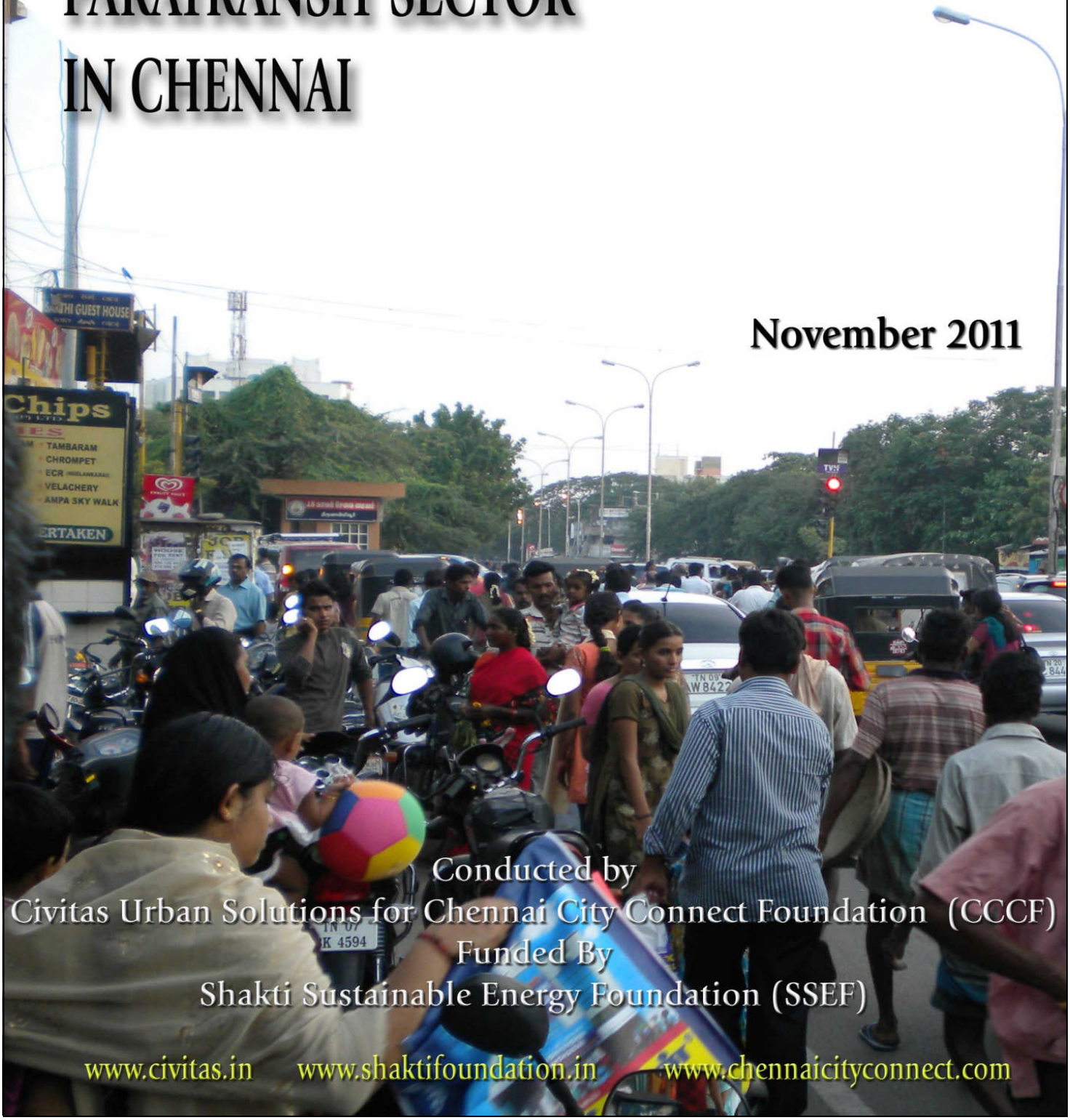
STUDY ON PARATRANSIT SECTOR IN CHENNAI



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Conducted by
Civitas Urban Solutions for Chennai City Connect Foundation (CCCF)
Funded By
Shakti Sustainable Energy Foundation (SSEF)

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About the Authors

Shakti Sustainable Energy Foundation (SSEF)

The Shakti Sustainable Energy Foundation (SSEF) is an NGO whose mission is to create a secure, sustainable, and equitable future for India's citizens by supporting policies and significantly, policy implementation, that promote energy efficiency, sustainable transportation, and renewable energy. Shakti aims to catalyze policy development and implementation, including India's National Action Plan for Climate Change and Integrated Energy Policy. As part of this mission, SSEF has funded this study by Chennai City Connect Foundation on Developing Parking Policy for Chennai.

Chennai City Connect Foundation (CCCF)

Chennai City Connect Foundation (CCCF) is an initiative which brings together various urban stakeholders including residents of the city, employers across the entire range of industries, small and medium firms, bodies like Rotary, industry associations, NGOs, community organizations and other entities outside the government onto a single platform. This helps the government respond in a constructive, collaborative manner to voices coming from outside, to create value-added partnerships.

The aim of CCCF, among other things, is to assist governmental agencies by providing them with a knowledge base and support system to help in the development of urban infrastructure and services.

Civitas Urban Solutions

Civitas Urban Solutions is a specialised entity of Civitas Consultancies working in the area of Urban research and Urban Advisory. Civitas specialises in three categories: Urban, legal, and advisory. They have a consortium of experts working in various fields. Civitas has its research wing in the Centre for Public Policy Research (www.cppr.in) and has partnered with infrastructure companies and urban planners. Composite solutions, supported by rich research experience, help Civitas in its pro-active role in urban infrastructure development. Their core strength is in conducting research; integrating newer developments across the globe and customising them according to the requirements of local conditions, with the help of expert domain knowledge. Civitas has worked in various projects namely Study on Autorikshaw sector in Chennai for Chennai City Connect Foundation, Vyttila Mobility Hub Study Report for Confederation of Indian Industry and is currently involved in Parking studies in Chennai and Kochi.

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List of Abbreviations

AITUC	All India Trade Union Congress
Auto	Autorickshaw
Avg.	Average
BRTS	Bus Rapid Transit System
BS III	Bharat Stage III
BS IV	Bharat Stage IV
BTS	Bangkok Mass Transit System
CITU	Centre of Indian Trade Union
CMA	Chennai Metropolitan Area
CMDA	Chennai Metropolitan Development Authority
CMRL	Chennai Metro Rail Ltd
CNG	Compressed Natural Gas
CST	Chhatrapati Shivaji Terminus
CTS	Comprehensive Transportation Study
CTTS	Comprehensive Traffic and Transportation Study
CUMTA	Chennai Unified Metropolitan Transport Authority
DHRW	Department of Hydrology and River Works
DPR	Detailed Project Report
DMRC	Delhi Metro Rail Corporation

e.g.	For example
G.O.	Government Order
GPS	Global Positioning System
HHI	Household Interview
IPT	Intermediary Public Transport
IT	Information Technology
ITDP	Institute for Transportation and Development Policy
ITES	Information Technology Enabled Services
kg	Kilogramme
km	Kilometre
LPG	Liquified Petroleum Gas
LPF	Labor Progressive Federation
Ltd	Limited
MMDA	Madras Metropolitan Development Authority
MRT	Mass Rapid Transit
MRTS	Mass Rapid Transit System
MTC	Metropolitan Transport Corporation
NH	National Highway
No.	Number
NUTP	National Urban Transportation Policy
PLB	Public Light Buses
PTCS	Pallavan Transport Consultancy Services

₹.	Rupees
RTO	Regional Transport Authority
Share Autos	Share Autorickshaws
Sq. km	Square kilometre
UTODA	Uganda Taxi Operators and Drivers Association
Viz.	Namely
yrs	Years

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Executive Summary

Chennai economy has been successful in enhancing the well-being of the state and its people. Most recent is the transformation to information based, knowledge-driven economy has yielded the state with the highest average household incomes compared to other states. Now, as the twenty-first century unfolds, the association between economic growth and infrastructure investment is becoming a key public policy issue as the state faces a challenge of diminishing transportation resources. Therefore, it is important to observe the periodic economic progression in Chennai on transportation infrastructure.

Mobility has become an important prerequisite for economic growth in Chennai and has altered the transportation land use pattern. Public transport plays a vital role in enabling sustained economic growth. There exist strong linkages between economic growth, efficient mobility system, accessibility and standard of living. The MRTS and rapid rail systems in Chennai was developed as an integral part of mobility but the cities expansion has resulted in connectivity issues and has led to demand for alternative modes of transport. The growing travel congestion and long travel hours have resulted in feeder system. The predominant feeder system in Chennai is the share auto services which exist in various popular pockets of the city.

Share auto have significantly contributed to passenger mobility in Chennai since 1998. The share auto market way back in 1998 had only one predominant player (Vikram) but with the increasing passenger demand the market has 5 players and more are getting added. There are around 1200 of such vehicles plying as share autos, out of which only 200 are given share auto permits. The revenue capacity of the share autos have also increased many folds from when they were initially introduced. Hence it becomes important to promote share autos towards introducing sustainable well-connected public transport system and discouraging the growth of private modes of transport.

The feeder service provided by the share autos in Chennai is unparalleled and they help public transportation modes such as MTC and Suburban Railways to increase their patronage. As Chennai is moving towards more modernized MRT system of transportation by introducing Chennai Metro and BRTS, share autos can definitely bridge the connectivity gap and provide the

missing link. Today share autos rank second in number of passengers served per day catering to around 1.8 million passengers by any mode of public transportation in Chennai (next only to MTC). The share auto industry generates nearly ₹ 2 Crores per day which is 66 times more than the collection of MRTS and giving employment to large number of people.

Though the government encourages share autos by giving licenses they pose lot of restrictions in terms of boundary limitations and considers Para transit services as the major reason for traffic congestion and increasing pollution in the cities. The National Urban Transport Policy does not recognize the share auto sector as a major public transport mode, inspite of it being one of the major mass transportation modes.

Paratransit service is demand driven. The purpose of this project is to understand the demand profile of the share auto, demographic trends of commuters which include frequency of usage market, the key parameters that drive commuters to use share auto service etc. This report also studies how several approaches that are being used successfully by share auto providers to manage growing demand and escalating costs. There shall be a policy level change to integrate share auto sector into the formal transit sector and utilize it as a feeder system for buses, suburban trains and proposed Metro Rail. This can be achieved by having formulating a single co-ordinating system by implementing Chennai Urban Metropolitan Transport Authority (CUMTA). Integration can be achieved through phases, in the initial phase all forms of share autos shall be recognised and categorised into a single entity. Further by providing facilities for share autos and help in catering to the transit requirement of the people. Thirdly, integration with MRTS, Metro Rail etc shall be done through a revenue share basis. Once, Share autos are integrated and accepted as a major transportation mode it will bring relief to a large section of people.

Introduction

1. Introduction

Over the last two decades, Indian cities have become the focus of development and have begun to play a vital role in economic growth and prosperity. The development of cities largely depends upon their physical, social, and institutional infrastructure. Globalization, which is the most prominent economic revolution in the country, demands certain factors such as infrastructure, specialized services and efficient mobility patterns in cities.

As per the 2011 Census, 377.1 million Indians live in cities. The Ministry of Urban Development reports that 40 per cent of Indians will live in cities by 2021. The World Bank estimates that by 2017, the urban population in India will be 500 million. Although urban areas comprise of less than one-third of India's population, they generates over two third of the country's GDP and account for 90 per cent of government revenues.[1]

Urbanization is a catalyst for economic development and efforts are being made to secure maximum benefit out of this inevitable process. However, there are certain bottlenecks that have to be overcome in order to maximize the benefits. The growing population and complicated socio-economic fabric of cities has put tremendous pressure on infrastructural developments, and governments have failed miserably to meet the growing demand for the same.

Transportation is one of the most important infrastructural requirements for apposite growth of an urban economy. With growth stems the need for an increase in mobility. Mismanagement of urban transport has the potential to choke cities and bring economic activity to a grinding halt. Unfortunately, this is a crisis affecting Indian cities at large. The lack of adequate public transport has resulted in a rapid increase in private ownership of vehicles. In most cities, two wheelers comprise more than 70 per cent of total motor vehicles. Motor vehicle sales have also grown significantly over the years. In 2009-2010, the domestic sale of automobiles was 12, 295, 397, which increased to15,513,156 in 2010-2011.[2]

[1] http://www.worldbank.org.in/WBSITE/EXTERNAL/COUNTRIES/SOUTHASIAEXT/INDIAEXTN/0,,contentMDK:21207992~pagePK:141137~piPK:141127~theSitePK:295584,00.html. Accessed on 20August 2011

[2] http://www.siamindia.com/scripts/domestic-sales-trend.aspx. Accesed on 26 August 2011

Vehicles in cities have grown over and above the capacity of the highways and other roads, and, as a result, the main arteries face saturation. The percentage of public transportation vehicles in the vehicular population, however, is very less.

Public agencies operating public transport systems often fail to restructure the modes in line with the changing demand patterns. As a result, public transportation's viability decreases and it is less preferred by the public. In an urban society marred by high levels of poverty, it is all the more necessary that transport – a critical facilitator – is available to all equitably, at an affordable price and service level.[3] In this context, the importance of intra-urban public transportation has become paramount.

[3] Arora, Anvita, Jarnhammar, Mats and Jawed, Faizan. Nov 24-26, 2010. 'Green and Pro-Poor?The Role of Informal Public Transportation in India'.Background Paper for Conference on the "The Environments of the Poor" (Online). New Delhi. Accessed on 15 September 2011 at http://www.scribd.com/doc/42960541/Green-and-pro-poor-The-Case-of-Informal-Transport-in-India-paper

Chennai City

2. Chennai City

2.1. City Profile

The third most urbanized state in India is Tamil Nadu.[4] The extent of the State is 130,058 sq km, of which urban areas accounts for 12,525 sq km[5]. The total population of Tamil Nadu, according to the provisional data of 'Census of India 2011' is 72.13 million. Of this population, 4.6 million live in the city of Chennai, accounting for six per cent of the population.

The Chennai Metropolitan Area (CMA) comprises the city of Chennai, 16 municipalities, 20 town panchayats and 214 village panchayats in 10 Panchayat unions.[6] It falls in three districts of the state, namely Chennai, Thiruvallur and Kancheepuram. While Chennai city extends over an area of 176 sq km, the CMA covers an area of 1189 sq km.[7] In 2010, the CMA was estimated to house a population of about 7.41million.[8]

The Chennai Corporation recently expanded from 174 sq km to 426 sq km, but subsequent changes in infrastructure have not been implemented. The expansion of the city has been causing a strain on the existing urban services and infrastructure. The city faces severe traffic congestion due to exponential growth of personalized vehicles. To tackle this problem, the public transportation sector needs to be carefully planned and managed to meet the growing demands of the city.

The table below projects the city's population for the next 15 years.

Arora, Anvita, Jarnhammar, Mats and Jawed, Faizan. New Delhi. 'Green and Pro-Poor?The Role of Informal Public Transportation in India'.

42960541/Green-and-pro-poor-The-Case-of-Informal-Transport-in-India-paper. Accessed on 15th September 2011

for Chennai Metropolitan Area,2026, Volume III, Chapter III, Demography (Online), Tamil Nadu: Available at http://www.cmdachennai.gov.in/Volume3_English_PDF/Vol3_Chapter03_Demography.pdf. Accessed on 25 August 2011

[6] http://www.cmdachennai.gov.in/. Accessed on 17 August 2011

[7] http://www.cmdachennai.gov.in/. Accessed on 19 August 2011

[8]http://www.worldgazetteer.com/wg.php?x=&men=gcis&lng=en&dat=80&geo=104&srt=pnan&col=aohdq&msz=1500&va=&pt=a, Accessed on 20 August 2011

Table 1: Projected Population of Chennai City and CMA

Sl. No.	Description	Projections			
		2011	2016	2021	2026
1	City	4.68(Actual) million	5.23 Million	5.54 Million	5.85 Million
2	CMA	8.87 million	9.96 million	11.19 million	12.58 million

Source: CMDA[9] and Provisional Population Data, Census of India

2.2. Economic Profile

Chennai can be broadly divided into four regions - North, Central, South and West. While the northern part of Chennai is primarily its industrial hub, Central Chennai is the commercial heart. The western and southern parts of Chennai serve as residential and cultural centers.

According to the Chennai Metropolitan Development Authority's (CMDA) report on 'Master Plan II' for CMA, the area accounts for 16.2 per cent of the State's income. Chennai city, which had a total personal income of ₹ 12,488.83 crore in 2000, solely accounts for 10.94 per cent of the state income.[10] The economy of Chennai is primarily dependent on the secondary and tertiary sectors. According to the CMDA report, 98.5 per cent of the working population is placed in the above mentioned sectors.

Chennai, which is the centre of automobile manufacturing giants in the country, is often referred to as the 'Detroit' of Asia. More than 65 per cent of heavy vehicles produced in the

[9]Chennai Metropolitan Development Authority, Government of Tamil Nadu. September 2008. Second Master Plan for Chennai Metropolitan Area,2026, Volume III, Chapter III, Demography (Online), Tamil Nadu: Available at http://www.cmdachennai.gov.in/Volume3_English_PDF/Vol3_Chapter03_Demography.pdf. Accessed on 20 August 2011

[10]Government of Tamil Nadu. 2008. Highlights of the Recommendations of the State Level Committee on Road Connectivity and Traffic Improvements in Chennai. CMDA(Online). Available at http://www.cmdachennai.gov.in/Highlights_HLC0901200913-1-09.pdf. Accessed on 31 August 2011

country, such as cars, buses, lorries and trains, are produced in the city.[11]The manufacturing units of BMW, Flextronics, Motorola, Dell, TVS, Mitsubishi, Ford, Hyundai, Nokia, Saint Gobain, and Ashok Leyland are based in the city. The other major industries in Chennai include petro-chemicals, fertilizers, automotive tyres, electrical goods and leather products.

This metropolitan city has also become a preferred location for multinational companies to set up their IT hubs. Several software and software service companies have development centers in Chennai; these contributed to 14 per cent of India's total software exports of ₹ 144,214 crore during 2006–07, making it the second largest exporter, by city, of software in the country, second only to Bengaluru.[12]

The city also boasts of infrastructural facilities, such as two major seaports, domestic and international airports, national and state highway networks, Mass Rapid Transit System (MRTS), railway networks, and the upcoming metro system.

2.3. Transportation

The city is internally connected by its road and rail networks. The total length of the road network in Chennai city is 2,780 km. Chennai has radial and ring patterns of road network. The prime radial network comprises Anna Salai (NH45), Periyar EVR Salai (NH4), Chennai-Kolkotta Salai (NH5) and Chennai-Thiruvallur Salai (NH205).[13]Road transportation, which includes public buses, taxis, maxi cabs, autorickshaws, share autos and private automobiles, is managed by public and private players. The rail network consists of the Mass Rapid Transit System and Suburban Railways.

[11]http://en.wikipedia.org/wiki/Economy_of_South_India. Accessed on 31 August 2011

[12] http://en.wikipedia.org/wiki/Chennai. Accessed on 31 August 2011

[13]Chennai Metropolitan Development Authority, Government of Tamil Nadu. September 2008. Second Master Plan for Chennai Metropolitan Area,2026, Volume I, Chapter IV, Traffic and Transportation (Online), Tamil Nadu, Available at http://www.cmdachennai.gov.in/Volume1_English_PDF/Vol1_Chapter04_Transport.pdf. Accessed on 25 August 2011

A brief description of the various modes of public transportation is given below:

2.3.1. Buses

The Metropolitan Transport Corporation (MTC) has monopoly over the city's public bus transportation. The number of buses currently plying in the city is 3,457.[14]The total number of passengers carried by MTC buses per day is an average 5.7 million. The passenger capacity of an MTC bus is 73 (48 sitting and 25 standing). However, it has been noted that in peak hours, an MTC bus carries more than 100 passengers; overcrowding is as high as 150 per cent. The inadequate fleet strength and poor frequency has resulted in inhuman travel conditions. Evidently, the supply of buses is evidently inadequate to meet the demand.

Picture 1: MTC Bus in Chennai

Source: 'The Hindu' news paper

[14] http://www.mtcbus.org/. Accessed on September 18, 2011

The table below gives details of the fleet size of MTC buses, passengers carried per day and the number of routes.

Table 2: MTC Profile

Fleet Size	3,457
Depots	25
Trips per day	42,354[15]
Routes	717
Employees	22,919
Passengers per day (average)	58.52 lakh
Collection per day (average)	223.81 lakh

Source: Metropolitan Transport Corporation and Transport Department Policy Note

Detailed route information of MTC buses is provided in Annexure 1. In the annexure, routes marked in red are those that have very few buses plying on them; commuters are forced to wait for 30 minutes or more. The Study revealed that there have been instances where commuters have had to wait for about three hours to avail of public transportation, highlighting the MTC's

[15]Transport Department Policy Note Demand No. 48 2011-2012,V. SenthilBalaji, Minister for Transport (Online). Available at http://www.tn.gov.in/policynotes/pdf/transport.pdf. Accessed on 1 October 2011

inefficiency to meet the needs of the passengers. Moreover, a periodic revision of routes based on ridership has not been done by the transport department. A good transportation system requires a through route rationalization based on land use patterns and ridership behaviour. However, this has gone amiss in the present system.

