels, tour			
D	Government sightseeing vehicles			
E	Taxi/ Cab			
F	Motor cycle taxi (Pilot)			
G	Rent a bike/ car			
H	Auto rickshaw			
Comments/ Suggestions				

Instruction: Please rate how **important** each of these attribute is on a scale from 1 to 5 with "**1" =not at all important, "2"= slightly important, "3"= somewhat important, "4"= very important and "5"=extremely important** and also how **satisfied** were you with these service attributes using 1 to 5 with "**1" =not at all satisfied, "2"= slightly satisfied, "3"= somewhat satisfied, "4"= very satisfied and "5"=extremely satisfied.**

	Components	Relevance (1 -4)	Clarity (1 -4)	Simplicity (1 -4)
	Attributes			
1	The cost effectiveness, affordability and value of my trip within Goa.			
2	Ease of paying fare.			
3	Consistency of fare structure			
4	Friendly, courteous and quick service from personnel.			
5	Companies provide safe and brand new vehicles.			
6	Vehicles are clean.			
7	Safety from crime on vehicle			
Comments/ Suggestions:				

Please answer this question only if you have used Bus, Cab, Motorcycle taxi (Pilot) and Auto- rickshaw to travel within Goa.

Instruction: Please rate these attributes on a scale from 1 to 5 with "**1" =not at all important, "2"= slightly important, "3"= somewhat important, "4"= very important and "5"=extremely important** and also how **satisfied** were you with these service attributes using 1 to 5 with "**1" =not at all satisfied, "2"= slightly satisfied, "3"= somewhat satisfied, "4"= very satisfied and "5"=extremely satisfied.**

	Attributes	Relevance (1 -4)	Clarity (1 -4)	Simplicity (1 -4)
1	The availability of schedule /information at stops			
2	Transit personnel know system and can provide travel information.			
3	Personnel are polite and friendly while communicating with passengers			
4	Drivers appreciate safety of passengers when they get on / off the vehicles			
5	Drivers drive smoothly and their road craft is fine.			
6	The smoothness of ride and stops.			
7	Safe and competent drivers			
8	The vehicles travelling at safe speed.			
Comments/ Suggestions				

Please rate these attributes if you have travelled by Local transport buses or Sightseeing buses within Goa.

Instruction: Please rate these attributes on a scale from 1 to 5 with "**1" =not at all important, "2"= slightly important, "3"= somewhat important, "4"= very important and "5"=extremely important** and also how **satisfied** were you with these service attributes using 1 to 5 with "**1" =not at all satisfied, "2"= slightly satisfied, "3"= somewhat satisfied, "4"= very satisfied and "5"=extremely satisfied.**

	Attributes	Relevance (1 -4)	Clarity (1 -4)	Simplicity (1 -4)
1	Frequent services so that wait times are short.			
2	Frequency of service on Saturday and Sundays			
3	Reliable – comes on time and reaches on time			
4	The hours of services during week days.			
5	Complaint handling system.			
6	Dependability in handling your service related problems			
7	Clear and timely announcements at stops.			

8	Explanation and announcements of delays.			
9	Route and Direction information visible on vehicles.			
10	The cost of making transfers.			
11	Noise on the vehicles is not too loud.			
12	Air conditioning is very comfortable.			
13	No Graffiti (Scribbling) on vehicles.			
14	Availability of seats.			
15	Temperature and humidity on vehicles (Not hot/cold).			
16	Vehicles are not overcrowded.			
17	Comfort while waiting at stops.			
18	Freedom on the vehicle from the nuisance behaviour of other riders.			
19	The availability of shelter and benches at stops.			
20	Having stops near destination.			
21	The physical conditions of stops.			
22	Cleanliness of stops.			
23	Safety from crime at stops.			
24	The availability of schedule / maps at stops.			
25	Absence of graffiti (Scribbling) at stops.			
Comments/ suggestions				

APPENDIX-B

QUESTIONNAIRE

TOURIST SATISFACTION WITH ROAD TRANSPORT SERVICES IN GOA

Dear Sir/Madam,

I am Anjali Virkar, a research scholar at Goa University. I am conducting this survey as part of my Ph.D. study. The topic of my Ph.D. research study is "Tourist Satisfaction with Road Transport Services at the Destination" This study aims to investigate tourists' use of the road transport services in Goa. It seeks to identify their level of satisfaction and factors influencing the quality of their experience with transport in Goa. The results of this study are expected to help understand tourist transport needs and to respond to their expectations more effectively.

Completion of this questionnaire will take approximately 10-15 minutes. Your answers will be treated as anonymous. The results may be used for conference reports or journal publications and shared with local transport providers and policymakers.

Instruction: <u>Please answer all the questions except Q.17b or Q.17 c, answer as applicable</u>

<u>Part A. Your trip in Goa</u>

1. Is this your first trip to Goa? 1) Yes 2) No

If No, how many times have you previously visited Goa? _____

2. Have you used Local transport services in Goa during this visit?

1) Yes 2) No

3. Who are you travelling with?

By yourself		Family or friends		Colleagues	

4. What is the main purpose of your trip?

Business		Holiday	

5. Your length of stay in Goa this time is _____ days.

6.How important was each of the following statements for you as the reasons for visiting Goa, Please rate the importance on a scale of 1 to 5 with **1= not at all important and 5 = extremely important.**

	Reasons for visiting Goa	Not at all important	Slightly important	Somewhat important	Very important	Extremely important
1	Sightseeing and Experiencing Goa	1	2	3	4	5
2	Relaxation and socializing	1	2	3	4	5
3	Official/ business related visits.	1	2	3	4	5

Part B Evaluating Transport Mode

7. Which mode did you mainly use during your visit? (Tick any one)

Public bus transport (Kadamba Transport Corporation)		Taxi/ Cab	
Private bus transport		Motor cycle taxi (Pilot)	
Sightseeing vehicles arranged by hotels, tour operators		Rent a bike/ car	
Government sightseeing vehicles		Auto rickshaw	

8. How did you choose the transport mode for your travel within Goa?

By booking through online services.		By yourself after reaching Goa	
By booking through travel agents or packaged tours			

9. While choosing a transport mode, please rate how important each of these attributes is on a scale of 1 to 5, with **1= not at all important and 5 = extremely important**.

		Not at all important	Slightly important	Somewhat important	Very important	Extremely important
1	Comfort	1	2	3	4	5
2	Convenience	1	2	3	4	5
3	Safety	1	2	3	4	5
4	Best price	1	2	3	4	5
5	Environment-friendliness (causes less pollution)	1	2	3	4	5
6	Time saving	1	2	3	4	5
7	Availability	1	2	3	4	5

10. How satisfied were you with your choice of transport mode during your trip? Please rate your satisfaction on a scale of 1 to 5, with **1 = Not at all satisfied** and **5 =extremely satisfied**.

Not at all satisfied	Slightly satisfied	Somewhat satisfied	Very satisfied	Extremely satisfied
1	2	3	4	5

11. How easily was the mode available for use in Goa? Please rate it on a scale of 1 to 5 **where 1= very difficult and 5= extremely easily available**.

Very difficult	Slightly difficult	Somewhat easily available	Very easily available	Extremely easily available
1	2	3	4	5

Part C: Please answer all the questions as per the instructions given.

12) Your satisfaction with the road transport services.

How satisfied are you with each component of the road transport services used in Goa? Please rate each component on a scale of 0 to 10, where "**0" = "very dissatisfied" and "10" = "very satisfied".**

No	Components of transport services											
1	Convenience of local transportation services.	0	1	2	3	4	5	6	7	8	9	10
2	Availability of travel information.	0	1	2	3	4	5	6	7	8	9	10
3	Safety of local transport vehicles.	0	1	2	3	4	5	6	7	8	9	10
4	Easy access through different modes of transport.	0	1	2	3	4	5	6	7	8	9	10
5	Quality of roads.	0	1	2	3	4	5	6	7	8	9	10
6	Quality of signs.	0	1	2	3	4	5	6	7	8	9	10
7	Quality of streetlights.	0	1	2	3	4	5	6	7	8	9	10
8	Availability of local parking.	0	1	2	3	4	5	6	7	8	9	10
9	Network of local transport services.	0	1	2	3	4	5	6	7	8	9	10
10	Level of local transportation prices.	0	1	2	3	4	5	6	7	8	9	10

13) Your actual experiences with the road transport services provided.

Considering all your experiences during the visit and with services received from road transport providers. Please rate the performance of the road transport services on a scale of 0 to 10 (the meaning of the scale will change slightly from question to question.

1. Considering all your experiences with the service provider, how would you rate the overall quality of service you have received from this service provider?

0	1	2	3	4	5	6	7	8	9	10

On which **"0" means "not very high"** **And "10" means "very high"**

2. Considering your personal requirements, and evaluation of services received from the service provider, how well has the transport service provider actually met your personal requirements?

0	1	2	3	4	5	6	7	8	9	10

On which **"0" means "not very well"** **And "10" means "very well"**

3. Considering actual experience, how often have things actually gone wrong with the services received from your transport service provider?

0	1	2	3	4	5	6	7	8	9	10

On which "**0" means "Very often"** **And "10" means "not very often"**

14) Your Value for services received

Now, please consider the value of the transport service received in terms of both price and quality and rate the value of the transport services on a scale of 0 to 10,

1. Given the quality of the transport services, how would you rate the price that you paid for services?

0	1	2	3	4	5	6	7	8	9	10

On which **"0" means "Very poor price given the quality"** **And "10" means "very good price given the quality"**

2. Given the price that you paid for the transport services, how would you rate the quality of the services provided by the transport system?

0	1	2	3	4	5	6	7	8	9	10

On which **"0" means "Very poor quality given the price"** **And "10" means "very good quality given the price"**

15) Your satisfaction with the road transport system (Overall Satisfaction)

Satisfaction includes many things. Considering your overall experience please answer these questions and rate them on a 0-10 scale,

1. Considering all your experiences with the transport services used, how satisfied are you with the services provided?

0	1	2	3	4	5	6	7	8	9	10

On which **"0" means "Very dissatisfied"** **And "10" means "very satisfied"**

2. Considering all of your expectations, to what extent has the transport system fallen short of your expectation or exceeded your expectations?

0	1	2	3	4	5	6	7	8	9	10

On which **"0" means "fallen very short of expectations"** **And "10" means "exceeded my expectations"**

3. Forget this transport system for a moment. Now I want you to imagine an ideal transport system, how well do you think the transport system compares with that ideal transport system?

0	1	2	3	4	5	6	7	8	9	10

On which **"0" means "not very close to ideal"** **and "10" means "very close to ideal".**

Part D: Service quality attributes

Please answer questions Q.16b or Q.16 c as applicable

16.Below are listed some service quality attributes of transport service, that you might consider important for the modes used and also influence your satisfaction during your visit .

Please rate how **important** each of these attributes is on a scale of 1 to 5 with "**1" =not at all important, "2"= slightly important, "3"= somewhat important, "4"= very important and "5"=extremely important**

and also how **satisfied** were you with these service attributes on a scale of 1 to 5 with "**1" =not at all satisfied, "2"= slightly satisfied, "3"= somewhat satisfied, "4"= very satisfied and "5"=extremely satisfied.**

a. **Please rate these attributes of transport services for the mode used during the trip.**

	Attributes	**Importance**					**Satisfaction**				
1	The affordability of my trip.	1	2	3	4	5	1	2	3	4	5
2	The value for cost of my trip.	1	2	3	4	5	1	2	3	4	5
3	Fair price of my trip.	1	2	3	4	5	1	2	3	4	5
4	Ease of paying fare.	1	2	3	4	5	1	2	3	4	5
5	Consistency of fare structure.	1	2	3	4	5	1	2	3	4	5
6	Personnel are friendly.	1	2	3	4	5	1	2	3	4	5
7	Courteous employees.	1	2	3	4	5	1	2	3	4	5
8	Quick services from personnel.	1	2	3	4	5	1	2	3	4	5
9	Vehicles are safe.	1	2	3	4	5	1	2	3	4	5
10	Vehicles are well maintained.	1	2	3	4	5	1	2	3	4	5
11	Cleanliness of Vehicles.	1	2	3	4	5	1	2	3	4	5
12	Safety from crime on vehicle.	1	2	3	4	5	1	2	3	4	5

b. **Please rate these attributes only if you have used Private Buses, Cabs, Motorcycle taxi (Pilot) and Auto- rickshaw to travel within Goa.**

	Attributes	**Importance**					**Satisfaction**				
1	The availability of schedule /information at stops.	1	2	3	4	5	1	2	3	4	5
2	Staffs are able to provide travel information.	1	2	3	4	5	1	2	3	4	5
3	Personnel are polite and friendly while communicating with passengers.	1	2	3	4	5	1	2	3	4	5
4	Drivers take care of passengers when they get on / off vehicles.	1	2	3	4	5	1	2	3	4	5
5	Drivers are competent.	1	2	3	4	5	1	2	3	4	5
6	The smoothness of ride and stops.	1	2	3	4	5	1	2	3	4	5
7	The vehicles travelling at safe speed.	1	2	3	4	5	1	2	3	4	5

c. Please rate these attributes if you have travelled either by Local transport buses or Sightseeing buses within Goa.