2.3.2. Railways

The commuter rail system in CMA is operated by the Indian Railways and runs essentially on three lines:

- Chennai Beach - Tambaram, running southwest
- Chennai Central – Thiruvallur, running west
- Chennai Central – Gummidipoondi, running north

The first two lines have dedicated tracks for intra-city passenger trips, while the third lane essentially caters to the transportation needs of suburban and intercity passengers. There is a fourth line - an elevated Mass Rapid Transit System (MRTS) - which links Chennai Beach to Velachery and is interlinked with the remaining rail network.[16] Both the Chennai Beach – Tambaram and the Chennai Central – Gummidipoondi rail corridors witness overcrowding of trains during peak hours. Despite the development of new corridors, viz. MRTS, the patronage of the system is below par. The Study revealed that poor access and inadequate intermodal integration were the main reasons for the inefficient performance of the public transport system.

Phase I of the MRTS was commissioned in October 1997 and completed at a cost of ₹ 269 crore. The cumulative expenditure of Phase II (up to March 2009) was ₹ 763.85 crore. While operational expenses of the network are about ₹ 18 lakh per day, its earnings amount to about ₹ 3 lakh per day. In effect, the MRTS incurs an annual operational loss of ₹ 54.7 crore. With exceptionally high infrastructural investment and deficiency in ridership, the MRTS has become a loss-making venture.

The table below details the number of passengers in the rail network:

[16]Garg, Sukanya; Gayen, ArchanaSudheer; Jena, Prasant; Jose, Gincy Susan; Ramamurthy, Lakshmi; K M, Jiyad; Dhanuraj, D. 2010. Study on the Autorickshaw Sector in Chennai (Online). Available at http://chennaicityconnect.com/wp-content/uploads/2011/03/Auto-Study-Chennai.pdf.Accessed on 2 July 2011.

Table 3: Number of Passengers Using Rail Network (Per Day)

MRTS	70,000
Suburban Trains	9.6 lakh

Source: The Hindu[17]

2.3.3. Metro Rail

The Chennai Metro Rail project, Phase 1 of which is under construction, aims to provide a fast, reliable, convenient, efficient, modern and economical mode of public transport, which is properly integrated with other forms of public and private transport.[18] Details explaining the project are given below:

Table 4: Corridors and their Lengths

Corridor	Length
Washermenpet to Airport	23.1 km
Chennai Central to St. Thomas Mount	22.0 km
Total	45.1 km

The project cost is expected to be ₹ 11,124 crore (excluding Central and State taxes, interest during constructions and pricing escalation). Other than intra-city passengers, Chennai attracts passengers from neighbouring towns and districts, and even from other states. Arrival of passengers in the CMA by the 92 intercity trains is estimated to be 1.125 lakh per day. Similarly, the arrival of passengers by intercity buses (2,028 arrivals) is estimated to be about 83,000 per day; both account to 1.955 lakh. In addition, there are people who commute back and forth

[17] http://www.thehindu.com/news/cities/Chennai/article553984.ece and http://www.thehindu.com/news/cities/Chennai/article1515259.ece Accessed on 31 August 2011

[18] http://chennaimetrorail.gov.in/. Accessed on 31 August 2011

daily for work, education, business, and others from the adjoining and nearby districts. These daily commuters are estimated to be 20,000. Hence, the people arriving in the CMA through trains, buses and air is estimated to be about 2.25 lakh and an equal number of persons may be departing from the metropolitan area. This floating population should also be taken into account while planning infrastructure development in CMA.[19]

2.3.4. Vehicular Position in Chennai

The total vehicle population in Chennai, as on April 1, 2011, was 35,63,414; cars account for 56,758 and motor bikes 25,81,534. The total number of private vehicles in the city is 26,38,292, 74 per cent of the total vehicle population. According to the CMDA, this figure has been increasing at the annual rate of 9.7 per cent over the years.

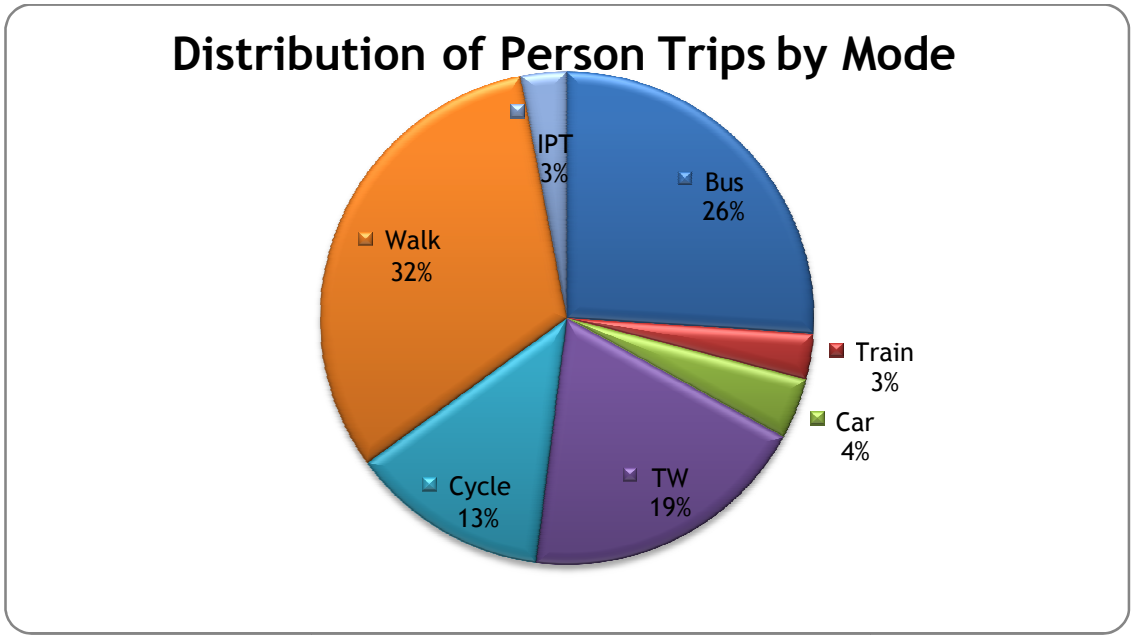
Although private vehicles constitute a large share in the vehicle population, they cater to the requirements of a small fraction of commuters. In 2005, the modal split of commuters in the CMA was explained as follows: In a group of 100 commuters, 26 travel by bus, 2 by train, 33 on foot, 13 on bicycles, 19 on two wheelers, 4 by car and 3 by other modes.[20] In 2008 (according to data made available by the Ministry of Urban Development), the percentage of trips made using public transportation was just 31 per cent of the total commuter trips.

The graph below displays the person trips by mode:

[19]Chennai Metropolitan Development Authority, Government of Tamil Nadu. September 2008. Second Master Plan for Chennai Metropolitan Area,2026, Volume III, Chapter III, Demography (Online), Tamil Nadu: Available at http://www.cmdachennai.gov.in/Volume3_English_PDF/Vol3_Chapter03_Demography.pdf. Accessed on 20 August 2011

[20]MATS (1968-69), Short-term Traffic Improvement Programme Report (MMDA & KCL, 1984) & CTTS (MMDA, RITES, KCL & PTCS, 1992-95), & Short term study to UpdateCTTS (1992-95)(CMDA, RITES & PTCS, 2004), HHI Survey of the DPR for the Chennai MetroRail Project, DMRC, 2005

Graph 1



Source: MATS (1968-69), Short-term Traffic Improvement Programme Report (MMDA & KCL, 1984) & CTTS (MMDA, RITES, KCL & PTCS, 1992-95), & Short term study to Update CTTS (1992-95)(CMDA, RITES & PTCS, 2004), HHI Survey of the DPR for the Chennai Metro Rail Project, DMRC, 2005

The per capita trip that was 1.44 in 2005 (HHI Survey carried out as part of the DPR for the Chennai Metro Rail Project, DMRC, 2005) has been projected to increase to 1.6 by 2016 and 1.65 by 2026. Total person trips performed in Chennai were about 7.45 m and 9.59 m during 1992 and 2005 respectively.[21]

The table below provides insights into the Comprehensive Traffic and Transportation Study (CTTS) for CMA undertaken during 1992-95 by a consortium of consultants -- M/s. RITES and M/s. KCL -- and the quick study carried out through M/s RITES in 2004. It essentially provided the basis for a forecast of future travel demands.

[21]Government of Tamil Nadu. 2008. Highlights of the Recommendations of the State Level Committee on Road Connectivity and Traffic Improvements in Chennai. CMDA(Online). Available at http://www.cmdachennai.gov.in/Highlights_HLC0901200913-1-09.pdf. Accessed on 25 August 2011

Table: 5 Projected Daily Trips by Public and Private Transport

		1991	2004	2006	2011	2016	2021	20268
Population (in lakh)		58.07	75.61	78.96	88.71	99.62	111.98	125.82
Daily percapita Trips		1.29	1.32	1.34	1.5	1.6	1.6	1.65
Total Daily Person Trips (in lakh)		74.91	99.81	105.81	133.07	159.39	179.17	207.60
Scenario 1 Modal Split	Private	57 per cent	64.57per cent	60 per cent	50 per cent	45 per cent	40 per cent	35 per cent
	Public	43 percent	35.43 per cent	40 per cent	50 per cent	55 per cent	60 per cent	65 per cent
Total Daily Person Trips by Public Transport (in lakh)		32.21	35.36	42.32	66.53	87.67	107.50	134.94
	By Rail	9.25 per cent	14.54 per cent	16 per cent	20 per cent	25 per cent	30 per cent	25 per cent
	By Road	90.75 per cent	85.46 per cent	84 per cent	80 per cent	75 per cent	70 per cent	75 per cent
Daily Trips (in lakh)								
	By Rail	2.98	5.14	6.77	13.31	21.92	32.25	33.74
	By Road	29.23	30.22	35.55	53.23	65.75	75.25	101.21
		1991	2004	2006	2011	2016	2021	2026
Scenario 2 Modal Split	Private	57per cent	64.57 per cent	55 per cent	45 per cent	40 per cent	35 per cent	30 per cent
	Public	43 per cent	35.43 per cent	45 per cent	55 per cent	60 per cent	65 per cent	70 per cent

Total Daily Person Trips by Public Transport (in lakh)		32.21	35.36	47.61	73.19	95.64	116.46	145.32
	By Rail	9.25 per cent	14.54 per cent	16 per cent	25 per cent	30 per cent	35 per cent	40 per cent

Source: CTTS (MMDA, RITES, KCL & PTCS, 1992-95) and short-term study to update CTTS (1992- 95) (CMDA, RITES & PTCS, 2004)

		1991	2004	2006	2011	2016	2021	2026
	By Road	90.75 per cent	85.46 per cent	84 per cent	75 per cent	70 per cent	65 per cent	60 per cent
Daily Trips (in lakh)	By Rail	2.98	5.14	7.62	18.30	28.69	40.76	58.13
	By Road	29.23	30.22	39.99	54.89	66.94	75.70	87.19
Scenario 3 Modal Split	Private	57per cent	64.57 Per cent	50 per cent	40 per cent	35 per cent	30 per cent	25 per cent
	Public	43 per cent	35.43 per cent	50 per cent	60 per cent	65 per cent	70 per cent	75 per cent
Total Daily person Trips by Public Transport (in lakh)		32.21	35.36	52.90	79.84	103.60	125.42	155.70
	By Rail	9.25 per cent	14.54 per cent	20 per cent	30 per cent	35 per cent	40 per cent	45 per cent
	By Road	90.75 per cent	85.46 per cent	80 per cent	70 per cent	65 per cent	60 per cent	55 per cent
Daily Trips (in lakh)	By Rail	2.98	5.14	10.58	23.95	36.26	50.17	70.07
	By Road	29.23	30.22	42.32	55.89	67.34	75.25	85.64

These three scenarios have been worked out in the comprehensive Traffic and Transportation Study (CTTS); the modal share of public transport is gradually increased, with an increase in the share of rail transport within the public transport modes. Scenario 2 has been based on the following assumptions.

i) The modal split between public and private transport will change from 28:72 (2005) to 55:45 (2011), 60:40 (2016), 65:35 (2021) and 70:30 (2026), in line with the trend in share of public transport increasing with city size.

ii) The sub-modal split between bus and rail will have to change from 91:9 (2005) to 75:25 (2011), 70.30 (2016), 65:35 (2021) and 60:40 (2026).

The total person trips in the CMA, which were 9.59 million/day in 2005, have been projected to increase to 20.76 m/day in 2026. Further, the above table shows that the number of trips carried out by bus services in 2005 will become nearly 3.5 times by 2026. Similarly, the volume of passengers to be catered to by rail will be nearly 24 times the present volume.[22]

These projections show that the supply of public transportation services needs to be increased manifold to meet future demands. The discussion above highlights the overwhelming cost of investment in public transportation modes. These transportation systems cannot sustain without high patronage, achieving which is not possible without interconnectedness with other transportation modes and accessibility from origin and destination of the passengers. Here, the role of Share Autos is vital. These automobiles can play a pivotal role in meeting the demand for accessibility and can act as feeder to the transit systems, as they are easily reachable and are plenty in their supply.

2.3.5. Autorickshaws and Share Autorickshaws in Chennai

Autorickshaws and share autos are the major paratransit modes in Chennai. Autorickshaws, which is an important mode of public transportation in most Indian cities, are three-wheeled narrow automobiles, suited for transport in crowded and narrow Indian roads. They provide

[22]Government of Tamil Nadu. 2008. Highlights of the Recommendations of the State Level Committee on Road Connectivity and Traffic Improvements in Chennai (Online). CMDA (Chennai Metropolitan Development Authority).Accessed on 31 August 2011 at http://www.cmdachennai.gov.in/Highlights_HLC0901200913-1-09.pdf.

door-to-door transportation on a cheaper fare than other modes of transport, are convenient and accessible on any Indian street and serve as a preferred choice of transportation for the people. Currently, there are 61,999 autorickshaws plying in the CMA, 24,101 of which run on Liquefied Petroleum Gas (LPG); the remaining on petrol. They cater to around 1.5 million commuters daily. [23]

Another form of transport is share autorickshaws. Primarily, 'Vikram Autos', which was introduced in Chennai on an experimental basis in 1998, are treated as share autos in Chennai. Currently there are 200 licensed share autos plying in the city of Chennai. New players that are not recognized as 'Share Autos' by the government have also come to the forefront, such 'Ape Piaggio', 'Tata Ace Magic', 'Mahindra Maxximos', and 'Arjun 500'. Other than 'Ape' autos and 'Vikram' autos which are three wheeled, all the other vehicles are four wheelers. For the purpose of this Study, we will categorize all these vehicles as 'Share Autos'. There are a total of about 12,000 Share Autos plying in Chennai city.

[23]Study on the Autorickshaw Sector in Chennai (Online). Accessed on 2 July 2011at http://chennaicityconnect.com/wp-content/uploads/2011/03/Auto-Study-Chennai.pdf.. Check this footnote???

Picture 2: Share Auto in Chennai

Share Autos are a preferred mode of transportation for short distances in Chennai; a city that is home to a large number of migrants. People who are dependent on the informal sector find this paratransit system highly convenient, as they can get board or get off wherever they seek to. Moreover, this system is well connected and passengers are not forced to wait long for another Share Auto to take them forward. Further, this automobile's design makes it easily manoeuvrable in traffic, and reduces the probability of road accidents. Finally, its smaller size entails lower capital and maintenance costs, a prerequisite for better and profitable transportation. This Study studies the importance of the 'Share Auto' sector in the public transportation system of Chennai and suggests ways of improving and integrating it with other transportation modes.

Introduction to Paratransit Systems

3. Introduction to Paratransit Systems

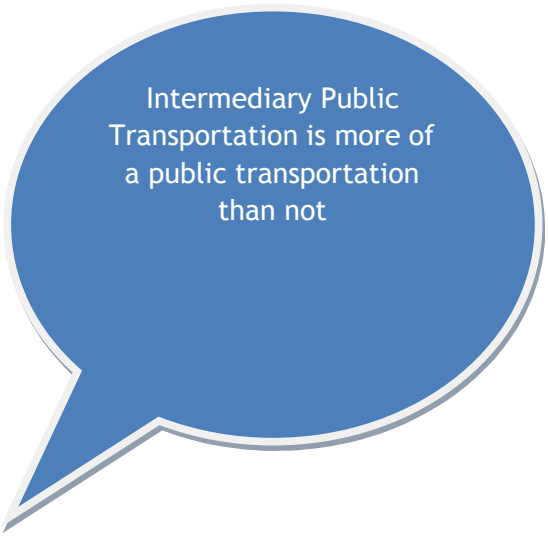
3.1. Paratransit Systems - Models and Definitions

Paratransit vehicles are a for-hire flexible passenger transportation system that does not necessarily follow fixed routes and schedules. They provide two types of services: One, trips along a more-or-less defined route with stops to pick up or drop off passengers on request, and, two, a demand-responsive transport that offers door-to-door service from any origin to any destination in a prescribed service area.[24]

> *"Paratransit is a service that is not quite fully public transit and that has some of the convenience features of Private automobile operations. It can be legal or illegal as defined by local rules and regulations"* Grava 2003, 234

[24] Study on the Autorickshaw Sector in Chennai (Online). Available at http://chennaicityconnect.com/wp-content/uploads/2011/03/Auto-Study-Chennai.pdf. Accessed on 2 July 2011.

Public transit (also called public transportation and mass transit) offers mobility services to the general public with shared vehicles that range from shared taxis and shuttle vans to local and intercity buses and passenger rail.[25]



The Ministry of Urban Development's report on 'Study on Traffic and Transportation Policies and Strategies in Urban Areas in India, published in 2008, defines paratransit mode of travel as 'an intermediary facility falling in between traditional public transport and the personalized automobile'. The Ministry also refers to it as Intermediary Public Transport (IPT).[26] The National Urban Transportation Policy states that paratransit vehicles normally cater to emergency trips (where commuters cannot afford to wait for public transport) or occasional trips (such as to airports or rail stations for commuters with excessive baggage). Para transit would not normally be used for regular commute to work or school.

The definition and scope of the paratransit system differs in developed and developing countries. In developed countries, the paratransit mode is usually 'Demand Responsive Transit', which works by a 'Dial- a- Ride' system managed by single or multiple operators through a call centre. It acts largely as a mode of transportation that complements the main public transportation system. In developing countries, on the other hand, the supply deficit of public transportation has led to the mushrooming of a bewildering range of varying modes of transit, in a bid to bridge the gap between public transportation and private vehicles. In several Asian, African and Latin American cities, it is perhaps the most common and widely used form of urban public transport.

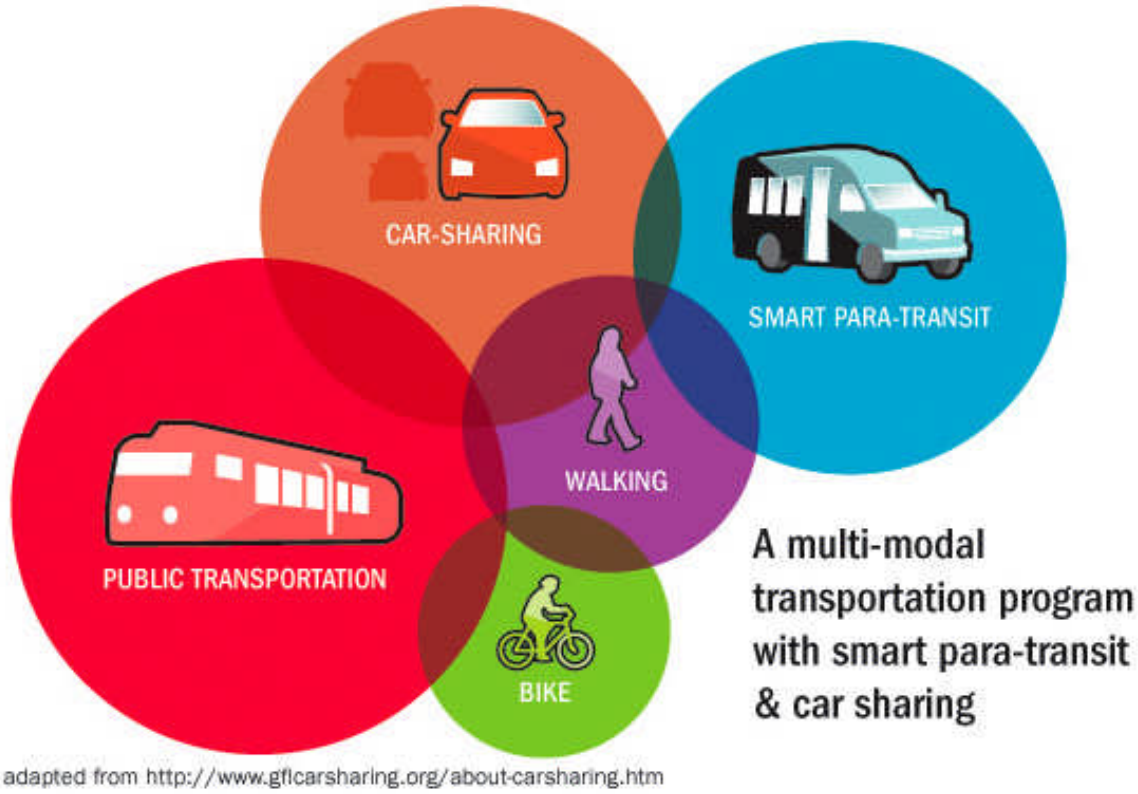
Developing cities in Africa, Asia and South America are witness to endemic traffic congestion and disjoined transportation network. In short, the state of urban transport in these cities can be portrayed as "…a growing urban population inadequately served by the transport system,

[25]Litman, Todd. 21 July 2011 .Evaluating Public Transit Benefits and Costs-Best Practices Guidebook (Online). Canada: Victoria Transport Policy Institute. Accessed on 25 August 2011 at http://www.vtpi.org/tranben.pdf.