	Attributes	**Importance**					**Satisfaction**				
1	Frequent services so that wait times are short.	1	2	3	4	5	1	2	3	4	5
2	Frequency of service on Saturday and Sundays.	1	2	3	4	5	1	2	3	4	5
3	Reliable – comes on time and reaches on time	1	2	3	4	5	1	2	3	4	5
4	The hours of services available during week days.	1	2	3	4	5	1	2	3	4	5
5	Complaint handling system.	1	2	3	4	5	1	2	3	4	5
6	Clear and timely announcements at stops.	1	2	3	4	5	1	2	3	4	5
7	Explanation and announcements of delays.	1	2	3	4	5	1	2	3	4	5
8	Route and Direction information visible on vehicles.	1	2	3	4	5	1	2	3	4	5
9	The cost of making transfers.	1	2	3	4	5	1	2	3	4	5
10	Noise on the vehicles is not too loud.	1	2	3	4	5	1	2	3	4	5
11	Air conditioning is very comfortable.	1	2	3	4	5	1	2	3	4	5
12	No Graffiti (scribbling) on vehicles.	1	2	3	4	5	1	2	3	4	5
13	Availability of seats.	1	2	3	4	5	1	2	3	4	5
14	Temperature and humidity on vehicles (Not hot/cold).	1	2	3	4	5	1	2	3	4	5
15	Vehicles are not overcrowded.	1	2	3	4	5	1	2	3	4	5
16	Freedom from the nuisance behaviour of other riders on the vehicle.	1	2	3	4	5	1	2	3	4	5
17	Comfort while waiting at stops.	1	2	3	4	5	1	2	3	4	5
18	The availability of shelter and benches at stops.	1	2	3	4	5	1	2	3	4	5
19	Having stops near destination.	1	2	3	4	5	1	2	3	4	5
20	The physical conditions of stops.	1	2	3	4	5	1	2	3	4	5
21	Cleanliness of stops.	1	2	3	4	5	1	2	3	4	5
22	Safety from crime at stops.	1	2	3	4	5	1	2	3	4	5
23	The availability of schedule / maps at stops.	1	2	3	4	5	1	2	3	4	5
24	Absence of graffiti (scribbling) at stops.	1	2	3	4	5	1	2	3	4	5

17. In general, how satisfied are you with road transport services in Goa?

Not at all satisfied	Slightly satisfied	Somewhat satisfied	Very satisfied	Extremely satisfied
1	2	3	4	5

18. In your opinion, how easy is it to use road transport services in Goa?

Very difficult	Slightly difficult	Somewhat easy	Very easy	Extremely easy
1	2	3	4	5

Part E. Your information

Could you please tell me a bit about yourself?

19. Age in years: _____

20. Which is the highest level of formal education you have completed?

Secondary school		Graduate	
Higher secondary school		Post graduate	

21. Your Nationality is: _____

22. Your current household income (per month) is:_____

23. Your gender is: 1) Male 2) Female 3) Transgender

Thank you for your precious time and co-operation.

Appendix-C Process Output 1

H-9a Analysis of Moderation Effect of Modes of Transport on Transport Accessibility and Tourist Satisfaction with Road Transport Services at the Destination

(Using mass transport as the reference group)

Process Output for Moderation analysis

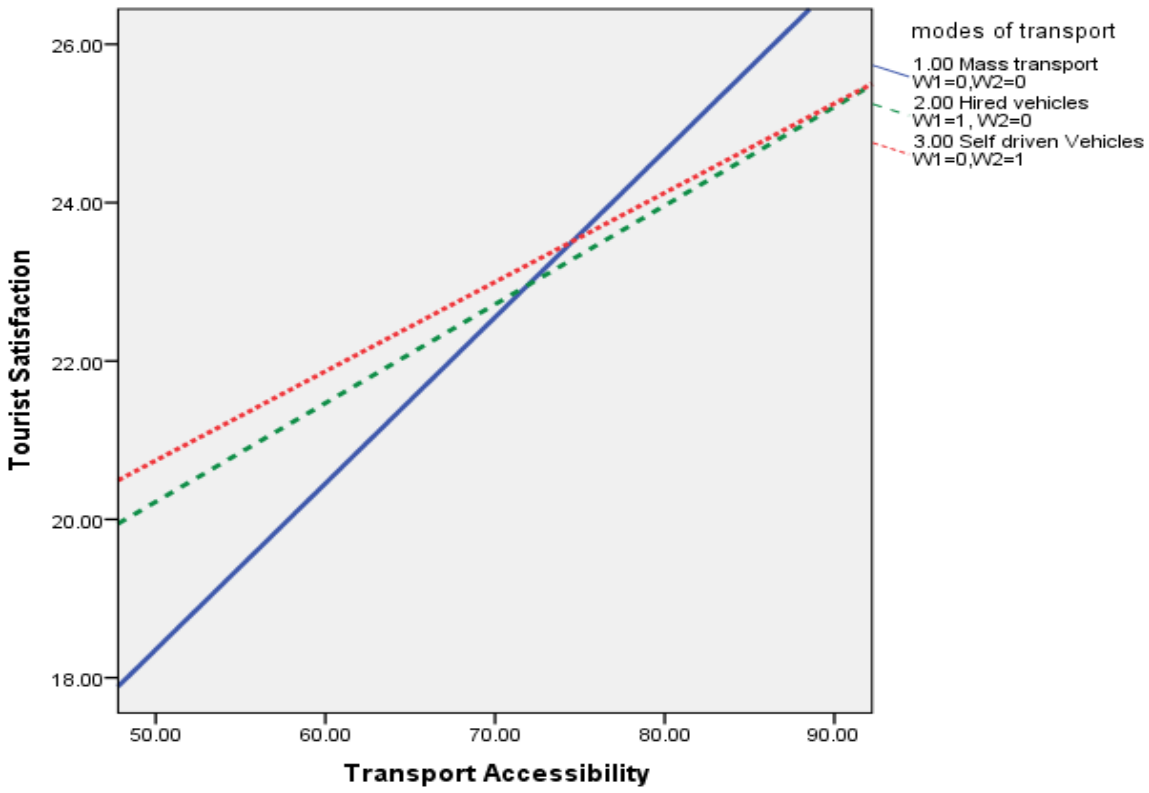
(1= mass transport, 2= hired vehicles 3= self driven vehicles).

1) Moderation by category of mode on accessibility and satisfaction

Run MATRIX procedure:

```
*************** PROCESS Procedure for SPSS Version 3.1 *************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2018). www.guilford.com/p/hayes3

**************************************************************************
Model  : 1
    Y  : Satisfac
    X  : Accessib
    W  : mode_cat

Sample Size:  606

Coding of categorical W variable for analysis:
 mode_cat       W1       W2
    1.000     .000     .000
    2.000    1.000     .000
    3.000     .000    1.000

**************************************************************************
OUTCOME VARIABLE:  Satisfaction

Model Summary
    R       R-sq        MSE          F        df1        df2        p
 .5670      .3215    15.1916    56.8517     5.0000   600.0000    .0000

Model
         coeff         se          t          p       LLCI       ULCI
constant 7.8613     1.1292     6.9619      .0000     5.6437    10.0790
Accessib  .2099      .0155    13.5498      .0000      .1795      .2403
W1       6.1263     1.5879     3.8580      .0001     3.0077     9.2449
W2       7.2472     1.6447     4.4065      .0000     4.0172    10.4772
Int_1    -.0852      .0224    -3.8071      .0002     -.1291     -.0412
Int_2    -.0972      .0237    -4.1085      .0000     -.1436     -.0507

Product terms key:
 Int_1    :        Accessib x        W1
 Int_2    :        Accessib x        W2

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0245    10.8199     2.0000   600.0000      .0000
----------
    Focal predict: Accessib (X)
          Mod var: mode_cat (W)
```

```
Conditional effects of the focal predictor at values of the
moderator(s):
 mode_cat     Effect     se          t       p       LLCI       ULCI
   1.0000     .2099      .0155    13.5498   .0000      .1795      .2403
   2.0000     .1247      .0161     7.7211   .0000      .0930      .1564
   3.0000     .1127      .0179     6.3041   .0000      .0776      .1478

Data for visualizing the conditional effect of the focal predictor:
Paste text below into a SPSS syntax window and execute to produce
plot.

DATA LIST FREE/
   Accessib   mode_cat   Satisfac   .
BEGIN DATA.
    50.0000     1.0000    18.3556
    70.0000     1.0000    22.5534
    83.0000     1.0000    25.2819
    50.0000     2.0000    20.2223
    70.0000     2.0000    22.7161
    83.0000     2.0000    24.3371
    50.0000     3.0000    20.7436
    70.0000     3.0000    22.9977
    83.0000     3.0000    24.4628
END DATA.
GRAPH/SCATTERPLOT=
 Accessib WITH     Satisfac BY       mode_cat .

************************ ANALYSIS NOTES AND ERRORS ********************

Level of confidence for all confidence intervals in output:  95.0000
```



Appendix-D Process Output 2

H-9a Analysis of Moderation Effect of Modes of Transport on Transport Accessibility and Tourist Satisfaction with Road Transport Services at the Destination

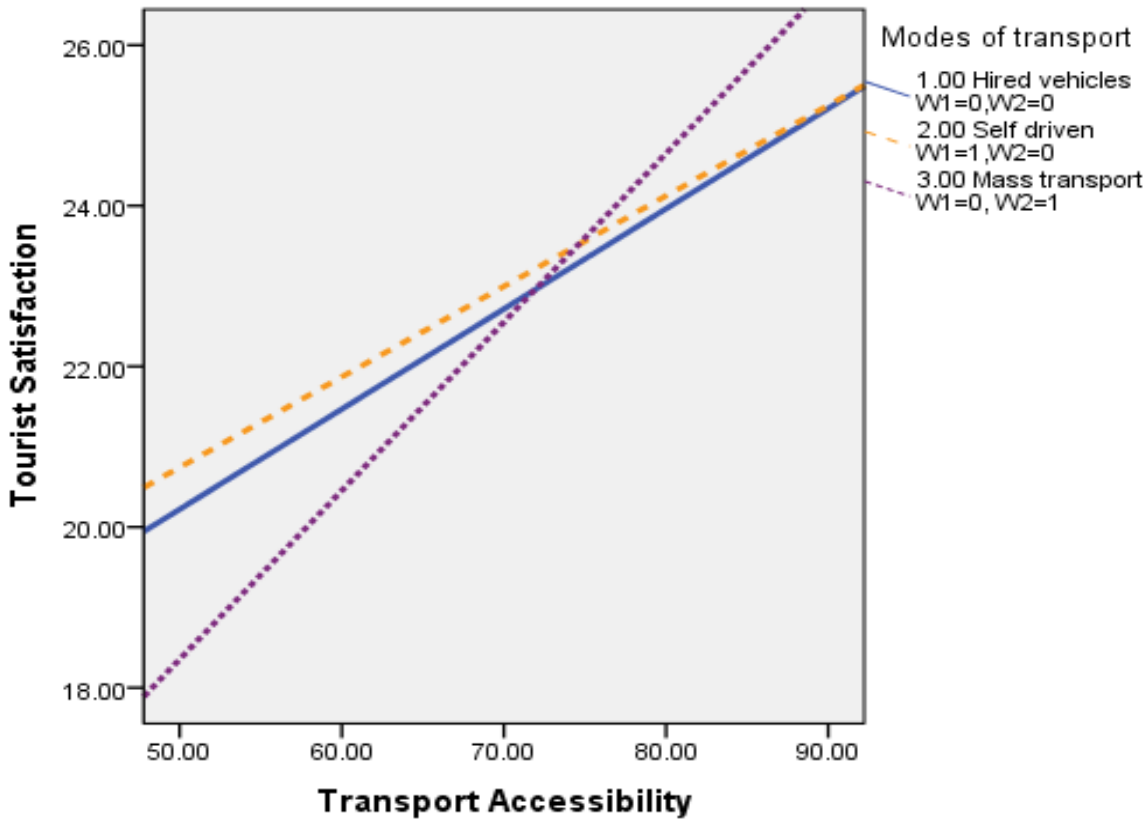
(Using hired vehicles as reference group)