[26]Ministry of Urban Development. 2008. Study on Traffic and Transportation, Policies and Strategies in Urban Areas in India.Accessed on 25 August 2011 at http://urbanindia.nic.in/programme/ut/final_Report.pdf.

declining standards of public transport, overlaps and conflicts among the agencies responsible…, massive growth in the use of minibus services, growing dependence on private transport, inadequate and deteriorating transport infrastructure, and poor facilities for non-motorized transport." (Kumar and Barret2008: 2)

Picture 3:



Developing countries offer motorized and non-motorized forms of paratransit transportation. Motorized paratransit systems, such as autos and share autos (India), Matatus (Kenya), Jeepneys (Philippines) and Dala- Dalas (Tanzania) offer inexpensive and flexible transport. In addition, they also ply on narrow roads where no other form of transportation is viable. The passenger carrying capacity of motorized paratransit modes vary from 20 per cent to more than 50 per cent of total public transport demand.[27]

[27]Shimazaki, T and Rahman, Md.M. 1996. Physical characteristics of paratransit indeveloping countries of Asia: Transportation in Asia-Pacific countries (Online). *(Volume 1), Journal of Advanced Transportation, Vol.30, No.2, 5-24* Accessed on 30 July 2011 at http://www.civil.cst.nihon-u.ac.jp/~shimazak/attach/paper/pa_phy.pdf.

The paratransit system has the potential to bring about substantial mobility by undertaking large numbers of urban trips that otherwise would have to be done by private automobiles. It not only helps in introducing sustainable transportation and environmental friendly transportation, but also creates a massive number of employment opportunities. Owing to these factors, the paratransit system is a huge success.

Paratransit models across developing countries have been found to have similar characteristics - fast and efficient transport solutions, limited carrying capacity, better frequency and diverse routes. In South Africa, mini bus taxis serve around 60 per cent of commuters daily. They wait at major transit points, and commence trips only after the vehicle is filled to capacity. Commuters are allowed to board or get off anywhere along the route and passengers that flag them down along the route are picked up. These services are part of the informal sector in most of these countries and are loosely regularized by public authorities. They cater mostly to the lower and middle classes, reducing the burden local authorities' burden to provide public transportation, which is expensive.

According to Cervero[28] that which separates informal transport operators from the others is the lack of a regulated environment. He further points out that "…in some instances, (informal public transport) operators lack the necessary permits or registration for market entry in what is a restricted, regulated marketplace, fail to meet certification requirements for commercial, common-carrier vehicles -- such as minimum vehicle size, maximum age, or fitness standards. Other violations include lack of liability insurance, absence of a commercial driving permit, and operation of an unclassified or substandard vehicle."

When new and improvised modes of public transportation systems are introduced, motorized paratransit can be used as feeder systems. They are very efficiently evolved with the local conditions and can provide first mile-last mile connectivity.

3.2.Paratransit Systems across the Globe

3.2.1. Indonesia

Indonesian cities are fast becoming more prosperous and the demand for mobility is increasing. In most cities, public transportation is minimal, as local governments are yet to make adequate investments in infrastructure and are still working towards building a management capacity to

[28] "Informal Transport in the developing world", Robert Cervero HS/593/200O

operate transportation. This leaves a gap between services offered and actual mobility requirements, giving paratransit service providers the opportunity to offer mobility solutions.

- **Angkots:** These are mini buses operated throughout the city. Of all formal and informal modes of transport, *angkots* undertake the largest share of passenger trips in Indonesia. The routes are decided upon by the local government. These automobiles are mostly rented to drivers by persons who own multiple vehicles; however, for a private vehicle owner to operate a vehicle on a given route, a licence is necessary.

Picture 4: Angkot in Indonesia

- **Ojek:** *Ojeks* are motorcycles that can carry only one passenger. They do not have fixed routes and are not licensed.
- **Becak: A** *becak* is a pedicab with a covered seat in front, powered by the driver with a bicycle pedal.

The paratransit system in Indonesia is mostly regulated by unions. Most drivers are part of corporative organizations known as ranks or *pangkalang,* which organize themselves in visible public spaces. The drivers are expected to wear uniforms to ensure that passengers find them without any difficulty. They are also answerable to the group, and hence follow safety guidelines. They play a major role in the city's transportation system and economy. However, despite their significance, these drivers actually enjoy very little benefits and recognition.[29]

Indonesia introduced the BRT (TransJakarta) in the public transportation system in 2004, drawing inspiration from Bogota's Transmilenio. However, it does not show favourable results, as the government failed to integrate paratransit systems as its feeder.

3.2.2.Thailand

Bangkok, the capital of Thailand, has a wide network of paratransit services. Motorcycle taxis, tuk tuks, songtaews, silorleks, and taxis are the service providers. Motorcycle taxis, which transport people between their residences and main streets to public transports, are managed by private associations. The fares charged are higher than other paratransit modes undertaking short trips and are not controlled by the government.

Picture 5: A Tuk Tuk in Thailand

[29] http://www.cdia.asia/wp-content/uploads/Informal-Public-Transportation-Networks.pdf. Accessed on September 7, 2011

Source: Thai World View[30]

- Motorcycle taxis enjoy the lion's share among paratransit modes due to their flexibility, compact size, and speed. They are tailored to operate in high-density areas. Currently motorcycle taxi operators are required to register with the police and are required to attend training sessions before official licences are issued. In addition, they are assigned specific colour vests that indicate their work areas.
- Songtaews are pick-up trucks specially designed to carry passengers in the rear of the vehicleon the back with an overhead cage, two row seats, and steps up the back that can move up to 14 passengers or more.

All operating vehicles are required to register for a licence and fares are controlled by the Bangkok Mass Transit Authority (BMTA). The services are, however, managed by concessionaires.[31]

Bangkok implemented two mass transit systems - the Bangkok Mass Transit System (an elevated rail system) in 1999 and the Mass Rapid Transit (subway) in 2004. At BTS' inception, it offered a total of 13 routes of free shuttle bus service that could handle approximately 20,000 passengers per day. Unfortunately, the number of routes was reduced to six in 2001 and one in September 2004, citing financial difficulties.

Currently, BTS and MRT riders access their stations by the paratransit modes which not only ease accessibility, but will also enlarge mass transit catchment areas and offer potential latent demands to mass transit and other public transits as well.

3.2.3. Hong Kong

Minibuses in Hong Kong are small passenger buses that carry about 16 people. This form of public transportation, also called Public Light Buses, was introduced in 1969 to regulate the illegal operations of the paratransit sector. In 1976, the total number of minibuses was restricted to 4,350. At the end of 2010, there were 4,348 licensed mini buses. Daily patronage is about 1.8 million passenger trips. These buses fall into two colour categories: Green minibuses that operate on specific routes at fixed prices, and red ones on routes that are not predetermined. Octopus cards (the integrated ticket for all the modes of transportation in Hong Kong) are

[30] http://www.thaiworldview.com/travel/travel9.htm
[31] http://kamome.lib.ynu.ac.jp/dspace/bitstream/10131/7293/1/Akkarapol+Dissertation%5B1%5D.pdf

accepted. Red buses allow passengers to get on and off anywhere along the route, except where special prohibitions apply. Passengers pay as they alight.

Picture 6: A Public Light Bus

Source: World News Inc[32]

Although the basic function of these Public Light Buses is to provide mobility services to area where patronage would not support high-capacity carriers, they often provide useful 'feeder services' to MRT stations and transport interchanges. They also offer faster and more frequent services than regular public buses.

[32] http://www.google.co.in/imgres?q=public+light+buses&um=1&hl=en&safe=off&sa=N&biw=1280&bih=709&tbm=isch&tbnid=0EpbGawksxKVZM:&imgrefurl=http://wn.com/public_light_bus%3Fupload_time%3Dall_time%26orderby%3Dpublished&docid=kewIASkkjuY_LM&imgurl=http://cdn6.wn.com/pd/48/10/3e96845f0548c4a00941ed7910a7_grande.jpg&w=468&h=351&ei=K-C6Tpb_G8nVrQf3mey9Bg&zoom=1&iact=hc&vpx=187&vpy=339&dur=101&hovh=194&hovw=259&tx=120&ty=65&sig=103487298079759446050&page=1&tbnh=158&tbnw=193&start=0&ndsp=15&ved=1t:429,r:5,s:0

3.2.4 African Cities

The paratransit sector, consisting of large number of minibuses, taxis and motorcycle operators, dominates public transport services in cities of Africa. Dakar (Senegal), Kampala (Uganda) and Nairobi (Kenya) are served mainly by minibuses, ranging in size from 14 to 25 seats. While in Kampala and Nairobi, a majority of the minibuses seat 14 persons each, in Nairobi, the number of larger minibuses, with 25 to 39 seats has been growing rapidly. In Dakar, the Cars Rapides are bigger with 23 or 25 seats. The vehicle owners are not necessarily the drivers. Owners usually hire out their vehicles for a daily fee to a principal driver, who may employ a second driver and one or more conductors. In Douala (Cameroon), the minibus sector was effectively suppressed to protect the conventional bus operator, SOCATUR, and its place taken by shared taxis and motorcycle taxis.

Minibus and taxi owners in African cities normally buy their vehicles second hand and are able to finance the purchase with interest-free loans from family or friends, or small loans from saving cooperatives. Bank finance is not normally used, due to lack of acceptable security.

In Dakar, Kampala and Nairobi, the governments make no attempt to control the supply of minibuses. Effectively, control has been passed to route associations or syndicates. Although the Nairobi government in 2004 took due action on a legal notice that outlined rules to be followed by the 'Matatu' mini bus industry, route syndicates continue to take decisions with regard to the industry's market operations.

In Kampala, minibus services are controlled by the Uganda Taxi Operators and Drivers Association (UTODA). They are licensed by the Kampala City Council to operate the city's only bus terminal. All minibus operators are obliged to start and end their journeys at designated locations like parks and pay a fee to UTODA for each entry. The association has become extremely powerful and earns a substantial income from charges levied on minibus operations.

There are eight taxi syndicates in Douala responsible for representing operator interests to the government. Although a legal requirement mandates that taxi operators be members of a recognized syndicate, there also exists a substantial number of unregistered taxis known as *clandos*.

In these cities, the informal sector is the main provider of public transport services. Although quite disorderly, it is also flexible, efficient, resilient, and generates huge employment opportunities. Efforts to suppress the informal sector are likely to be ineffective. Governments will have to work with the informal sector, if they wish to improve the public transportation service in these cities.

3.3. Paratransit System in India

In India, although primary emphasis is on integration of land use and transport planning, mega cities (with population above a million) continue to address these two problems in isolation. Transport planning in these cities is intended merely to cater to the immediate mobility needs of growing urban sprawls by encouraging the growth of personalized motorized modes, rather than preventing rapid growth. Urban and land-use planning in these cities are rarely aimed at shaping the structure of the city or pivoting its future growth towards a sustainable foundation.

While cities struggle to meet the ever-increasing demand for public transport, investments often do not sufficiently benefit the poor who remain transport marginalized. Instead, the paratransit sector functions as the 'people movers' for the economically backward in several Indian cities. The vital role that Intermediary Public Transport (IPT) plays in urban mobility is, however, seldom acknowledged.

3.3.1.Alwar

Public transport in Alwar, Rajasthan, is largely informal. Bus services, were discontinued due to huge losses it incurred in 2008. Three-wheeler share autorickshaws that charge a fixed fare on a 'point-to-point' basis are the most important public carriers in the city. They operate for more than 12 hours a day, and offer inexpensive and quick transport service around the city, mostly on seven notified routes where they run to-and-fro services. Although officially authorized to seat only seven passengers and a driver, overcrowded autorickshaws are not uncommon. During peak hours and on popular routes, 'Vikram' auto rickshaws could seat up to 15 persons. Commuters can walk to almost anywhere in Alwar to avail of their services.

Fixed-fare share autos in Alwar are inorganically organized by about five main unions, which also decide on the operation of fixed fare autos in Alwar. Unions have their own system of numbering vehicles and maintain organized queues at the terminus, where autorickshaw drivers are obliged

to await their turn. The unions also monitor the number of vehicles and the frequencies at which they run, in order to ensure fair business for everyone. They also propose new routes to the RTO, taking into consideration increasing mobility demand. The unions also play the role of watchdogs, ensuring that complaints by commuters are looked into and necessary action is taken.

3.3.2.Jaipur

While the city's public transport system has a fleet of 260 buses, private transport companies operate more than 1,800 mini buses on 36 routes and service about 4.5 lakh passengers daily.[33] In addition, Vikram autos also ply as Share Autos.

3.3.3.Mumbai Metropolitan Region

All around the Mumbai Metropolitan Region, informally run Share Autos have emerged as a popular mode of transport along the suburban train stations. Four-wheeled share taxis also run from the posh business district of Mumbai – Nariman Point to Church Gate and CST railway stations. They essentially provide the first mile-last mile connectivity to commuters, taking into account their short-distance travel requirements.

The Share Auto trade in Mumbai is a subset of the larger autorickshaw sector. They are not officially designated to be plied as Share Autos, and hence come under the informal sector. Although they lack a regulatory framework, the flexibility of their services makes them one of the most preferred modes of travel.

3.3.4.Rajkot

The most important paratransit system in Gujarat is that of the *chakdas*, licensed contract carriage autorickshaw taxis that charge fixed fares for point-to-point services. Although they are formally allowed to carry only three passengers at a time, this figure varies between 2 to 12. In 2010, there were about 6,000 of these automobiles in service in Rajkot. The existence of

[33]Jaipur Public Transport Services through Bus Rapid Transit System and Modern City Buses, Urban Transportation Initiatives in India: Best Practices,National Institute for Urban Affairs (Online): Available at www.niua.org/projects/tpt/JAIPUR.pdf, Accessed on 30 September 2011

chakdas on all arterial streets and the Ring Road ensures that a potential passenger is always mobile.The Chakdas carry on an average 30 passengers per day travelling 67 km per day involving 5 trips.[34] They function from 6 am to 11 pm and are available every 2-3 minutes at peak travel hours on busy roads. Although this sector is the most important stakeholder in the public transportation system, there is no plan set in place for them.

3.3.5.Indore

The paratransit system in Indore comprise of 500 mini buses and 550 Maruti vans. Till recently, three-wheeled Vikram autos were also a part. However, transportation authorities have scrapped all the polluting vehicles, which included Vikram autos, and replaced them with Tata Ace Magics and LPG run autos. These vehicles require temporary or annual permits from the RTO, which has restricted the issuance of new licenses. This has created a supply deficit in the city. Maruti vans and Tata Ace Magic vehicles, which have specific route permits in the city, have also been issued rural permits to ply on routes connecting neighbouring villages and along the outskirts of the city.

3.3.6.Lucknow

In Lucknow, autorickshaws function as Share Autos, carrying an average of 5 to 7 passengers at a time. There are around 4,000 autos plying in the city on short distances. The Lucknow RTO issues a No-Objection Certificate (NOC) for these automobiles to ply within city limits. As on March 2011, there were 51 such autos in Lucknow city limits. The RTO further fixes the fare of such autos in various routes. The fares range between ₹ 5 to ₹ 28, according to the distance travelled. In the absence of other modes of transportation (city buses are few), a large number of commuters travel by Share Autos. In addition, these automobiles' availability and frequency also make them a preferred mode of travel. Currently, only Compressed Natural Gas (CNG) driven autos are allowed to ply in the city.

[34] Detailed Project Report for Rajkot Bus Rapid Transit System, Rajkot Municipal Corporation, 2007

Paratransit Sector in Chennai

4. Paratransit Sector in Chennai

4.1.General Overview

In the face of ever-increasing mobility demands, an efficient public transportation system is the key to keeping private automobiles off city roads. A world-class city is not one that prioritizes the needs of the wealthy and promotes polluting forms of single-occupancy private transportation; that which provides high-quality comprehensive public transportation meets the definition.

The metropolis of Chennai continues to battle mobility issues, as its public transportation services are insufficient to meet the changing needs of its diverse population. Lack of connectivity and flexibility remain major issues. They, can however, be tackled by bridging the existing gaps and identifying missing links. It is here that Share Autos come into the picture. With innovative thinking, Share Autos can be made the backbone of the 'transportation of the future', as they provide low-cost mobility with first-mile-last-mile connectivity and is set to be the most preferred mode of service by a large section of the population in India. Introduced to Chennai in 1998, these are newer forms of paratransit, as compared to autorickshaws.[35] However, in such a short time, Share Autos have become an integral part of the city's urban transportation system.

Primary players in the Share Auto sector are the five-seater autos, Ape Piaggio Diesel autos, and Tata Ace Magic vehicles. The paratransit system in Chennai is efficient, reliable and highly competitive. There are around 12,000 vehicles plying as Share Autos in the city.

[35] http://www.bajajauto.com/bajaj_corporate_achievements.asp, Accessed on 20 August 2011

Table 6: Approximate Number of Share Autos

Type	Number
Ape Piaggio Diesel	6500
Tata Ace Magic	4500
Vikram Autos	200
Arjun Autos	200
Mahindra Maxximos	300

The Ministry of Urban Development has identified various indices to evaluate the performance of transportation in cities. One among them is the Paratransit Index.

The Para Transit Index is estimated as:
Para Transit Index = Number of paratransit vehicles for 10,000 population
Following this definition, the paratransit index for Chennai can be estimated as (taking the population of Chennai as 72.13 million as per 2011 Census):

Paratransit Index= 12000/468.1 (Ten Thousands)
=25 per 10,000

According to this index, there are 25 Share Autos available per 10,000people. But the number of buses for the same is only 7. The average carrying capacity of a Share Auto is 7 passengers and of an MTC bus 73. Hence, the MTC caters to 511 persons out of 10,000, while Share Autos serve 182. In peak travel hours, they carry up to 12 passengers at a time.

This mode of transportation, considered informal by public authorities, serves 35 per cent of MTC's target population. Share Autos are allowed to ply in a 30 km-radius of the Chennai district headquarters. They provide feeder services as well as final destination connectivity for short-distance commuters and are the second largest transportation providers in the city. The sector is self sustaining and does not run on any form of government subsidy.

Additional pressure on the government to extend public transportation modes to unconnected areas in the city is not feasible, as the cost of new mass transportation units is huge. A suitable solution, thus, is proper integration of the paratransit system, especially Share Autos. This will ensure comfortable and quick travel options, and definite patronage towards mass transit systems.

4.1.1.Origin of Share Autos in Chennai

The concept of the 'Share Auto' was alien to Chennai residents before its introduction in 1998 by G.O.Ms.No.1492, Home dated 30.10.98. The Government permitted 100 Share Autos (Vikram) with 5+1 seating capacity to ply within city limits. These autos were manufactured by Scooter India Ltd, a Government of India undertaking headquartered in Lucknow. Although fewer in number when compared to other motor vehicles, they brought about a revolution in the city's transportation sector.

In 2000, the Transport Commissioner, Chennai, (vide Letter No. H3/99743/2000, dated 14.10.2000) recommended that 50 additional permits be issued to each Regional Transport Office in Chennai and 50 each for district headquarters in Tamil Nadu, considering public demand. The Commissioner of Police also supported the proposal. The government, however, decided to permit only additional 100 five-seater autos in Chennai (G.O. Ms. No. 277, dated 22.03.2001).