Process Output for Moderation analysis

Recoded ouput 1=HV,2=SD,3=MT Hired vehicles as ref group.

```
1) Moderation by category of mode on accessibility and satisfaction
Run MATRIX procedure:

*************** PROCESS Procedure for SPSS Version 3.1 **************

          Written by Andrew F. Hayes, Ph.D       www.afhayes.com
    Documentation available in Hayes (2018) www.guilford.com/p/hayes3

**************************************************************************
Model  : 1
    Y  : Satisfa
    X  : Accessib
    W  : cat_mode

Sample Size:  606

Coding of categorical W variable for analysis:
 cat_mode       W1       W2
    1.000     .000     .000
    2.000    1.000     .000
    3.000     .000    1.000

**************************************************************************
OUTCOME VARIABLE: Satisfa

Model Summary
   R       R-sq        MSE          F        df1        df2        p
 .5670      .3215    15.1916    56.8517     5.0000   600.0000    .0000

Model
        coeff         se          t          p       LLCI      ULCI
constant 13.9877     1.1164    12.5287      .0000    11.7950  16.1803
Accessib   .1247      .0161     7.7211      .0000      .0930    .1564
W1        1.1209     1.6359      .6852      .4935    -2.0919   4.3338
W2       -6.1263     1.5879    -3.8580      .0001    -9.2449  -3.0077
Int_1     -.0120      .0241     -.4977      .6188     -.0593    .0353
Int_2      .0852      .0224     3.8071      .0002      .0412    .1291

Product terms key:
 Int_1    :        Accessib x        W1
 Int_2    :        Accessib x        W2

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0245    10.8199     2.0000   600.0000      .0000
----------
    Focal predict: Accessib (X)
          Mod var: cat_mode (W)
```

```
Conditional effects of the focal predictor at values of the
moderator(s):

cat_mode      Effect          se           t      p      LLCI        ULCI
  1.0000       .1247       .0161      7.7211   .0000    .0930       .1564
  2.0000       .1127       .0179      6.3041   .0000    .0776       .1478
  3.0000       .2099       .0155     13.5498   .0000    .1795       .2403

Data for visualizing the conditional effect of the focal predictor:
Paste text below into a SPSS syntax window and execute to produce
plot.

DATA LIST FREE/
   Accessib    cat_mode    Satisfa    .
BEGIN DATA.
     50.0000      1.0000     20.2223
     70.0000      1.0000     22.7161
     83.0000      1.0000     24.3371
     50.0000      2.0000     20.7436
     70.0000      2.0000     22.9977
     83.0000      2.0000     24.4628
     50.0000      3.0000     18.3556
     70.0000      3.0000     22.5534
     83.0000      3.0000     25.2819
END DATA.
GRAPH/SCATTERPLOT=
 Accessib WITH      Satisfa BY        cat_mode .

************************ ANALYSIS NOTES AND ERRORS
************************

Level of confidence for all confidence intervals in output:  95.0000
```



Appendix-E Process Output 3

H 9b Analysis of Moderation Effect of Modes of Transport on Perceived Performance and Tourist Satisfaction with Road Transport Services at the Destination

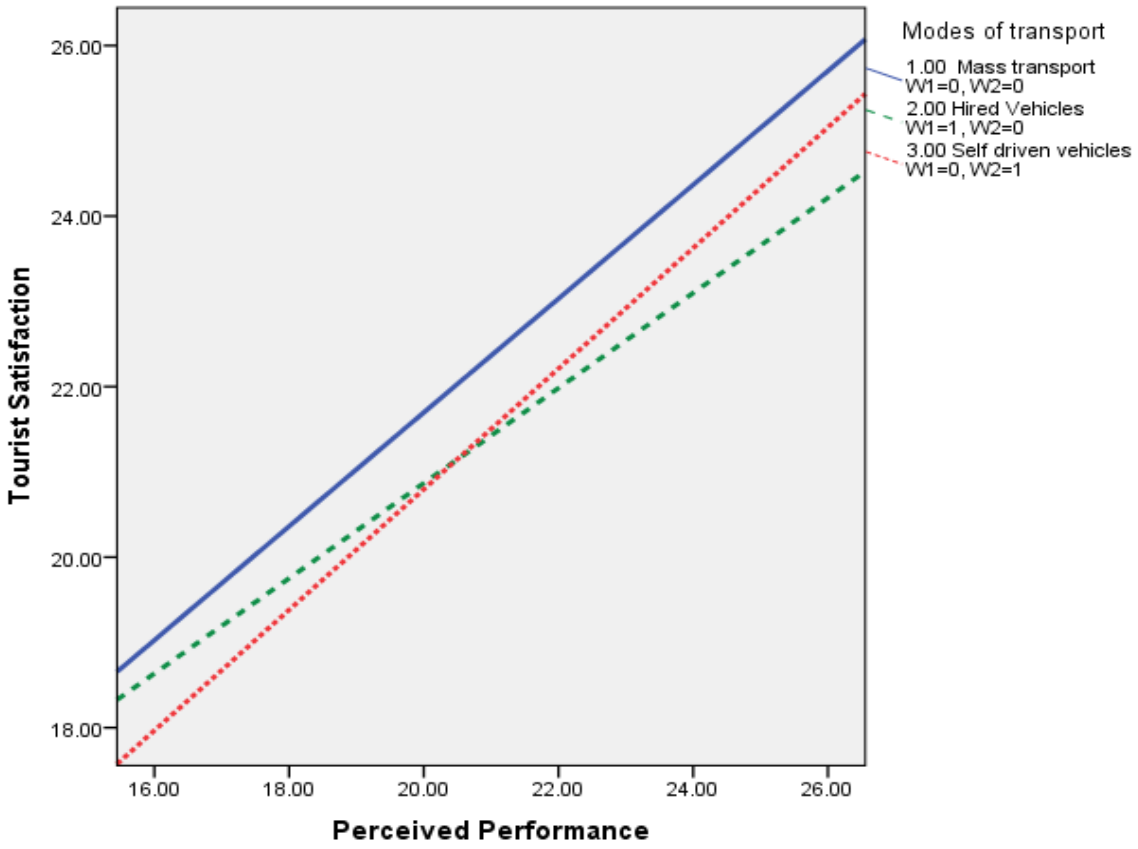
(Using mass transport as the reference group)