The table below displays the number of Share Autos permitted by RTOs in the city:

Table 7: Number of Permitted Share Autos

Sl No.	Mavattam	Permitted
1	Chennai (North West)	30
2	Chennai (Central)	12
3	Chennai (North)	55
4	Chennai(West)	25
5	Chennai (East)	12
6	Chennai (South)	49
7	Chennai (South West)	17
8	Chennai (Total)	200

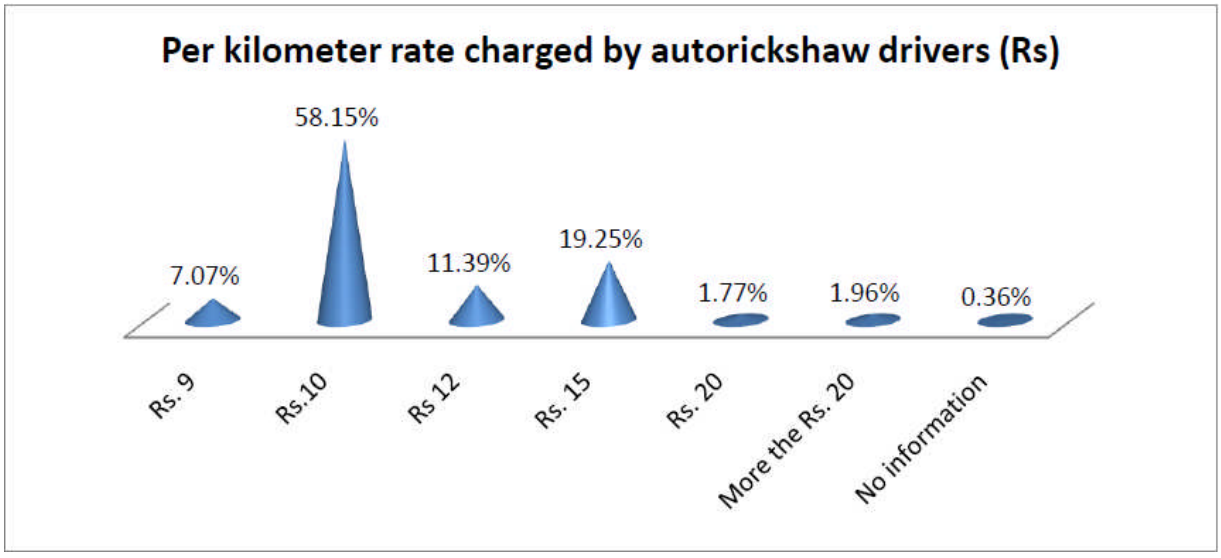
Source: State Transportation Department

The Study revealed that the government tried to ban and restrict autos in general in the latter part of the 1990s. Share Auto unions' demand for increase in the number of permits was also rejected by the government.Since2001, the government has been refusing to permit additional 'Share Autos' in the city, citing two reasons: One, they were causing losses to the MTC, and second, they caused traffic congestion.

4.1.2.Emergence of New Players

MTC buses have been noted to be notorious for their inhuman travel conditions. Paucity of buses and fixed bus stops has made mobility hard for commuters, often forcing them to walk long distances to avail of public transportation. In addition, contract carriages, especially autos, charge huge fares, which daily passengers cannot afford. The metered pricing of kilometres travelled has not been functional in the autorickshaw sector, and rented cars are generally used for planned trips.

Graph 2



Source: Study on the Autorickshaw Sector in Chennai

According to the 'Study on the Autorickshaw Sector in Chennai[36]', conducted by Chennai City Connect Foundation, the minimum fare charged by autorickshaw drivers per kilometre is ₹ 9. The report also revealed that only 33 per cent commuters travelled by autorickshaws1-2 times a week, while another 42 per cent used them for emergencies. Only 1 per cent of the passengers used autorickshaws twice daily. Fifty seven per cent of the passengers rarely used call taxis; whereas only a negligible proportion of three per cent used them 3-4 times a week. Ten per cent of the passengers used call taxis in emergency and only 1 per cent used call taxis 1-2 times a week in Chennai.

However, our Study revealed that the fare charged per kilometre by Share Autos was ₹ 5 or less. In addition, 65 per cent of daily commuters travel by Share Autos. Share Autos are a preferred mode of transportation for students and working professionals, as they generally ply on fixed route. They are flexible, and stop to drop or pick passengers along the stretch. Moreover, their small structures enable them to manoeuvre the narrow and congested streets of Chennai.

[36]Study on the Autorickshaw Sector in Chennai (Online). Accessed on 2 July 2011at http://chennaicityconnect.com/wp-content/uploads/2011/03/Auto-Study-Chennai.pdf.

Photo 7: Maintenance cost of share autos are less compared to buses

Share Autos address huge public demand. However, the government's refusal to issue new permits has led to the mushrooming of unlicensed players in the market.

Ape Piaggio

The regular 'diesel' autos in the city (majorly 'Ape Piaggio'), which have larger structures and offer more comfortable seating, as compared to the 'petrol' autos, began plying in the city as 'Share Autos' over the time. These 'Ape Piaggio Diesel' vehicles, which are only issued autorickshaw permits, come under the category of 'Contract Carriages – Autorickshaw' and are allowed to ply only with three passengers.

The Autorickshaw sector in Tamil Nadu was trapped in the 'Permit Raj' for a long period. In 1999, the Government of Tamil Nadu passed G.O. Ms. No. 166 dated February 10, 1999, for a three-month ban on issue of permits for new 3-seater autos, following which G.O. Ms. No. 1439, Home Department dated 29.10.1999 imposed a ban on issuing of new autorickshaw permits in Chennai city. Further, G.O. Ms. No. 1346, dated October 5, 1999, prohibited autos from plying on Wall Tax Road, from the junction point of E.V.R. Salai up to Isaac Street (both ways), by powers conferred by Section 115 of the Motor Vehicles Act, 1988, Government of Tamil Nadu.

In 2007, G.O. Ms. No. 510, dated April 13, 2007, necessitated the conversion of petrol-driven autos to LPG.[37] The registration of new 'diesel' autos was also banned in the same year. However, in 2010, the government passed G.O. Ms. No. 463 dated May 14, 2010, which lifted the ban on grant of permits in Tamil Nadu. The ban on diesel autos remains.

This Study revealed that diesel autorickshaw owners and drivers have found a new market in the Share Auto sector, due to assured commuter patronage. At present, there are around 6,500 'diesel' driven autos in the city, perceived as a regular form of the Share Auto.

Tata Ace Magic

Another major player in the sector is 'Tata Ace Magic'. This vehicle was introduced to Chennai in 2009 by a letter from the Transport Commissioner (Letter. R. No. 33310/H3/2009, dated 31.08.2009). Circular No. 13/2009 gave permission to Tata Ace Magic HT (8 seater) B.S III (diesel) to register as a 'Tourist Maxi Cab' in the state of Tamil Nadu. The Tata Ace Magic comes under the category of 'light motor vehicles, contract carriage'. Since 2009, around 4,500 Tata Ace Magics have been sold in Chennai city alone. During peak travel hours, the number of passengers carried in one Tata Ace Magic can go up to 12 passengers.

In notification G.S.R 84 (E) dated 9th November 2009, the Government of India specified Bharat Stage III and Bharat Stage IV emission norms for different categories of motor vehicles in the country. However, keeping in view 'unforeseen' circumstances, certain provisions of Rule 115 of the Central Motor Vehicle Rules, 1989, were amended vide notification number G.S.R 443 (E) dated 21st May 2010. According to the rule, Bharat Stage III norms were made applicable to two and three wheelers in Chennai and few other parts of the country from April 1, 2010, although

[37]Section 87(1) of the Motor Vehicles Act- Central Act 59 of 1988

BS III vehicles manufactured on or before March 31, 2010, were made eligible for registration until stocks was exhausted. Bharat Stage IV norms were made compulsory for all four-wheeled vehicles. Tata Ace Magic, being a four-wheeler and a BS III vehicle, has been denied permission to register in Chennai city. However, it is to be noted that a Tata Ace Magic has state permit. This allows it to be registered elsewhere in the state and plied in Chennai city as Share Autos, hugely diluting the government's pollution control concept.

The Arjun 500, although small in number, also play a major role in the city's paratransit system. Mahindra Maxximo, which is the newest entrant, is also making an impact in the market and currently account for around 250 vehicles.

Picture 8: Vikram

Picture 9: Ape Piaggio

Picture 10: Tata Ace Magic

Table 8: Price Structure of the Vehicles (in Rupees)

Tata Ace Magic	3.2 to 3.8 lakh
Mahindra Maxximo	3.23 lakh
Ape Piaggio	2.5 lakh
Vikram Auto	1 to 1.2 lakh

4.2.Major Rules Applicable to Contract Carriages and Maxi Cabs

4.2.1.Contract Carriages

1. A contract carriage permit is issued in accordance with procedures laid down in Section 74 of the Motor Vehicles Act, 1988.
2. A contract carriage should only be used for the conveyance of the tourist.
3. A list of passengers travelling in the vehicle should be maintained and produced on demand before the checking officer.
4. A contract carriage should be used only for the transportation of passengers on a hire basis.
5. The vehicle should be plied only on routes specified in the permit.
6. A copy of the fare chart should be exhibited in the vehicle.

These conditions are applicable to all contract carriage vehicles. Share Autos, by virtue of being in a different category of contract carriages, are required to abide by separate rules for pricing and passenger selection. But 'Ape diesel' autos are not supposed to ply on a shared basis and are expected to have a metered journey.

4.2.2. Maxi Cabs

1. A 'Tourist Motor Cab' implies any motor cab adapted to be used for tourist purpose in the state.
2. Application for the grant of permit to a tourist maxi cab should be made in the form of a contract carriage prescribed in Rule 170.
3. Every application for the grant of permit should be considered by the Regional Transport Authority in accordance with procedures laid down in Section 74 of the Motor Vehicles Act, 1988.
4. On receipt of orders sanctioning the permit, the grantee shall, within the prescribed period, produce to the Regional Transport Authority, the current records of the vehicle, including registration certificate, fitness certificate, insurance certificate and evidence of payment of tax due under the provisions of the Tamil Nadu Motor Vehicle Taxation Act, 1974, for issue of a permit.
5. The vehicle should be used for the conveyance of bonafide tourists.
6. The vehicle should not carry more than the number of people specified in the permit.
7. The vehicle should not ply in competition with regular taxis.
8. The driver should wear a prescribed uniform.

This discussion proves that the roles played by Tata Ace Magics or Ape Piaggio Diesel Autos are illegal and they are liable to be penalized for the same. They are permitted to serve only tourists or passengers who hire them for personal trips. These vehicles are privately owned and are basically profit-making ventures.

4.3.Fare Structure

The fare of Vikram Share Autos is fixed on a kilometre basis. The maximum number of passengers allowed in the auto is five and the fare per person is ₹ 1 per kilometre. This fare was fixed in 1998, and has not been revised since. The fare for regular autorickshaws was revised by the government in 2007. Taking into consideration the increase in fuel prices, the government issued G.O. Ms. No. 48, dated January 10, 2007, to revise contract carriage auto fares.

The following fare rates were decided upon:

- Minimum fare at ₹ 14 for the first 2 km
- ₹ 6 for every kilometre thereafter
- Waiting charge of 40 paisa for every five minutes
- Night charges from 10 pm to 5 am were 25 per cent more than the day fare

The table below makes a comparison between the fares of autorickshaws and Share Autos in Chennai:

Table 9: Fare Comparison between Autorickshaws and Share Autos

Autorickshaws	Vikram Share Autos (at the rate of ₹ 1 per person and 5 persons per share auto)
₹ 14 for the first two kilometres	₹ 10 for two kilometres
₹ 6 for every kilometre thereafter	₹ 5 for every kilometre

Both autorickshaws and Share Autos play major roles in serving the transportation needs of the public. However, the government's lack of interest in revising Share Auto fares underlines its negligence towards the sector. There is no minimum fare fixed by the government for Vikram share autos. While an autorickshaw driver is allowed to charge ₹ 14 for first two kilometres, a Share Auto driver is allowed to charge only ₹ 10.

It is to be noted that the government has increased diesel prices changed six times since April 1, 2010, while there has not been any revision in Share Auto fares since 1999.

Table 10: Increase in Diesel Prices

Date	Prices per litre (in rupees)
July1, 2011	43.95
June25, 2011	43.8
November 2, 2010	40.16
September 8,2010	40.16
June 26, 2010	40.07
April 1, 2010	38. 05

4.4. Role of Unions

As with paratransit systems across the globe, Share Auto unions in Chennai too play a vital role in managing the system. Most drivers are members of unions, such as the All-India Trade Union Congress (AITUC), Centre of Indian Trade Unions and Labor Progressive Federation. A sticker on the vehicle displays their association with a particular union. Only members are allowed to park their Share Autos at union-designated stands. The Study revealed that not all unions (AITUC, for example) recognize Tata Ace Magic vehicles as Share Autos.

These unions are links between the government and the Share Auto drivers and engage in dialogues to increase the number of permits. Unions are known to hold the government responsible for problems in the Share Auto sector and demand its regulation of the sector. Unions also help their members deal with the police and stand by them in cases of accidents and death.

4.5.Why Do We Need a Paratransit System in Chennai?

- **Flexibility** - Paratransit vehicles accommodate a variety of demands and uses. While private vehicles cater to the needs of a small number of people, the paratransit system in Chennai serves the mobility needs of the lower and middle classes. It allows passengers the convenience of boarding and alighting anywhere they seek to, along the trip. Share Autos are also in service when public services shut down. Their drivers normally operate in a particular area of the city, but the lack of specified routes given has given them the flexibility of plying

in areas where the demand is high. "We serve all sections of the population. They are pleased with our services, because we take them to their destinations in less time than the public buses do," stated a Share Auto driver from Guindy.

- **Connectivity:** On most bus routes, the fleet size is small and frequency extremely poor. People are forced to wait for more than half an hour to avail of bus services. In a fast developing city like Chennai, where time is money, Share Autos plays an important role. Their frequency is higher and they are more reliable providing an accessible transportation mode for a large population of people. Since the share auto are highly connected to various locations, they are one of the most preferred modes of transport for the people of Chennai.

- **Fills the supply deficit:** Share Autos also service areas of the city where formal public transportation fails to. Several narrow streets in the city, which are unreachable by public transportation, are catered to by Share Autos. Streets in Northern Chennai are a good example, where only small vehicles like 'Ape Diesel' autos can reach. The picture below is of a narrow street on Broadway, unsuitable for regular bus trips.

Picture 11: A Narrow Street in Broadway

The study revealed thatTte Share Auto sector, unlike the public transportation modes, is highly sensitive to the demand of the public. Since they are loosely regulated, they don't stick to a particular route and increase services with public demand.

- **Serves niche groups:** A 'niche' is a specialized group of people who share a particular demand based on destination, use, or time.[38] The Share Autos sector caters to a variety of such groups. The share autos are able to serve those population which regularly goes to office/ college. Depending on the occupation, timings and location; share autos serve various groups of employed, school/college students, traders etc. It was observed suring the study thatthe office goers and students are served by them in the morning (From 9- 10.30) and the street vendors and the shoppers start using the service in the afternoon.

- **Cost of mass public transportation:** The supply of public transportation is insufficient to meet the demands of the public's changing needs. The following two scenarios can be taken as reference to assess its effectiveness:

1. To introduce new mass transportation networks, such as Metro Rail, or to increase the capacity of the present networks.
2. To encourage the paratransit sector's growth and interlink it with other public transportation modes, so that the patronage of public transportation modes increase.

The first option is tremendously expensive and puts a huge pressure on tax payers. The capital costs workout for the 'Metro Rail System' in Chennai at March 2007 price level is:

- Corridor 1:₹ 5,997 crore
- Corridor 2:₹ 5,106 crore[39]

The project will become a profitable one only if the expected ridership is achieved. Studies on Mass Rapid Transit Systems across the globe show that if the transit points of an MRT system are not properly integrated with feeder services, it will be a huge failure. The letdown of the MRTS in Chennai is majorly due to lack of connectivity to the stations. Encouraging the paratransit sector and integrating it with the mass transportation system will definitely help in achieving the desired goals.

[38] http://www.cdia.asia/wp-content/uploads/Informal-Public-Transportation-Networks.pdf, Accessed on August 19, 2011
[39] http://chennaimetrorail.gov.in/pdf/project_brief_updated_aug08.pdf. Accessed on September 8, 2011

- **Creates employment opportunities:** Several industries and services are dependent on the Share Auto sector for jobs. Vehicle manufacturers, owners, drivers and mechanics, among others, find employment because of Share Autos.

The future of public transit is based on its performance and services. If found to be inefficient, commuters will abandon it, as with the MRTS in Chennai. The quality of service is assessed by public perception. This Study revealed the Chennai public is satisfied with the services of the Share Autos. This paratransit mode of transportation is extremely important to Chennai's transportation system, as studies have revealed that new investments in mass transport requires proper integration with the feeder system. In Chennai, Share Autos can play the part.

Methodology

5. Methodology

The driver and passenger surveys for this Study were based on face-to-face interviews. A total of 260 drivers and 400 passengers were surveyed for the study. This sample size allows for reliable estimates to be populated for the drivers and passengers not part of the Study.

5.1. Driver Sample Size

The goal of survey research is to take a sample representative of a population; the data of which is later generalized and concluded for a population within prescribed limits of error. Further in this section, we arrive at an adequate sample size for 6,500 Ape Diesel, 5,000 odd Tata magic, 200 odd Share Autos and 200 odd Mahindra Maxximo populations in Chennai, Tamil Nadu.

The auto data is considered to be continuous in nature, and the auto population is around 12,000. Auto distribution is skewed towards Ape diesel and Tata Magic, when compared to Share Autos. For this reason, the sample size differs based on the type of auto. For Ape Diesel with 1% acceptable error margin, the minimum sample size for the survey would be 100. With only 75% response rate for 100, the maximum size of the sample would be 125. Similarly with 1% acceptable error margin, the minimum sample size for Tata Magic survey would be 50. With only 50%-75% response rate for 50, the maximum sample size would be 100 for Tata Magic. Since Share Auto forms a very small unit of the population, the margin of error would be 5% and the minimum sample size would be 10 autos. With a 50%-75% response rate, the maximum sample size would be 15 for share auto. On the same lines, the sample size for Arjun is 5 and Mahindra Maxximo 15.

5.1.1. Study Areas

The distribution of Share Auto is skewed towards particular areas. After review of the distribution of autorickshaws, the following are the sampling patterns:

1. Tambaram - 10 Ape diesel, 2 Share Autos
2. T Nagar - 10 Ape Diesel, 5 Tata Magic and 3 Mahindra Maxximo plus Nasapakkam to DMS/Mylapore routes - 10 Tata Magic (only Tata Magics run on this route)
3. Parrys - 10 Ape Diesel
4. Guindy - 10 Ape Diesel, 10 Tata Magic, 2 Mahindra Maxximo and 3 Share autos
5. OMR Tidal Park - 10 Ape Diesel, 10 Tata Magic and 3 Mahindra Maxximo

6. Vadapalani - 20 Ape Diesel and 3 Share Autos (no Tata Magics ply on this route)
7. Anna Nagar- 10 Tata Magic, 5 Arjun and 3 Share Autos
8. CMBT- 10 Tata Magic, 5 Mahindra Maxximo and 3 Share Autos
9. Adyar - 10 Tata Magic and 2 Mahindra Maxximo
10. Egmore - 10 Ape Diesel, 10 Tata Magic and 2 Mahindra Maxximo
11. Velachery - 10 Ape Diesel, 5 Tata Magic
12. Ambattur/Maduravoyal - 10 Ape Diesel
13. Vyasarpadi - 10 Ape Diesel, 5 Tata Magic
14. Shollinganalur - 10 Ape Diesel and 10 Tata Magic
15. Perambur - 5 Ape Diesel, 5 Tata Magic and 2 Share Autos

5.2. Passenger Sample

The passenger survey questionnaire was developed to collect specific estimates of commuter characteristics. A random sample of 400 was drawn from a population of commuters who travelled by Share Autos. The survey was conducted on predominant Share Auto routes at various pockets of Chennai city during the week to understand behavioural aspects of these passengers.