Process Output for Moderation analysis

(1= mass transport, 2= hired vehicles 3= self driven vehicles). Mass transport ref group for coding

```
Moderation by category of mode on perceived performance and
satisfaction
Run MATRIX procedure:

*************** PROCESS Procedure for SPSS Version 3.1 **************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2018). www.guilford.com/p/hayes3

Model  : 1
    Y  : Satisfac
    X  : Performa
    W  : mode_cat

Sample Size:  606

Coding of categorical W variable for analysis:
 mode_cat       W1       W2
    1.000     .000     .000
    2.000    1.000     .000
    3.000     .000    1.000

************************************************************************
OUTCOME VARIABLE: Satisfac

Model Summary
  R       R-sq        MSE          F        df1        df2      p
.6882      .4737    11.7840   107.9932     5.0000   600.0000  .0000



Model
         coeff         se          t          p       LLCI       ULCI
constant 8.3441      .8756     9.5295      .0000     6.6245    10.0638
Performa  .6677      .0392    17.0462      .0000      .5908      .7446
W1       1.3660     1.4885      .9177      .3592    -1.5574     4.2893
W2      -1.6959     1.6446    -1.0312      .3029    -4.9257     1.5339
Int_1    -.1098      .0652    -1.6846      .0926     -.2377      .0182
Int_2     .0397      .0728      .5459      .5853     -.1032      .1827

Product terms key:
 Int_1    :        Performa x        W1
 Int_2    :        Performa x        W2

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0037     2.0833     2.0000   600.0000      .1254
----------
```

```
    Focal predict: Performa (X)
          Mod var: mode_cat (W)

Data for visualizing the conditional effect of the focal predictor:
Paste text below into a SPSS syntax window and execute to produce
plot.

DATA LIST FREE/
   Performa    mode_cat    Satisfac    .
BEGIN DATA.
    17.0000      1.0000     19.6946
    24.0000      1.0000     24.3684
    26.0000      1.0000     25.7037
    17.0000      2.0000     19.1945
    24.0000      2.0000     23.0998
    26.0000      2.0000     24.2156
    17.0000      3.0000     18.6743
    24.0000      3.0000     23.6262
    26.0000      3.0000     25.0410
END DATA.
GRAPH/SCATTERPLOT=
 Performa WITH     Satisfac BY       mode_cat .

************************ ANALYSIS NOTES AND ERRORS
************************

Level of confidence for all confidence intervals in output:  95.0000
```



Appendix-F Process Output 4

H 9b Analysis of Moderation Effect of Modes of Transport on Perceived Performance and Tourist Satisfaction with Road Transport Services at the Destination

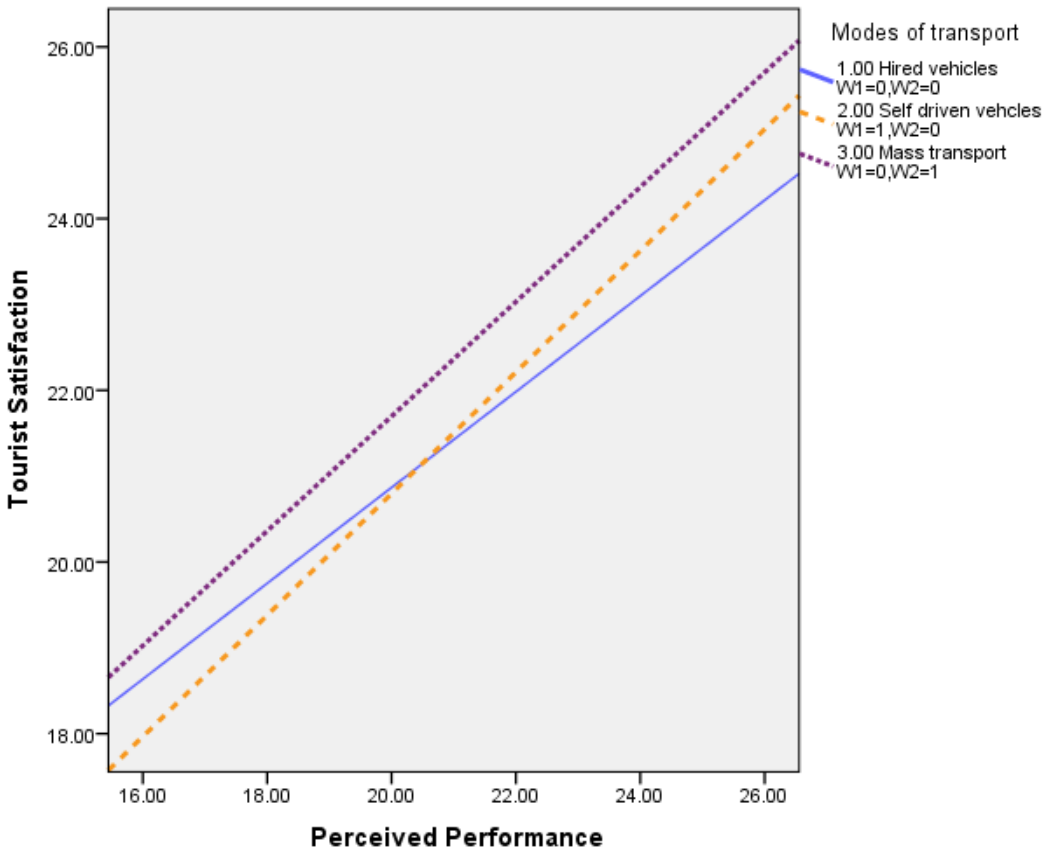
(Using hired vehicles as reference group)

Process Output for Moderation analysis

Recoded output 1=HV,2=SD,3=MT Hired vehicles as ref group.

```
1) Moderation by category of mode on accessibility and satisfaction
Run MATRIX procedure:

*************** PROCESS Procedure for SPSS Version 3.1 **************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2018). www.guilford.com/p/hayes3

Model  : 1
    Y  : Satisfaction
    X  : Performance
    W  : cat_mode

Sample Size:  606

Coding of categorical W variable for analysis:
 cat_mode       W1       W2
    1.000     .000     .000
    2.000    1.000     .000
    3.000     .000    1.000

**************************************************************************
OUTCOME VARIABLE: Satisfaction

Model Summary
R       R-sq        MSE          F        df1        df2      p
.6882    .4737    11.7840   107.9932     5.0000   600.0000 .0000

Model
         coeff         se          t          p       LLCI       ULCI
constant 9.7101     1.2037     8.0666      .0000     7.3460    12.0741
Performa  .5579      .0521    10.7134      .0000      .4556      .6602
W1      -3.0619     1.8403    -1.6637      .0967    -6.6762      .5524
W2      -1.3660     1.4885     -.9177      .3592    -4.2893     1.5574
Int_1     .1495      .0805     1.8578      .0637     -.0085      .3076
Int_2     .1098      .0652     1.6846      .0926     -.0182      .2377

Product terms key:
 Int_1    :        Performa x        W1
 Int_2    :        Performa x        W2

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0037     2.0833     2.0000   600.0000      .1254
----------
    Focal predict: Performa (X)
          Mod var: cat_mode (W)

Data for visualizing the conditional effect of the focal predictor:
```

```
Paste text below into a SPSS syntax window and execute to produce
plot.

DATA LIST FREE/
   Performa    cat_mode    Satisfca    .
BEGIN DATA.
     17.0000      1.0000     19.1945
     24.0000      1.0000     23.0998
     26.0000      1.0000     24.2156
     17.0000      2.0000     18.6743
     24.0000      2.0000     23.6262
     26.0000      2.0000     25.0410
     17.0000      3.0000     19.6946
     24.0000      3.0000     24.3684
     26.0000      3.0000     25.7037
END DATA.
GRAPH/SCATTERPLOT=
 Performa WITH      Satisfa BY       cat_mode .

Level of confidence for all confidence intervals in output:  95.0000
```