The questionnaire consisted of the following:

1. Details of travel
2. Cost and waiting time
3. Satisfaction of passengers with share auto
4. Satisfaction with aspects of the journey
5. Satisfaction with the driver
6. Demographic information for classification purposes

5.3. Data Entry

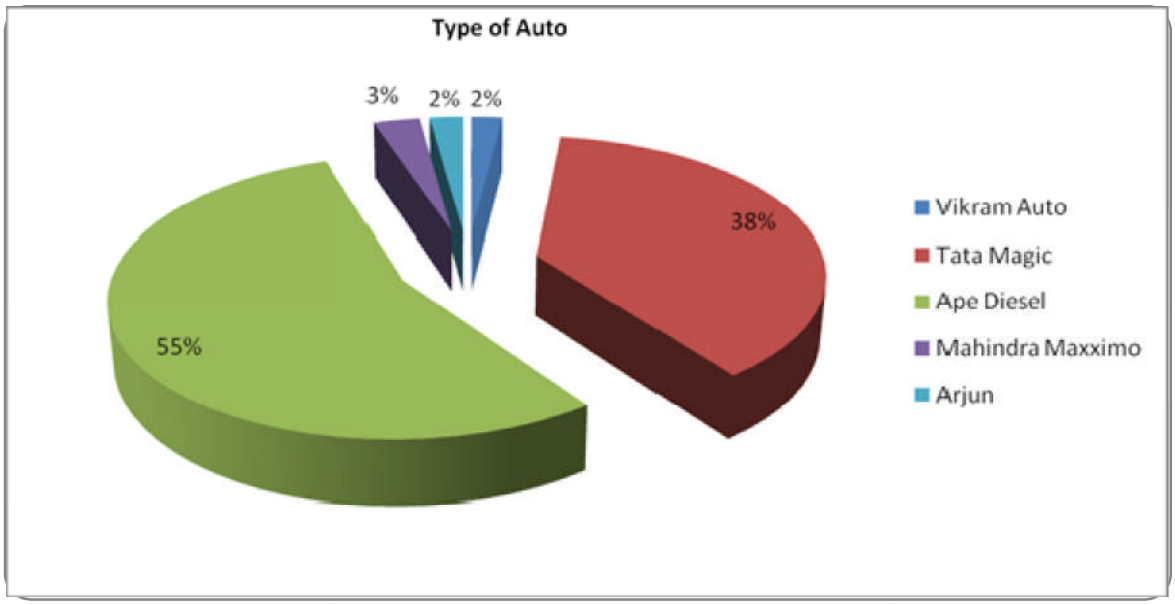
After the final fielding of the questionnaire, data entry for driver and passenger inputs was done separately. Each record was validated before the data was analysed. Further, data cleaning was performed and outliers removed. After validation, the data was analysed and the results interpreted further in this report.

Analysis of Data and Interpretation

6. Analysis of Data and Interpretation

6.1. Types of Share Autos

Graph 3



This Study revealed that licensed Share Autos were just 200 in number, whereas the unlicensed ones amounted to 12,000. This clearly shows a deficit in the government's issuance of licenses and the reason for the emergence of an informal sector of Share Autos, keeping in mind the number of people utilising their services. It can be inferred that market demand is the driving force behind the distribution of Share Autos in different parts of the city. Despite the government not recognizing this sector, we find new players entering the market, highlighting a deficit in the public transit system.

6.1.1. Comparative Study: Thiruvottiyur and Ashok Nagar

This Study observed that the Ape Diesel vehicles, which are comparatively older than the Tata Magic and Mahindra Maxximo, were found mostly in North Chennai. There are around 3,000 Ape Diesel vehicles in this area alone. North Chennai is the industrial hub of the city. The area has a large number of small, medium and large scale industries.

The Tata Magic vehicles ply mostly in South Chennai. South Chennai is the commercial centre and middle class residential area of the city. The difference in distribution, based on the type of auto, can be related to the economic profile of the residents in these areas.

The table given below shows the value of the land in Thiruvottiyur (North Chennai) and Ashok Nagar (South Chennai):

Thiruvottiyur (North)		
Name Of The Area	**Category**	**Guideline Value (Sq Mt/ Hect, in ₹)**
Anjugam Nagar—1	Residential Area - Class I	8,615.00
Sathanthapuram (New Colony)	Residential Area- Class Ii	6,460.00
Annamalai Nagars/Streets/Cross Streets	Residential Area - Class Iii	5,385.00

Ashok Nagar (South)		
Ashok Nagar 11th Avenue	Residential Area - Class I	43,056.00
Ashok Nagar 12th Avenue	Residential Area - Class Ia	35,521.00
Ashok Nagar 19th Avenue	Residential Area - Class Ii	25,403.00
Ashok Nagar 19th Street	Residential Area - Class Iia	18,622.00
Ashok Nagar 1st Cross Street	Residential Area - Class Iii	13,024.00

Source: http://www.tnreginet.net/english/faq.asp

It is clear that the value of land in Class I area of Thiruvottiyur is far lesser than the Class III area of Ashok Nagar.

This, it is inferred that the profile of residents is also different in these areas. The population in North Chennai falls into the lower class or middle class segments, while South Chennai comprises of the upwardly mobile middle class, upper middle class and higher class. Most of the IT companies are also situated in this part of the city.

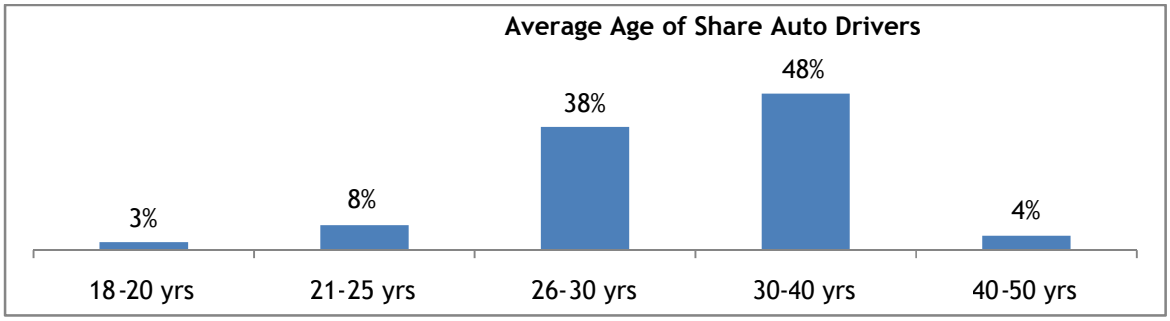
The Study revealed that passengers from the upper economic strata did not prefer Ape Diesel autorickshaws; their build and look were identified as de-motivating factors. This class of commuters seek modern-looking vehicles, and hence, the demand for Tata Magics and Mahindra Maxximos has increased in South Chennai.

However, in North Chennai, the streets are narrower and the roads are in poorer condition. The smaller body of the Ape Diesel auto enables it to manoeuvre these areas better, enabling passengers to reach their destinations faster.

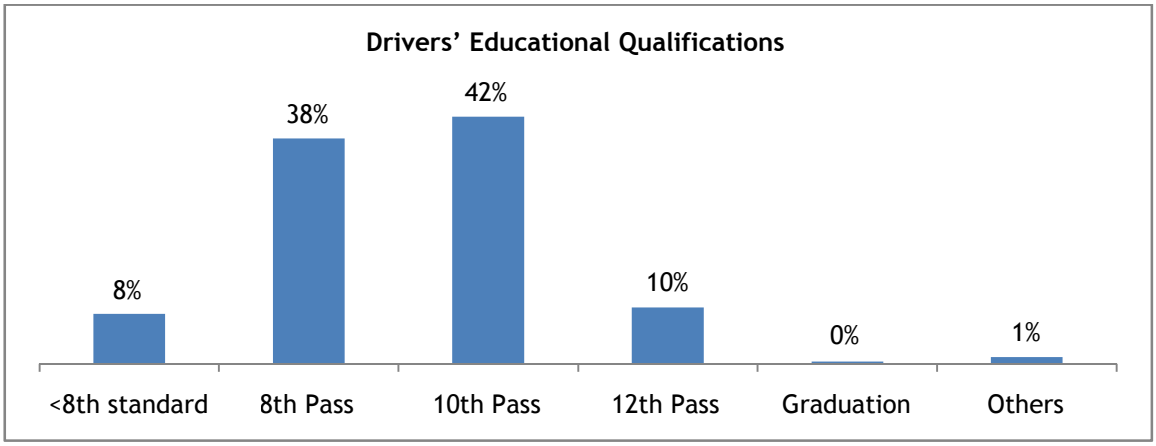
Yet another factor for the absence of Tata Magics in North Chennai is the objection from Ape Diesel drivers. The Study revealed that drivers from this region did not allow new players in. This attitude of theirs is supported by the labour unions as well.

6.2. Profile of the Drivers

Graph 4

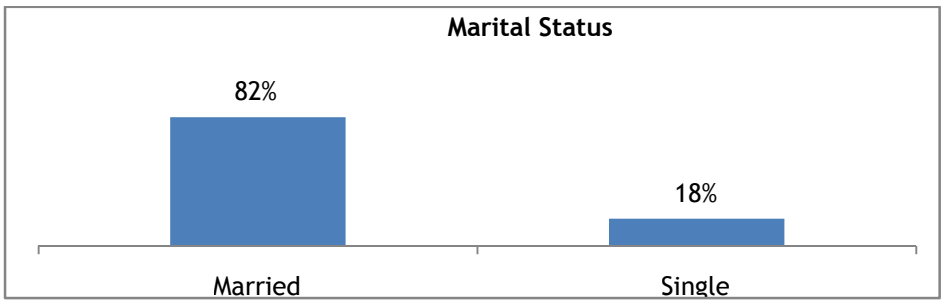


Graph 5

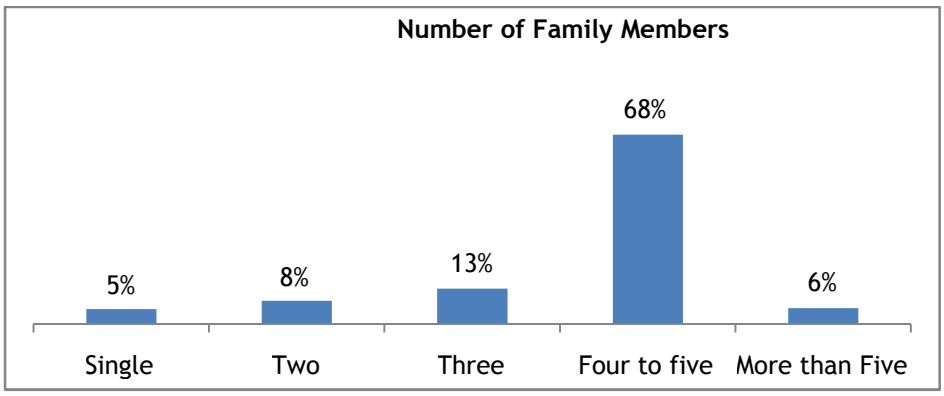


Ninety four per cent of Share Auto drivers fall in the age group of 21-40 years. Only four per cent are in the age group of 40-50. This poses a question of 'social security', as those older than 50 years will no longer be physically competitive to earn a living. It is evident from Graph 5 that 89 per cent of the drivers have educational qualifications varying from less than 8th standard to 10th standard. Hence, they don't fall under the category of 'skilled labour' and hardly have any choice of employment after they cross 50 years of age. This could force them into a situation where they will be compelled to earn enough money to sustain for the rest of their lives.

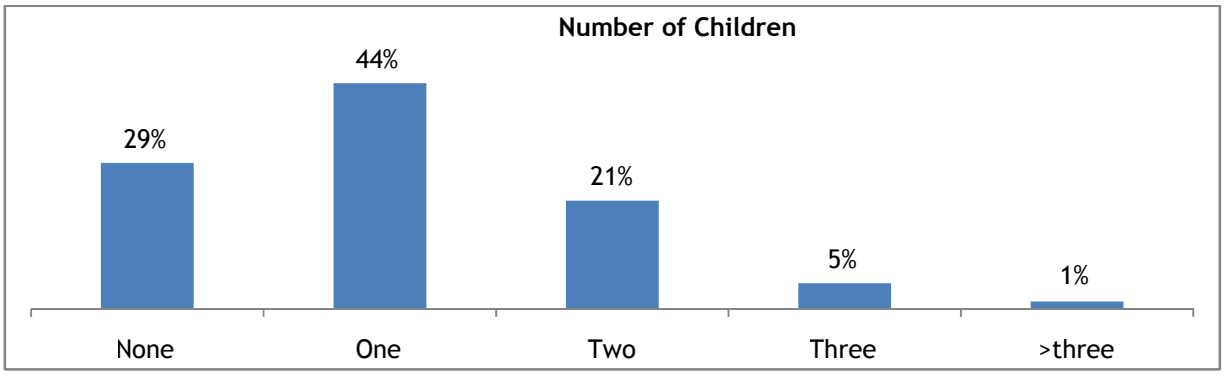
Graph 6



Graph 7



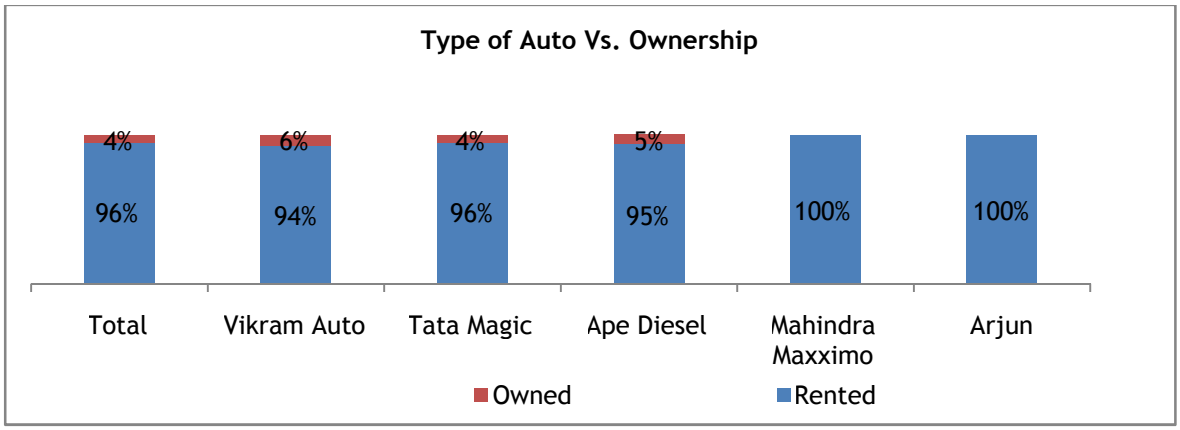
Graph 8



The survey findings also revealed that a majority of the Share Auto drivers were married (83 per cent); this can also be justified by the 30-40 years age group of drivers. While 29 per cent of the drivers don't have children, five per cent have three or more. Seventy four per cent of the drivers have more than four family members.

6.2.1 Type of Auto vs. Ownership

Graph 9



Ninety six per cent of the Share Autos are rented. The survey revealed that all Share Autos surveyed in the category of Mahindra Maxximo and Arjun were rented. Ninety six per cent of the Tata Magics and 95 per cent of the Ape Diesel autos are rented.

As mentioned earlier in the report, the number of licences issued for Share Autos, for a metropolitan city like Chennai, was negligible and among those licensed, 94 per cent are rented. One of the intentions of the government in issuing licenses to the Share Autos was to give self-employment to the unskilled labour of the city. However, this policy does not seem to have achieved its goal.

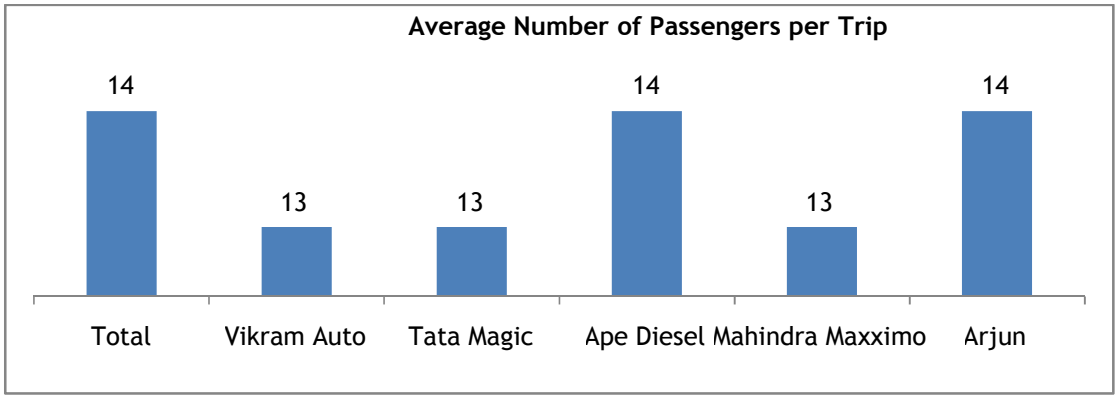
6.3. Economy of Share Autos

The Share Auto sector, though informal, contributes to the economy of Chennai. It has been 13 years since the concept of Share Autos was introduced. However, competition in the sector started only after the introduction of Tata Magic vehicles in 2009. Till then, Ape Diesel was enjoying a monopoly over the market since the Vikram autos were only 200 in number. The market for Share Autos is yet to be exploited in many areas of Chennai and the reason for the delay in implementation is the restriction posed by the government and the authorities. From personal interviews conducted, it was observed that most of the drivers of unlicensed Share Autos sought proper licenses, which would free them from the fear of the traffic police.

The discussion below throws light on the revenue generated by the number of people served by the Share Auto sector in Chennai.

The average number of trips (point A to point B) undertaken by Share Autos per day is 22 and the average kilometre run is 135. Thus, the average number of round trips (point A to point B to point A) is 11. It was revealed that Share Autos were generally used for short-distance trips ranging from 5 to 6 kilometres. For example, a Share Auto does not run from Koyambedu to Royapettah located at a distance of 7kms. The route is divided, and the market shared. This ensures that service is prompt and the drivers understand local traffic conditions.

Graph 10



The average number of passengers for a round trip includes people who board and alight at various points on a route. The number of passengers per trip varies, depending on whether it is a peak hour or an off-peak hour trip. The passengers carried per round trip are an average 14, as per the survey. It was also observed that the distribution was relatively the same across Share Auto types.

6.3.1 Average Number of Passengers Carried by Share Autos

From the Study, it can be concluded that one Share Auto caters to around 154 passengers per day - 14passengers per round trip multiplied by 11round trips. Hence, Share Autos in the city cater to around 18,48,000 passengers per day. The number of passengers served by MRTS per day is 70,000, just 4 per cent of the passengers served by Share Autos per day. This highlights the significance of this sector in providing transportation to a large number of passengers in Chennai

and raises pertinent questions regarding the government's approach towards the sector. It also reinforces the need to recognise the Share Auto sector as a 'public transport system'.

6.3.2. Fare

The average fare cannot be directly determined, as the fare charged differs with the number of kilometres travelled. Although Share Autos are officially expected to charge ₹ 1 per kilometre, most drivers charge a minimum fare of ₹ 5. The fare ranges from ₹ 5 to ₹ 15. This Study revealed that fares differed with routes, depending on traffic jams or the prevalence of regular traffic police checks.

In the Study, ₹ 7.5 and ₹12.5, which is the 'means' of the lower range (5-10) and upper range (10-15) of fare, are taken as the lower and upper range of fare. The income of Share Autos is calculated on the basis of this.

6.3.3. Revenue Earned by Share Autos per Day

Table 11: Calculation of Revenue of Share Auto Drivers

Number of Average Round Trips	Number of Passengers per Round Trip	Mean of Lower Range of Fare	Mean of Upper Range of Fare	Range of Revenue
11	14	₹. 7.5	₹. 12.5	11*14*7.5 to 11*14*12.5 = ₹.1155 to ₹.1925

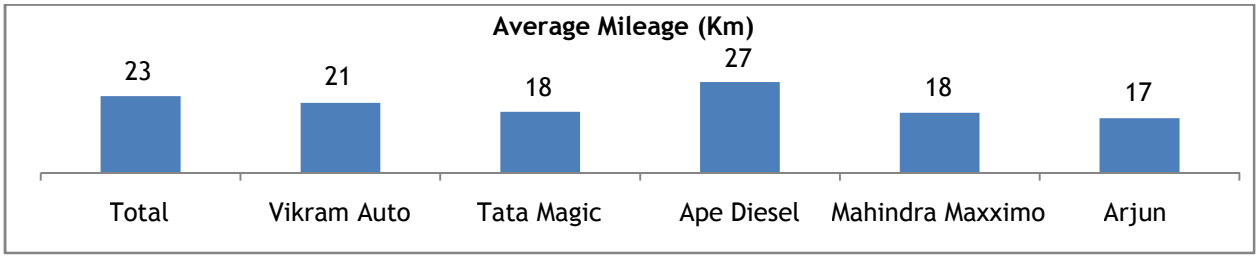
The range of revenue is from ₹ 1,155 to ₹ 1,925. The range of revenue generated by the entire population of Share Autos is ₹ 1,38,60,000 to ₹ 2,31,00,000 per day.

The Master Plan II of CMDA suggests promotion of the informal sector, but insists only on creation of hawking zones and establishment of a participatory mechanism for orderly conduct of urban vending activities. The authorities should open their eyes to and recognise the contribution the Share Auto sector makes to the transport system.

6.3.4.The Expenditure Incurred by Drivers

This Study revealed that the average kilometres run per Share Auto on a single day is 135 km. The drivers said to meet their expenses and make profit, they had to run at least 130 km per day.