Appendix-G Process Output 5

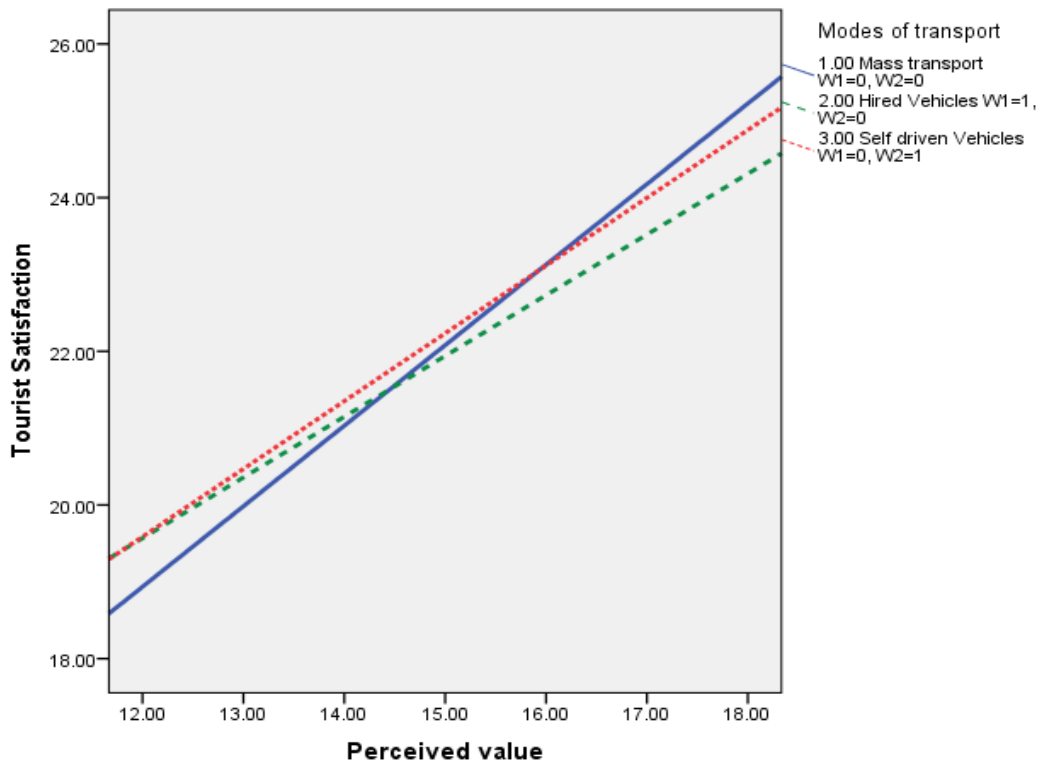
H 9c Analysis of Moderation Effect of Modes of Transport on Perceived Value and Tourist Satisfaction with Road Transport Services at the Destination (Using mass transport as the reference group)

Process Output for Moderation analysis

(1= mass transport, 2= hired vehicles 3= self driven vehicles). Mass transport ref group for coding

```
Moderation by category of mode on perceived value and satisfaction
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 3.1 **************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2018). www.guilford.com/p/hayes3
Model  : 1
    Y  : Satisfaction
    X  : Perceived Value
    W  : mode_cat

Sample Size:  606

Coding of categorical W variable for analysis:
 mode_cat       W1       W2
    1.000     .000     .000
    2.000    1.000     .000
    3.000     .000    1.000

**************************************************************************
OUTCOME VARIABLE: Satisfac

Model Summary
R       R-sq        MSE          F         df1         df2       p
.7093      .5032    11.1238   121.5249     5.0000   600.0000 .0000

Model
         coeff         se          t          p       LLCI       ULCI
constant 6.3580      .9007     7.0591      .0000     4.5891     8.1268
PerValue 1.0482      .0558    18.7822      .0000      .9386     1.1578
W1       3.7246     1.4337     2.5978      .0096      .9088     6.5403
W2       2.6451     1.5150     1.7459      .0813     -.3303     5.6206
Int_1    -.2576      .0898    -2.8700      .0042     -.4339     -.0813
Int_2    -.1661      .0962    -1.7262      .0848     -.3550      .0229

Product terms key:
 Int_1    :        PerValue x        W1
 Int_2    :        PerValue x        W2

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1         df2           p
X*W      .0073     4.3932     2.0000   600.0000      .0128
----------
    Focal predict: PerValue (X)
          Mod var: mode_cat (W)

Conditional effects of the focal predictor at values of the
moderator(s):
```

```
mode_cat      Effect       se           t        p        LLCI        ULCI
  1.0000      1.0482    .0558     18.7822      .0000    .9386      1.1578
  2.0000       .7905    .0703     11.2422      .0000    .6524       .9286
  3.0000       .8821    .0784     11.2554      .0000    .7282      1.0360

Data for visualizing the conditional effect of the focal predictor:
Paste text below into a SPSS syntax window and execute to produce
plot.

DATA LIST FREE/
   PerValue    mode_cat    Satisfac    .
BEGIN DATA.
    12.0000      1.0000     18.9358
    16.0000      1.0000     23.1284
    18.0000      1.0000     25.2248
    12.0000      2.0000     19.5687
    16.0000      2.0000     22.7307
    18.0000      2.0000     24.3118
    12.0000      3.0000     19.5880
    16.0000      3.0000     23.1164
    18.0000      3.0000     24.8805
END DATA.
GRAPH/SCATTERPLOT=
 PerValue WITH      Satisfac BY       mode_cat .

************************ ANALYSIS NOTES AND ERRORS
************************

Level of confidence for all confidence intervals in output:  95.0000
```