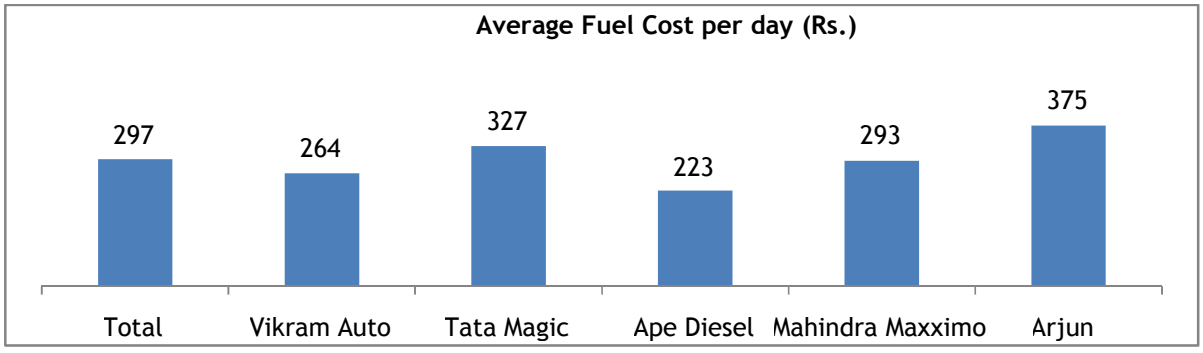
Graph 11



The Study revealed that the average mileage was 23 km per litre. Ape Diesel has the highest mileage of 27 km per litre and Arjun lowest with 17 km per litre. The impact of mileage is seen on fuel expenses per auto.

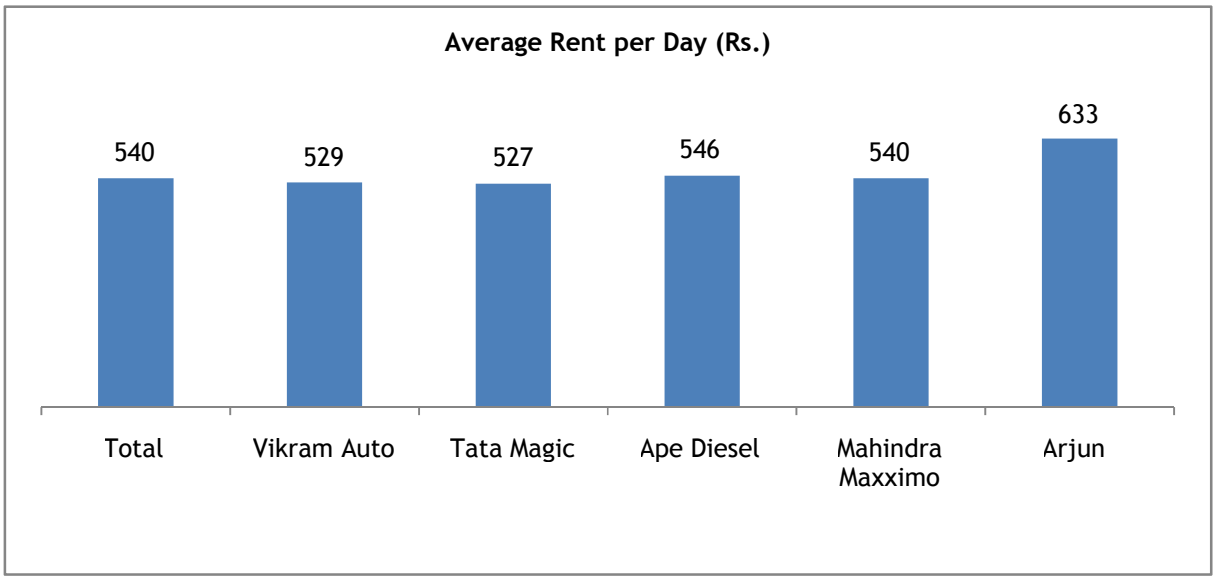
Considering the fact that all the vehicles run around 135 kilometres per day, the Ape Diesel has the lowest fuel cost, when compared to other types. Consequently the income earned per day is more.

Graph 12



6.3.5. Rent

Graph 13



The average rent for all makes of autos is ₹ 540. The rent per type of Share Autos ranges from ₹ 529 to ₹ 633.

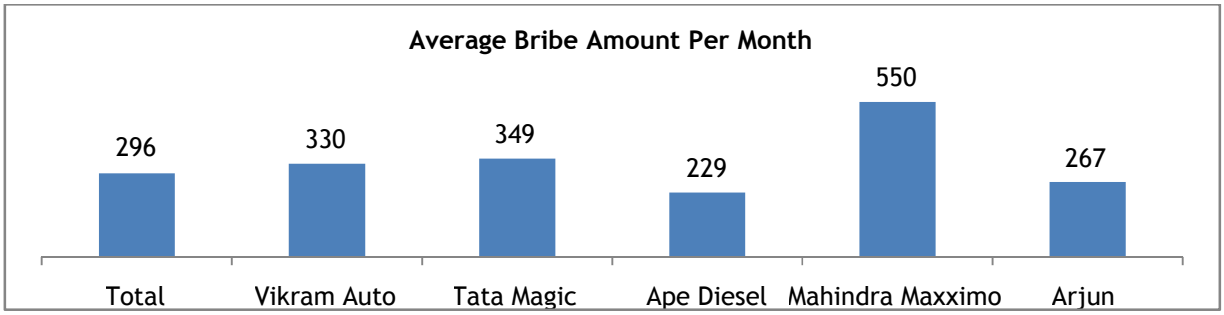
6.3.6 Average Income Earned per Day by Share Autos

Table 12: Average Income of Share Auto Drivers per Day

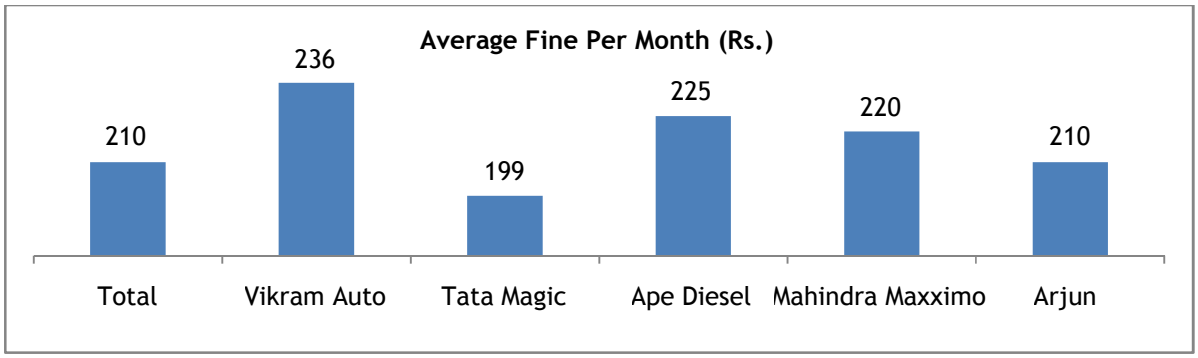
Average Revenue (Mean of Lower Value and Upper Value)	Average Fuel Expenditure	Average Rent	Average Income
Rs1,540	₹ 297	Rs540	Rs703

6.3.7. Bribes and Fines

Graph 14



Graph 15



Though the bribes paid by Share Autos might seem to be minimal, for the average of ₹ 296 per month accounts to ₹ 35,52,000 per month for the total population of Share Autos. The average fine amount is ₹ 210 per month, thus amounting to ₹ 25, 20,000. The combined figure of ₹ 60,72,000 accounts for more than 67 per cent of the collection of MRTS per month, which is around ₹ 90,00,000.[40]

Bribe are paid to the traffic police to let unlicensed Share Autos ply on the roads, while fines are charged for violating traffic rules (which includes allowing more than one person on the driver's seat, not wearing uniforms, overloading the vehicles). This causes a loss to the state due to

[40] http://www.thehindu.com/news/cities/Chennai/article553984.ece, Accessed on September 08, 2011

bribes that go to the pockets of the officials rather than the treasury. Formalising of Share Autoscan reduce and check unwanted fines and forced bribes to an extent. , The additional tax amount obtained can be appropriated by the government and used for the improvement of public transportation as a whole.

Another fact that can be observed from the graph is that Mahindra Maxximo and Tata Magic drivers pay more bribes, when compared to the other types. Mahindra Maxximo drivers on an average pay ₹ 550 per month and Tata Magic drivers ₹ 349. From personal interviews with the drivers, it is inferred that the police target 'modern' vehicles like Tata Magic and Mahindra Maxximos and they pay more bribes, when compared to the other older models.

The licensed Vikram autos also do not follow rules set by the government. Due to the lack of paratransit vehicles in the city, they also tend to overload their vehicles and carry passengers above the capacity limit.

The Study also observed that the drivers, in a few areas of the city, voluntarily pay regular fines, to avoid being fined extra. There is an informal understanding between Share Auto drivers and the police, allowing them to ply on various routes.

"I ask the traffic police for a 'fine' receipt. He charges me ₹ 50 every day and I am exempted from paying additional fines for that day, if I am caught again. This is better than paying ₹ 500 while plying with passengers," said a Share Auto driver in Parrys.

The traffic police have also identified designating pickup and drop places for Share Autos. These areas will be demarcated by barricades with signboards and will typically not close to bus stops.[41] This move was a result of complaints regarding Share Autos blocking other vehicles, unorganised parking and causing inconvenience to pedestrians and passengers.

[41] http://www.thehindu.com/news/cities/Chennai/article2318450.ece. Accessed on August 21, 2011

Picture 12: Share Auto Dropping Point

This can be considered as one of the first steps towards the absorption of these players into the formal framework.

6.4. Travel Conditions

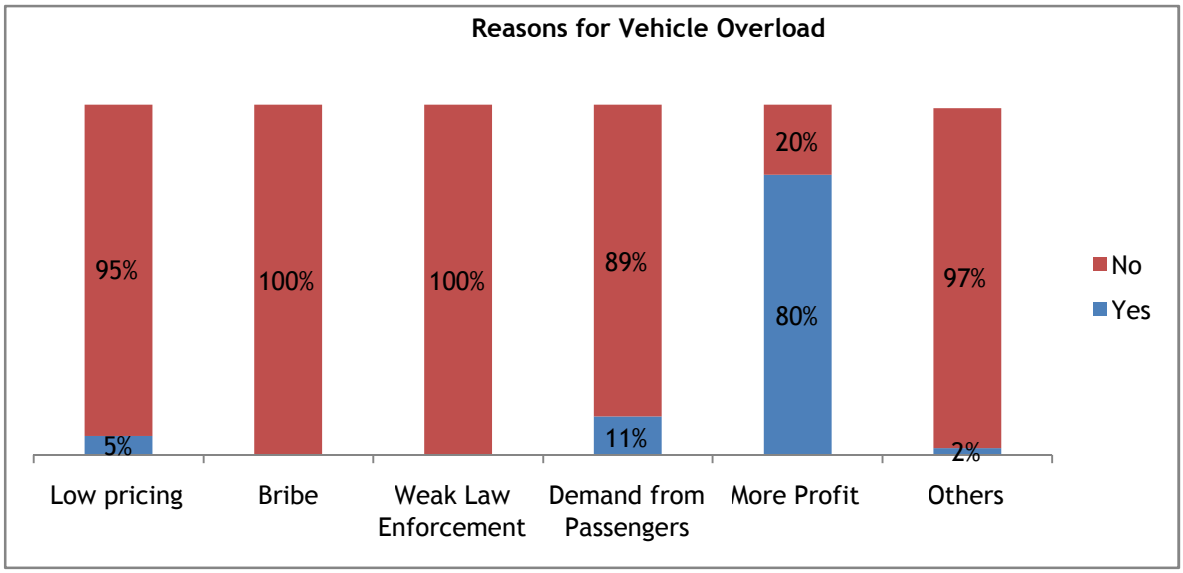
6.4.1.Authorised Capacity per Type of Share Auto

Table 13: Capacity of Share Autos

Type of Share Auto	Authorised Capacity
Vikram	5+1
Ape Piaggio	3+1
Tata Ace Magic	7+1
Mahindra Maxximo	7+1
Arjun	5+1

The Study observed that during peak hours, i.e. in the mornings from 8 am to 11am and in the evenings from 5 pm to 8 pm, most Share Autos carry more than the allowed capacity. The drivers were of the opinion that their vehicles had enough space to accommodate more passengers than allowed and didn't consider it overcrowding.

Graph 16: Reasons for Vehicle Overload



Below mentioned are the reasons cited by drivers for overloading of their vehicle.

To Earn More Profit

Eighty per cent of the drivers said earning profit was the reason to overload their vehicles. As mentioned earlier, a huge part of the total revenue earned per day goes towards the rent and fuel of the vehicle. This makes their income comparatively lesser than what they could have earned had they owned the vehicle. Unlike the formal sector, these drivers don't get economic security on retirement, and are not skilled labour. This forces them to earn enough in 20 – 30 years of driving to support their families.

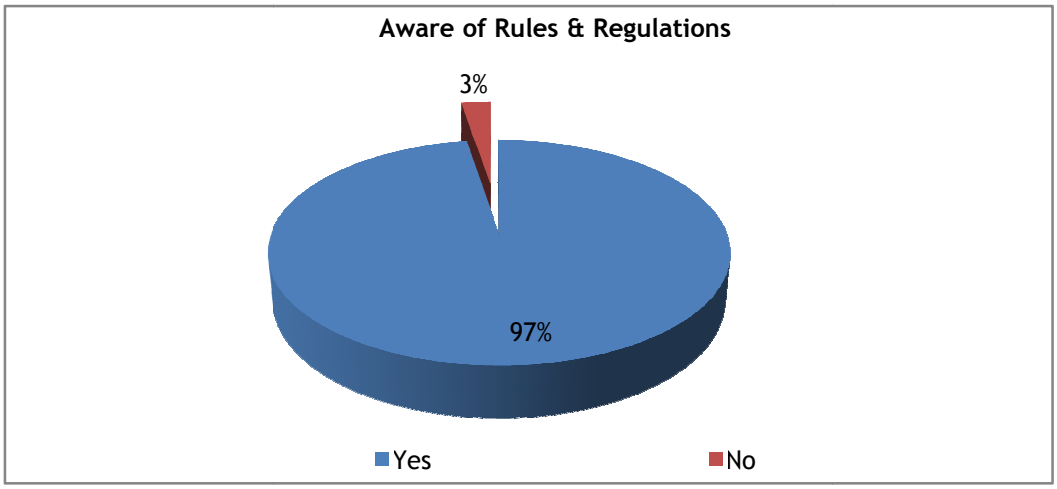
Demand from Passengers

Eleven per cent of the drivers said the demand for service was so high that the current fleet of Share Autos was not able to cater to it. They added that passengers often did not mind sitting in a crowded Share Auto as they were more concerned about reaching their destinations on time.

Low Pricing

The drivers (5 percent) claimed that low fares were another factor why most vehicles were overloaded. The competition in the market does not let a single driver or group of drivers to influence the price. A collective rate is fixed by all the drivers for a specified route. Therefore, when a driver is not able to earn enough income, he resorts to carrying more passengers than the allowed capacity.

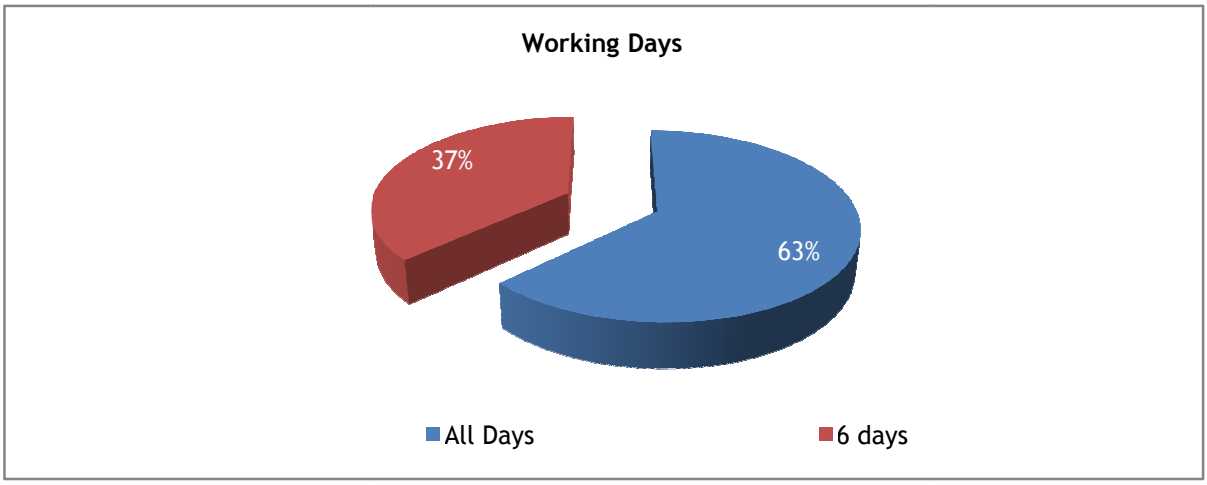
Graph 17



This Study revealed that only three per cent of the drivers said they were not aware of traffic rules and regulations. While aware of the rules, drivers choose to break them, as they consider themselves to be the main players in helping people move around the city on less cost and more comfort. The drivers' general opinion is that they provide flexible and accessible services in the city and the government should take necessary steps to recognise them as one of the mainstream modes of transportation.

6.5. Working Schedule of the Drivers

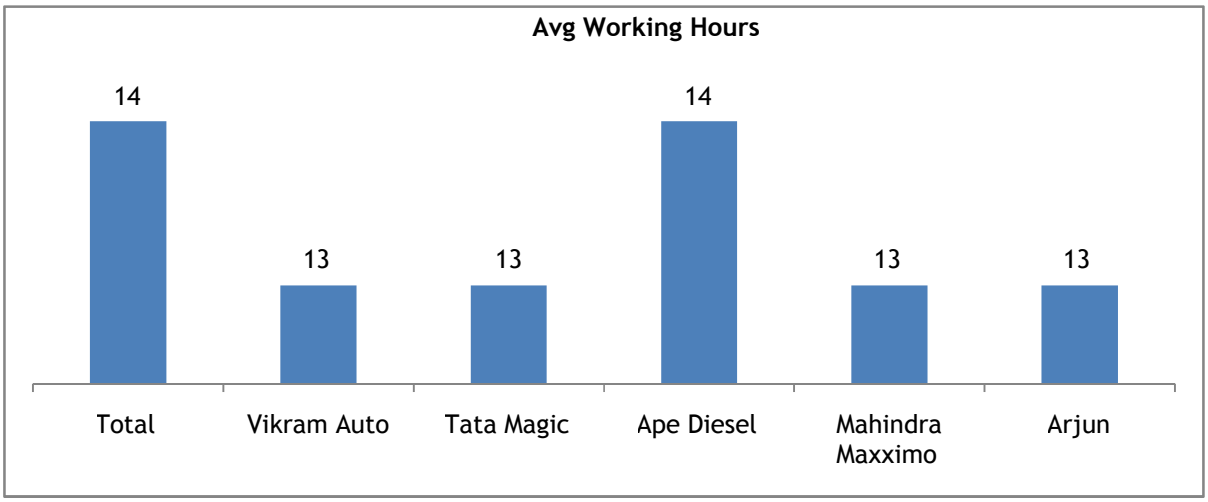
Graph 18



Share Autos as a public transportation system proves to be a very reliable one. This Study throws light on the number of days Share Auto drivers work in a week. While 63 per cent of the drivers said they plied all seven days, 37 per cent said they worked six days. This ensured transportation for commuters on any main street in the city.

6.5.1. Average Number of Working Hours

Graph 19



This Study revealed that the average number of working hours per Share Auto driver was 14 hours a day. As mentioned earlier, only drivers below the age of 40 can cope with such hectic work schedules. However, they lose time waiting for passengers during off peak hours. They also take some time off for a few leisure activities.

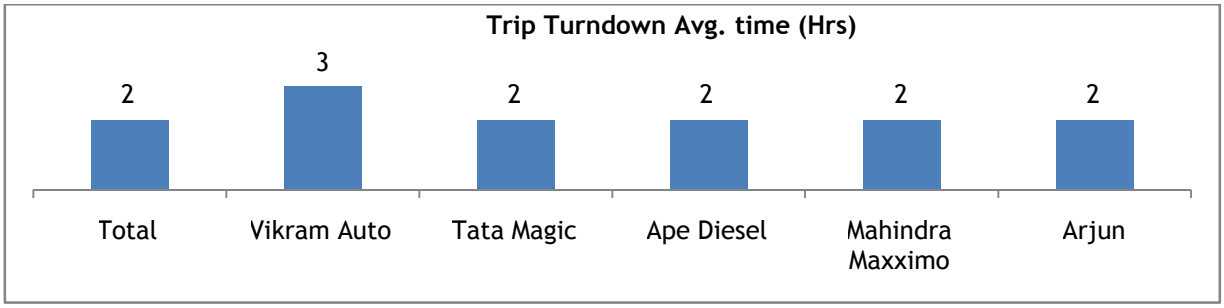
6.5.2. Number of Idle Hours

Trip turndown (the time spent waiting for passengers) is an important factor in accessing the work hours of the driver. If a driver has to wait long for a passenger, his trips will be lesser than expected, which in turn affects his income. These are the number of hours involuntarily wasted by drivers.