Appendix-H Process Output 6

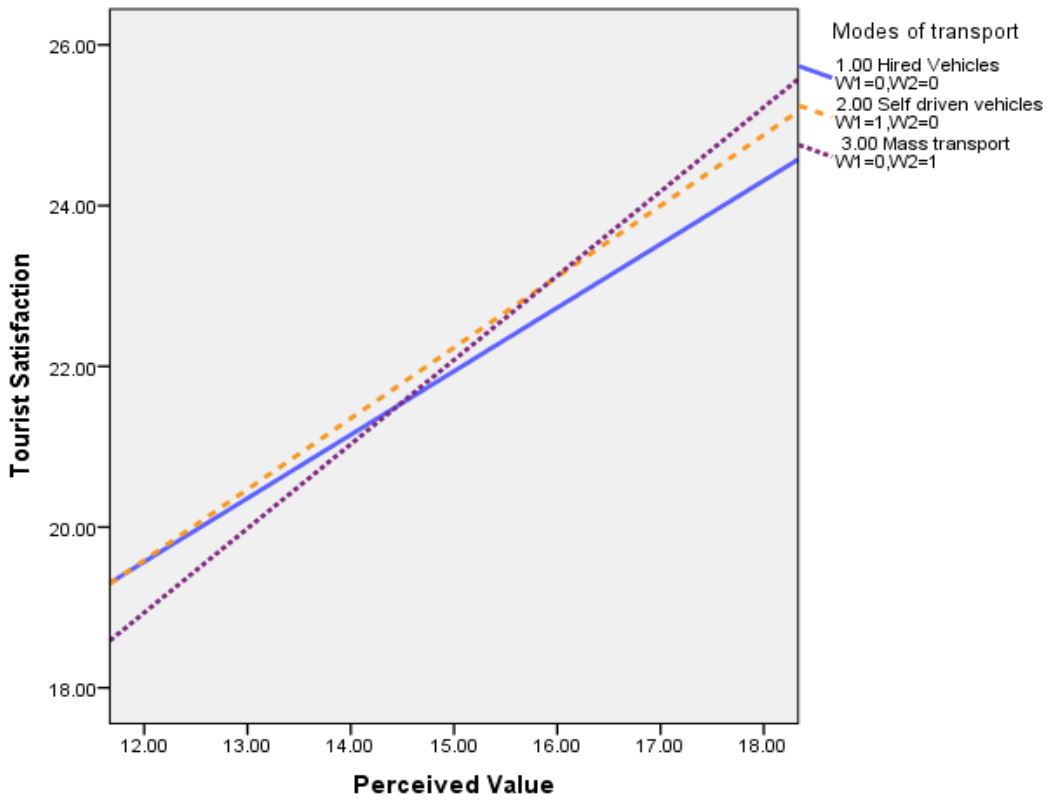
H 9c Analysis of Moderation Effect of Modes of Transport on Perceived Value and Tourist Satisfaction with Road Transport Services at the Destination
(Using hired vehicles as reference group)

Process Output for Moderation analysis

Recoded output 1=HV,2=SD,3=MT Hired vehicles as ref group.

```
1) Moderation by category of mode on accessibility and satisfaction
Run MATRIX procedure:

*************** PROCESS Procedure for SPSS Version 3.1 **************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2018). www.guilford.com/p/hayes3
Model  : 1
    Y  : Satisfaction
    X  : Perceived Value
    W  : cat_mode

Sample Size:  606

Coding of categorical W variable for analysis:
 cat_mode       W1       W2
    1.000     .000     .000
    2.000    1.000     .000
    3.000     .000    1.000

************************************************************************
OUTCOME VARIABLE: Satisfa

Model Summary
 R       R-sq        MSE          F        df1        df2       p
.7093      .5032    11.1238   121.5249     5.0000   600.0000 .0000

Model
         coeff         se          t          p       LLCI       ULCI
constant10.0826     1.1155     9.0385      .0000     7.8918    12.2733
Per_valu  .7905      .0703    11.2422      .0000      .6524      .9286
W1      -1.0795     1.6518     -.6535      .5137    -4.3235     2.1646
W2      -3.7246     1.4337    -2.5978      .0096    -6.5403     -.9088
Int_1     .0916      .1053      .8697      .3848     -.1152      .2984
Int_2     .2576      .0898     2.8700      .0042      .0813      .4339

Product terms key:
 Int_1    :        Per_valu x        W1
 Int_2    :        Per_valu x        W2

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0073     4.3932     2.0000   600.0000      .0128
----------
    Focal predict: Per_valu (X)
          Mod var: cat_mode (W)

Conditional effects of the focal predictor at values of the
moderator(s):

cat_mode     Effect     se          t          p       LLCI       ULCI
```

```
  1.0000       .7905   .0703    11.2422       .0000       .6524       .9286
  2.0000       .8821   .0784    11.2554       .0000       .7282      1.0360
  3.0000      1.0482   .0558    18.7822       .0000       .9386      1.1578


Data for visualizing the conditional effect of the focal predictor:
Paste text below into a SPSS syntax window and execute to produce
plot.


DATA LIST FREE/
   Per_valu    cat_mode    Satisfa    .
BEGIN DATA.
     12.0000      1.0000     19.5687
     16.0000      1.0000     22.7307
     18.0000      1.0000     24.3118
     12.0000      2.0000     19.5880
     16.0000      2.0000     23.1164
     18.0000      2.0000     24.8805
     12.0000      3.0000     18.9358
     16.0000      3.0000     23.1284
     18.0000      3.0000     25.2248
END DATA.
GRAPH/SCATTERPLOT=
 Per_valu WITH     Satisfa BY       cat_mode .
************************ ANALYSIS NOTES AND ERRORS
************************

Level of confidence for all confidence intervals in output:  95.0000
```



Appendix-I

Publications based on Research

- Virkar, A. R., & Mallya, P. D. (2018a). A review of dimensions of tourism transport affecting tourist satisfaction. *Indian Journal of Commerce and Management Studies*, *9*(1), 72-80.

- Virkar, A. R., & Mallya, P. D. (2018b). A Conceptual Paper on the Dimensions of the Road Transport System that Influence Tourist Satisfaction. *International Journal of Research in Social Sciences*, *8*(3), 296-303.

- Virkar, A. R., & Mallya, P. D. (2018c). An Analysis of the Factors Influencing Tourist Satisfaction with Public Transport in Goa. *Indian Journal of Commerce and Management Studies*, Vol.–V, Special Issue, 55-61.