The trip turndown depends on the land-use pattern of the location where Share Autos ply. For example, on the Guindy Industrial Area - Ashok Pillar route, most drivers have a trip turndown from 11 am to 4 pm per day. However, Share Auto drivers in areas near High Court are continuously plying with less than two hours of trip turndowns. A floating population uses Share Auto services in the commercial and administrative areas of the city, whereas in places such as

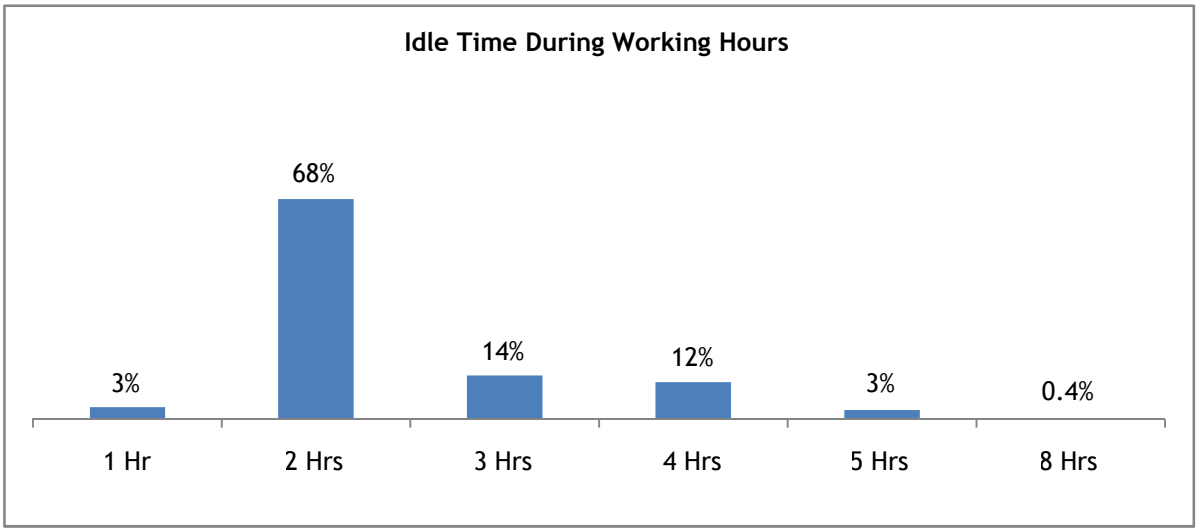
Guindy Industrial Area, most of the passengers use these automobiles to reach their place of employment.

Graph 20



The graph above shows that the average trip turndown accounts for two hours per day. It is almost the same for all types of Share Autos. This situation could be avoided to an extent if the Share Autos were integrated with the MRT.

Graph 21



Eighty five per cent of the drivers take one to three hours off work daily for meals, rest, reading news papers and talking to fellow drivers.

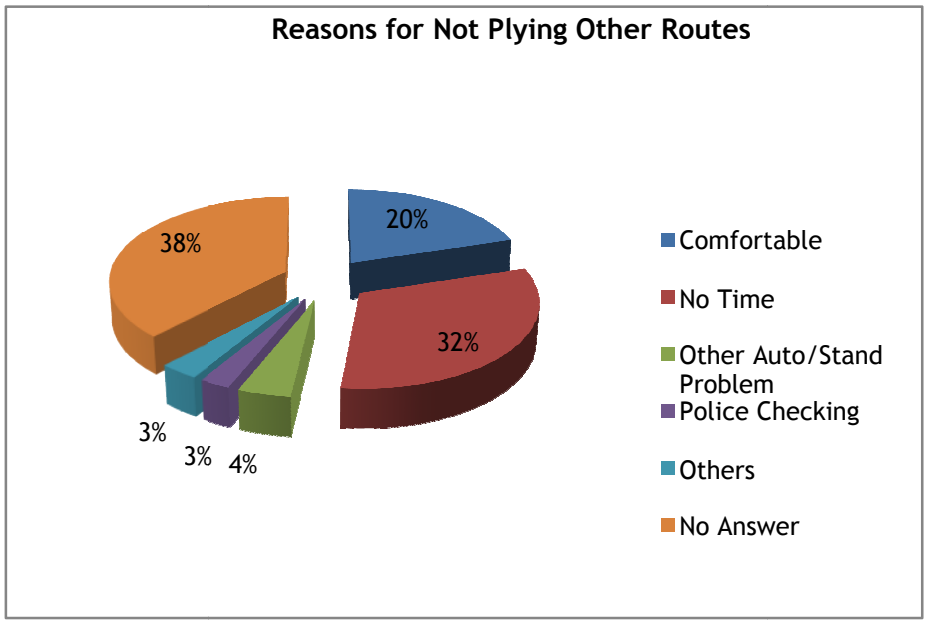
6.6. Routes and Differential Pricing

The survey showed that drivers stick to the same route across their work schedule. They change their routes or extend the length of the trip in the nights. In some places, for example in Parrys,

drivers who are not part of any union change their routes according to the availability of passengers.

Most of the drivers ply their Share Autos near their place of residence. The new drivers are required to get informal permission to offer services from those already plying on that route. The unions play an important role in settling issues between drivers.

Graph 22



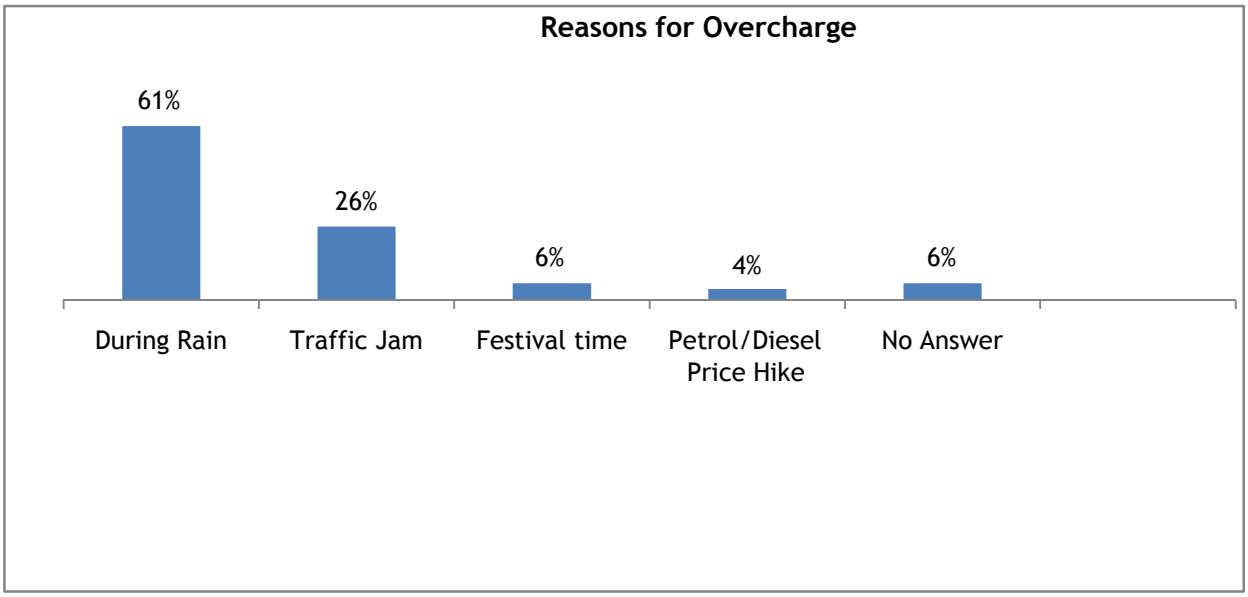
Twenty per cent of the drivers said the routes chosen were comfortable. Factors such as proximity to their residences, availability of parking place, accessibility to eateries and passenger demand helps them choose a fixed route.

Thirty two per cent of the population said they did not have time to ply on other routes, as they had enough passengers on their fixed routes.

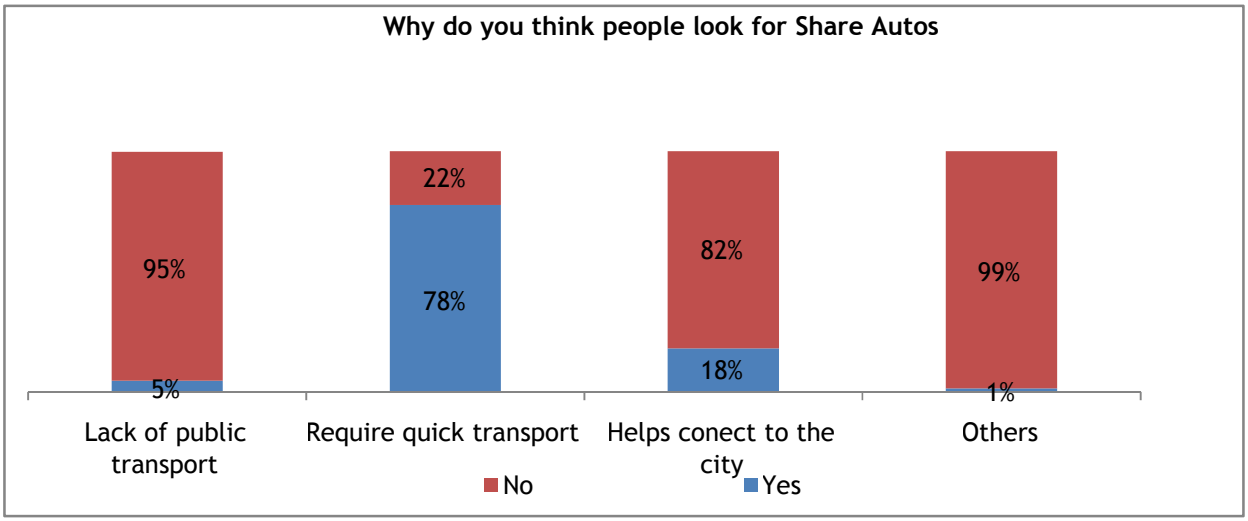
Four per cent drivers were found to have problems with other auto stands and drivers. The union-regulated auto stands only allow their members to park their vehicles. A membership card and a sticker on the vehicle help identify the driver.

Regular checking by police is another factor that discourages drivers from changing their routes on demand. Drivers are often stopped by the police to check drivers who change routes. Though there is no formal scheduling of routes, the police conduct regular checks on drivers plying on different routes. The flexibility that paratransit enjoys is restricted by rules and regulations that refuse to recognise them as Share Autos.

Graph 23



Graph 24

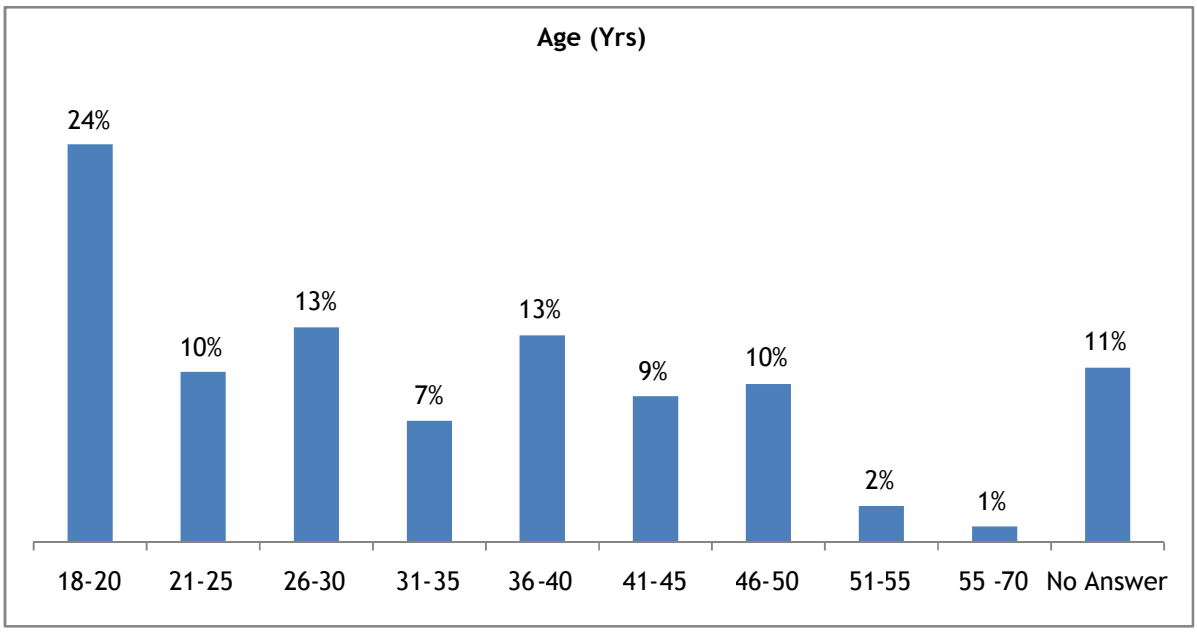


Seventy eight per cent of the drivers opine that passengers opt to travel by Share Autos because they offer quick transportation. The time taken by Share Autos to ply on shorter routes is much lesser because they don't have specified route permits and can take alternate routes in case of traffic jams. Unlike buses, Share Autos are not required to halt at designated stops. Eighteen per cent of the drivers said Share Autos were good channels through which remote areas of the city were connected to the main city. Areas that do not have a well-connected public transportation system survive on Share Auto services.

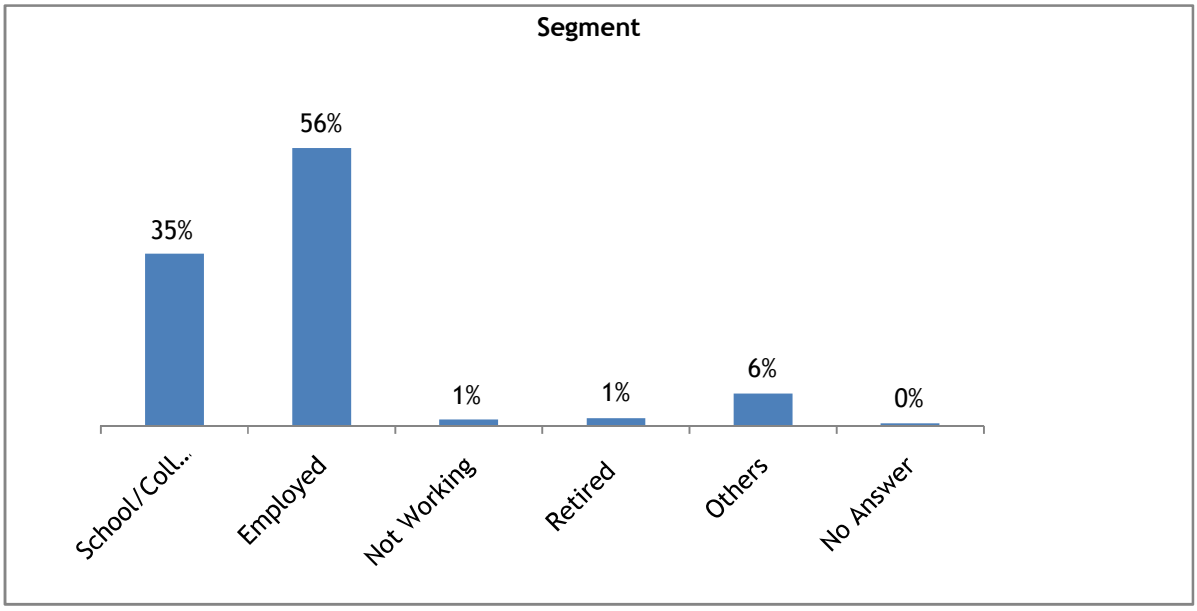
6.7. Profile of the Passengers

Out of 405 passengers surveyed, 82 per cent were male and 18 per cent females.

Graph 25



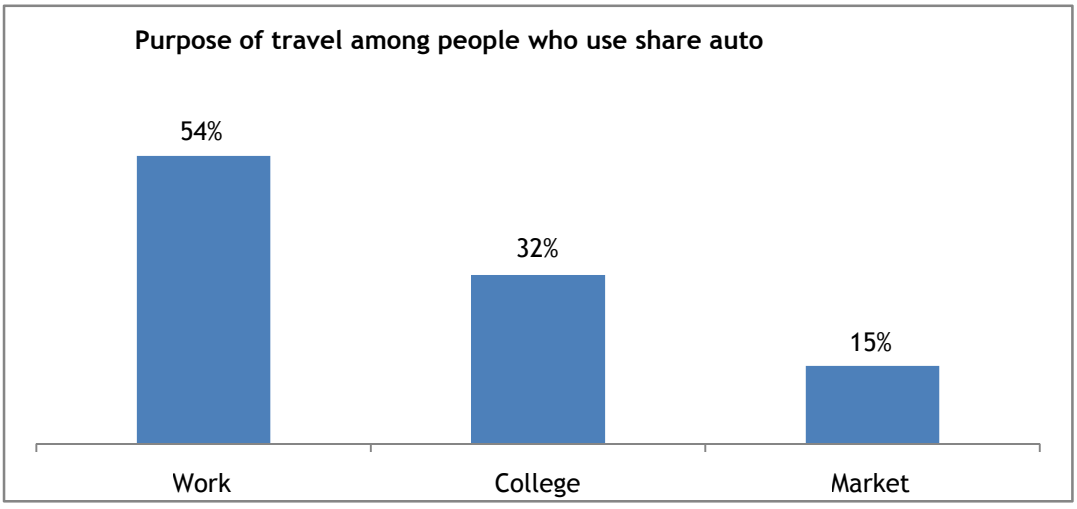
Graph 26



The Study revealed that 67 per cent of Share Auto passengers were in the age group of 18-40. Only 22 per cent of the passengers were in the age group of 40-70. Fifty six per cent of the passengers are employed and 35 per cent are students. This shows that most passengers use Share Autos to go to their places of employment or education.

6.7.1. Availability of Passengers

Graph 27



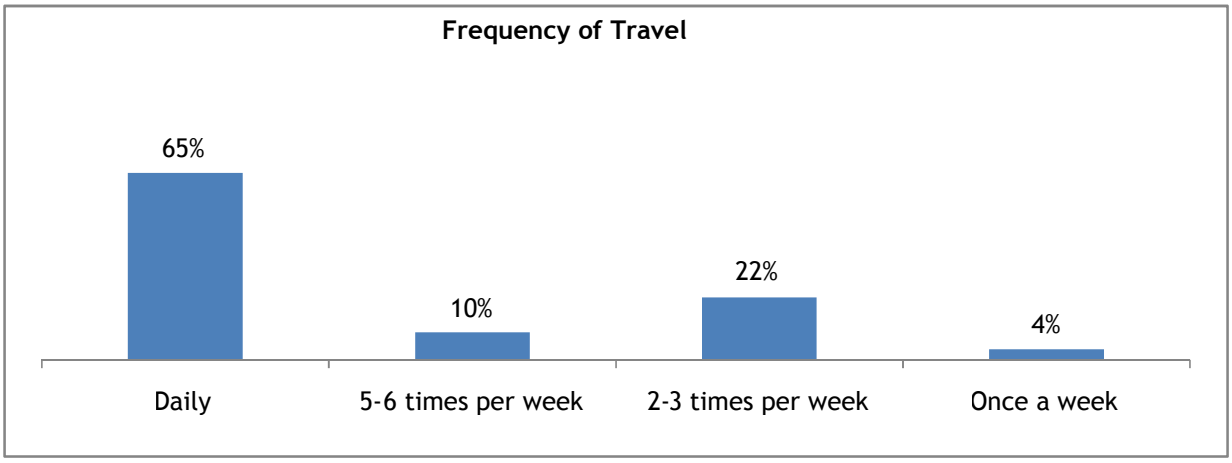
Fifty four per cent of the passengers use Share Autos to reach their places of employment and 32 per cent travel to college by them. Fifteen percent of the travellers use Share Auto services to go to markets and shopping places.

It was also observed that the target population in each location was different, as it depended on land-use patterns. For example, most of the passengers who travel by Share Autos to reach Thyagaraya Nagar use them for reaching shopping areas. The drivers have a fair idea of the number of passengers who would use their services as it depends on the number of places of employment and education in a particular area.

The Study revealed that the availability of passengers depended on the time of day as well. Government and private sector employees use the Share Auto service between 8 am - 10 am and 5 pm - 8 pm, while street vendors mainly in North Chennai travelled by Share Autos at 11 am. Eighty five per cent of the passengers agreed that they used Share Autos between 8 am to 10 am and 4 pm to 8 pm.

It is clear that the Share Autos, unlike the normal autos, have a regular and fairly definite number of customers per day.

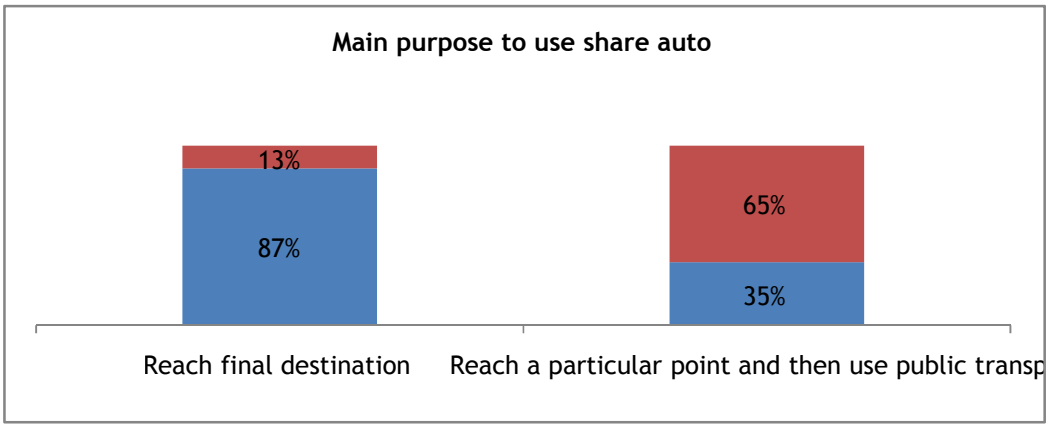
Graph 28



Sixty five per cent of Share Auto passengers travel daily. Only four per cent travel once a week. The drivers are assured of a definite income within a range, because of this fixed travelling behaviour of their customers. The market demand for Share Auto transportation is also well measured by the drivers. As the supply is decided upon by the drivers on a particular route, they are able to judge the impact of the introduction of a new player on their revenue.

6.7.2. Share Auto Usage

Graph 29



The Study revealed that 87 per cent of the passengers used Share Autos daily to reach their destinations. Thirty five per cent of them use Share Autos to reach bus stops or railway stations. The increasing use of a mixed mode of transportation i.e. using both paratransit and private mode of transportation has become a very important facet of urban mobility in Chennai.

The passengers opined that it was a waste of time to wait for a bus to travel two kilometres. “I have to walk for 200 meters to reach the bus stop and my house is just two kilometres from here. I prefer to take Share Autos, as they halt where I want to get down,” a passenger travelling from Doveton said. Commuters travelling short distances avoid crowded buses and opt for Share Autos instead.

6.8. Evaluation of Various Modes of Transportation

Table 14: Evaluation of Various Modes of Transportation (in per cent)

Category of Vehicle	Accessibility	Flexibility	Safety	Well Maintained	Reliable	Drivers are Friendly and Helpful	Gets the passenger to the destination	Amenity
Bus	26	71	28	39	64	58	59	39
Train	15	9	44	74	18	40	41	39
Auto rickshaw	99	83	94	90	67	64	75	65
Share Auto	65	81	82	81	85	80	77	77

6.8.1. Bus

The Study revealed that only 26 per cent of the passengers considered MTC buses to be easily accessible. They felt that the distance between their place of origin and the bus stop is a reason why they opt for Share Autos services, although the former is less expensive. In addition, there are very few low floor buses in Chennai, a fact that keeps the physically disabled and elderly away. They are then forced to take private transportation or maxi cabs for their transportation needs.

While 71 per cent of the passengers consider buses to be flexible, only 28 per cent of the passengers feel safe travelling in them, mostly due to overcrowding. The Study revealed that buses are often not cleaned, maintenance was poor, seats are tampered with and window glasses broken. These problems are, however, rarely addressed.

Buses have specified routes and timings. If passengers are aware of the timetable, they can plan their trip accordingly. A majority of the passengers (64 per cent) feel that buses are reliable and stick to the timings. Fifty eight per cent feel that drivers are friendly and helpful and 59 per cent feel that they do a good job of taking the passenger to his/her destination.

It is important to note that with improvement in the standard of living of people, the way people have begun to look at urban infrastructure has also changed. For example, urban transportation two decades back was a just means of mobility. Today, amenities and comforts provided by the transportation system has become part of middle-class aspirations. The increasing number of private vehicles is a good example.

6.8.2. Train

Only 15per cent of the passengers felt trains were easily accessible, as train stations are mostly located far off from the origin of passengers. Having to climb stairs to reach the next platform and standing in long queues to buy tickets make it an un-preferred mode of transportation for short-distance travel. Only nine per cent of the travellers think that the service is flexible. But 44 per cent of the passengers feel safe on trains. There are separate compartments for ladies and the physically handicapped. Seventy four per cent of the passengers said trains were clean and well maintained, but only 18 per cent think that they are reliable. The number of trains is fewer, when compared to buses, and they run late at times, making passengers feel they are not reliable. Forty one per cent opines that trains do a good job of taking the passengers where they want to go. Only 39 per cent say they provide amenities and comforts to passengers.

6.8.3.Autorickshaw

A staggering 99 per cent of the passengers feel that Auto Rickshaws were easily accessible to all. Eighty three per cent feel that the service is flexible and 67 per cent state it to be a reliable mode of transportation. Autorickshaws are prompt and take passengers where they seek to go, without wasting time. Ninety four per cent of the passengers feel safe in autos and 90 per cent feel that they are clean and well maintained. This is a preferred mode for short distance transportation. One drawback, however, is the overcharging of fares by drivers. Only 64 per cent feel that drivers are friendly. One third of the passengers surveyed said autos took them to their destinations and fared well at flag down services.

6.8.4. Share Auto

The quality of services provided by Share Autos range between those offered by autorickshaws and other public modes of transportation. Sixty five per cent of the passengers said Share Autos were easily accessible. Eighty one per cent of the passengers think that the service is flexible. Eighty two per cent of the passengers feel safe on Share Autos. Female commuters think that

they are a reliable mode of transportation at night. Everyone gets a seat in the Share Auto and there is no fear of getting crushed, stamped and pushed. Eighty one per cent of the passengers feel that the vehicles are well maintained and the complaints of the passengers are addressed by the drivers. Eighty five per cent feel they are reliable and prompt. There is no specific time table and the service is continuous. Seventy seven per cent feel the Share Autos took them to their destinations and they do not have to walk long distances.

The Share Auto sector responds to changes in the market positively and understands the pulse of the market. A comparison between the Share Auto usage in Ashok Nagar and Thiruvottiyur justifies this. More amenities, such as modern seats and music systems, are provided in the new generation autos (Tata Magics and Mahindra Maxximos) and passengers are happy with these developments.

The comparison between these modes shows that the Share Autos are preferred to the major public modes of transportation, i.e. buses and trains. Normal autorickshaws rank higher than Share Autos in accessibility, flexibility and safety. However, it should be noted that they are used for planned private trips and are not affordable for daily transportation.

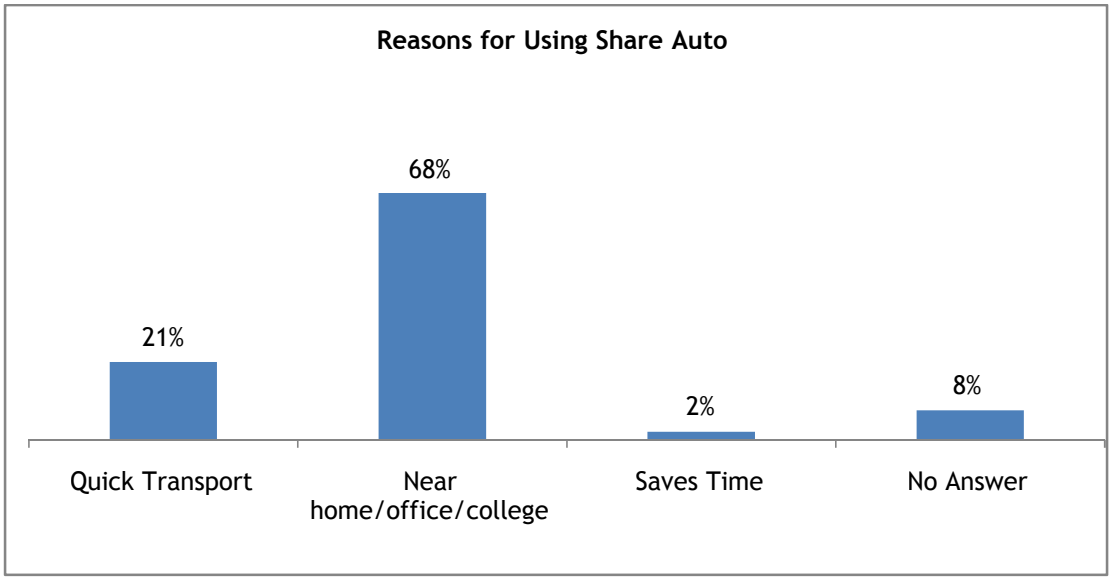
The problem of accessibility by trains and buses can be solved if the transit points are connected in a planned system. The importance of Share Autos as feeders gains prominence here.

6.9. Share Autos as Feeder Service

Huge investment is being made to improve transport conditions in Chennai. Mass Rapid Transit systems, such as metro rail and BRTS are being implemented. Experiences across the globe shows that mass rapid transit system can be successful only if they are well connected throughout the city. Studies on Bogota (Colombia) show that the success of the system is dependent on well-developed feeder services.

The pattern of Share Auto usage suggests that Share Autos are the best feeder services available in Chennai. This Study tried to understand the feasibility of using Share Autos as a feeder service to the upcoming Metro Rail in the city. Although passengers supported the improvisation of the public transportation system by introducing Metro Rail, they strongly supported the preservation of Share Auto services for short-distance travel. The metro rail covers only major transit points that are already connected by the Railways and the MTC. So, to achieve the targeted ridership for the metro rail, a strong network of feeders is required.

Graph 30



Sixty eight per cent of the passengers said they used this paratransit system because it gave them access to mobility near their origins and destinations. This shows that the Share Autos give better first-mile and last-mile connectivity, when compared to other public transportation modes. Twenty one per cent of the passengers considered the service as quick and time saving. Most of the Share Auto passengers said they didn't want to waste time waiting for a bus.

"The next generation of urban transportation is about connecting the dots, bringing diverse innovations together in ways that work for better for users than the single occupancy vehicles alone"

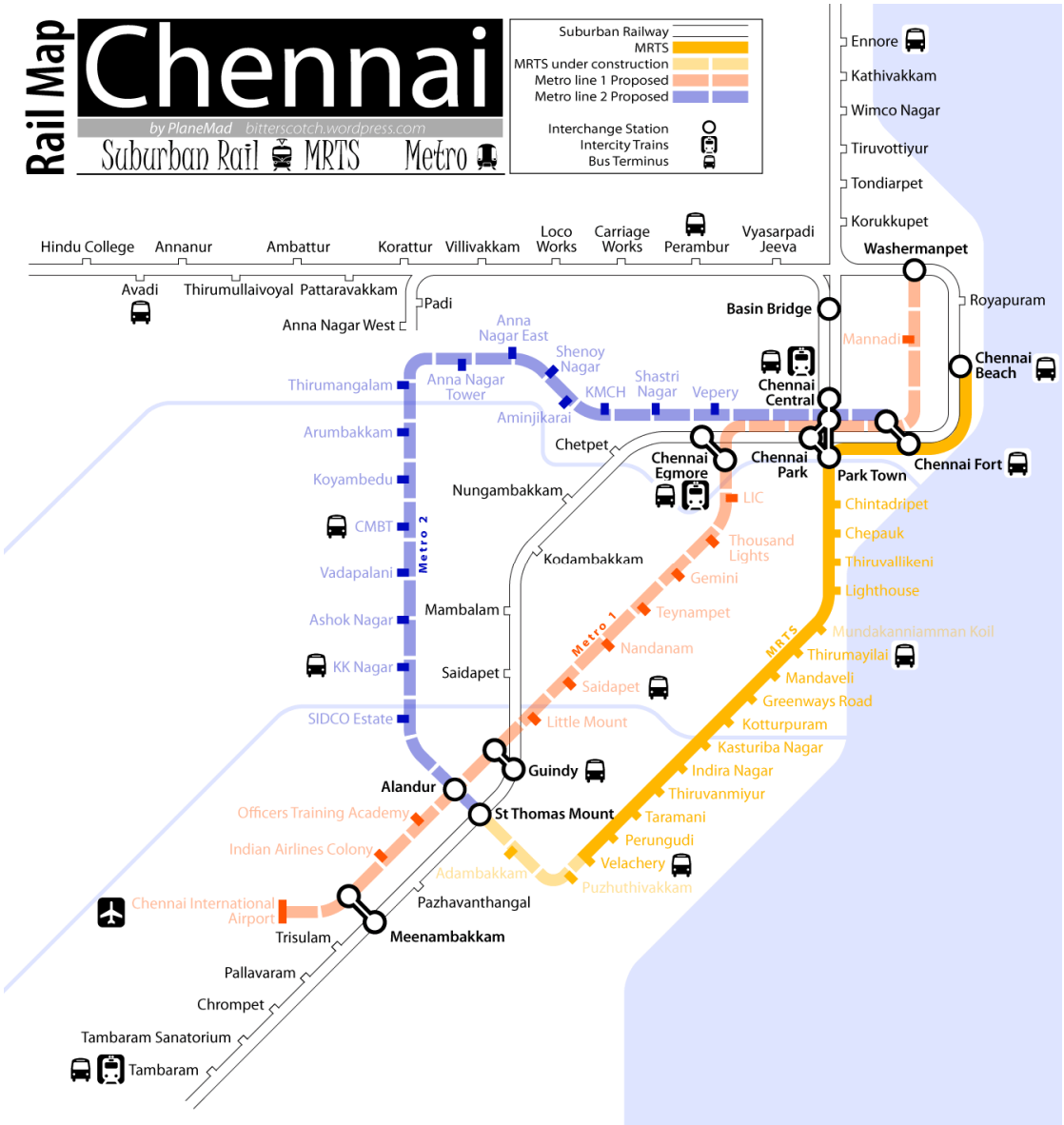
Susan Zelinski, Managing Director, SMART, Michigan

The average number of kilometres run per Share Auto is 135 and average number of trips made is 22. So, the maximum distance for a Share Auto trip is only six kilometres. MTC buses run for around 316 km per day and the overall number of trips made by MTC bus is 13 per day. So the average trip length is 24 kilometres. Buses are aimed at passengers who travel long distances on major routes. It is not advisable to run a bus in less denser areas or on narrow streets. Taking advantage of the smaller size and lesser cost of vehicles, Share Autos can ferry a huge section of population who live in the interiors to mass transit points.

Inefficient land-use plans and low-service coverage has caused difficulties in accessing public transport in Chennai. Through unrestrained operations, paratransit can admirably respond to fluctuating markets, fill voids of areas with poor public transports at relatively low fares than private modes of transportation in comparison to to existing public transit systems like MTC buses which run in losses and avail governments intervention.

The map given below shows the connectivity of Suburban Railways, MRTS and Metro and major bus terminals. There are many gaps that have to be filled by the feeder system, so that the targeted ridership of these main modes of transportation is achieved.

Picture 10: Chennai Transportation Map



Source: http://bitterscotch.files.wordpress.com/2008/04/chennai-metro.png

For example, Moolakadai is an important junction and people who travel by Suburban Railways alight at Peramabur to take another mode of transportation to reach it.

The table below shows the number of buses that connect these two areas and their frequency:

Table 15: Frequency of Buses Connecting Moolakadai and Perambur

Name	From	To	Frequency in mins*
7G	Broadway	Kaviarasu Kannadasan Nagar	16 mins
M164	Mathur M.M.D.A.	Perambur B.S	20 mins
M48A	Madhavaram	Ambathur Estate	33 mins
L138A	Periyar Nagar	Thiruvetriyur B.S	35 mins
X138A	Periyar Nagar	Thiruvetriyur B.S	47 mins
M64P	Perambur B.S	Minjur New Terminus	54 mins
29DEXT	Mathur M.M.D.A.	V.House	57 mins
L170CE	Manali	Guindy Tvk Estate	90 mins
L64B	Broadway	Minjur New Terminus	95 mins
64B	Broadway	Minjur New Terminus	100 mins
S29CXT	Mathur M.M.D.A.	Thiruvanmiyur	105 mins
L29CXT	Mathur M.M.D.A.	Thiruvanmiyur	105 mins
L46C	C.M.B.T.	Kodungaiyur(Parvathi Nagar	130 mins
M48B	T.V.K.Nagar	Ennore	160 mins
M48AEX	Madhavaram	Mogapair West	160 mins
48B	T.V.K.Nagar	Ennore	160 mins

Source:http://my.metrocommute.in/Chennai/Using-Buses-or-Trains/Connecting/Moolakadai/with/Basin%20Bridge%20RS?via=Perambur

The table highlights the fact that the frequency of buses in this area is low. People from these areas do not have any other public mode of transportation to reach the railway station. It is to be noted that most of these services do not start from Moolakadai or Perambur. Hence, the buses are already crowded when they reach these areas and commuters are inconvenienced. Travelling by Share Autos ensures them a seat and drop right outside the Railway Station. This case study explains the importance of the Share Autos sector as a feeder system in Chennai.

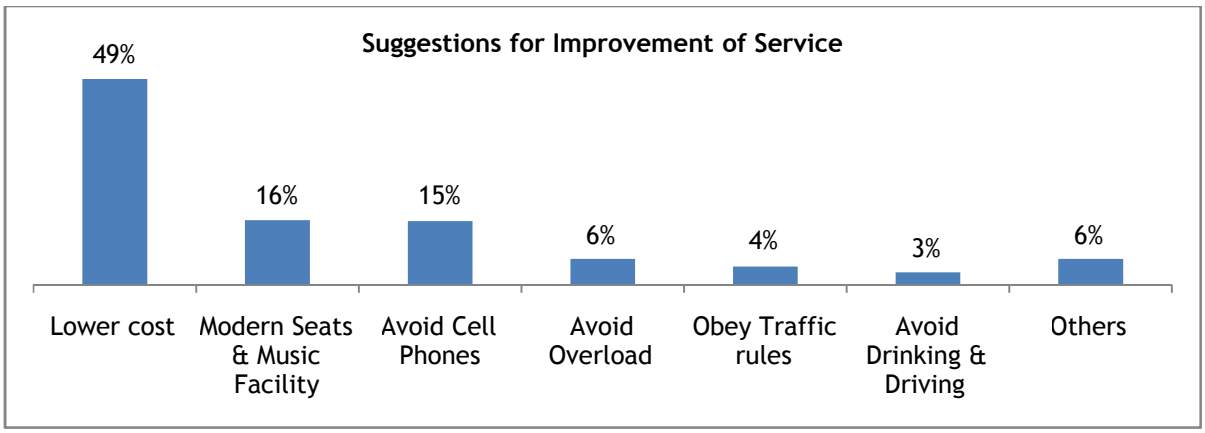
Most transit points are in high-density areas. However, it was observed that residential or commercial places in and around these points are not connected, and passengers have to walk long distances or travel by autorickshaw (which is expensive). This Study proves that Share Autos offer outstanding service by shuttling commuters long narrow alley areas off the main streets, especially from their residents to public transits, thus reflecting its capability to function as a feeder system.

Picture 12: Passengers getting down at Moolakadai

In Ahmedabad, after the introduction of BRTS Janmarg, CNG autorickshaws began functioning as the paratransit feeder system. A few months into the project, autos became the informal feeder service. These automobiles are typically used by commuters for short trips (3-4 km each) to and from Janmarg bus stops. Janmarg is now planning to integrate these auto services into the system by providing dedicated parking near bus stops and fare integration through smart cards.[42]

6.10. Suggestions for Improvement of Service

Graph 31

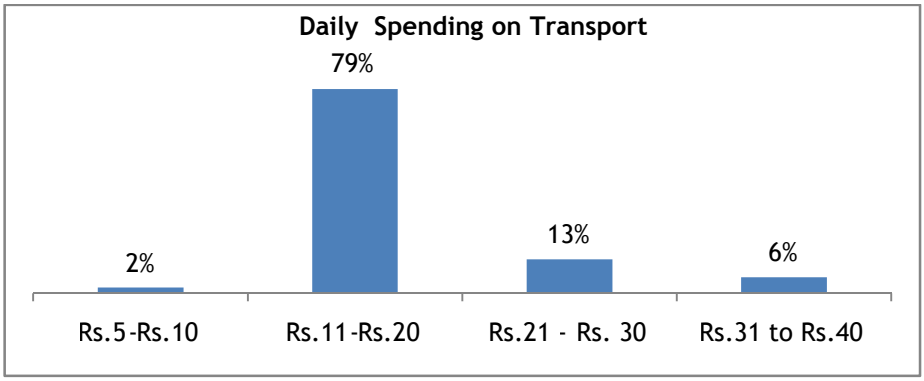


Forty nine per cent of the passengers feel that the fare should be lowered. Sixteen per cent of the passenger demanded modern seats and good music while travelling. Fifteen per cent observed that drivers spoke on their mobile phones while driving, jeopardising the lives of the passengers. Three per cent of the passengers feel that drivers should avoid driving under the influence of alcohol. This Study revealed that only six per cent of the passengers felt that drivers should stop overloading their vehicles. At the same time, from the various interactions with passengers it was found that he share auto drivers made sure that the ladies are seated comfortably and are given preference over men. This largely supports the Share Autos asa 'gender friendly' transportation mode.

[42] http://www.iutindia.org/tools/umi2010/Day2/IP%20Gautam%20-%20Organizing%20Existing%20Para%20Transit%20to%20Work%20as%20Feeder%20to%20MRTS%20(Janmarg).pdf

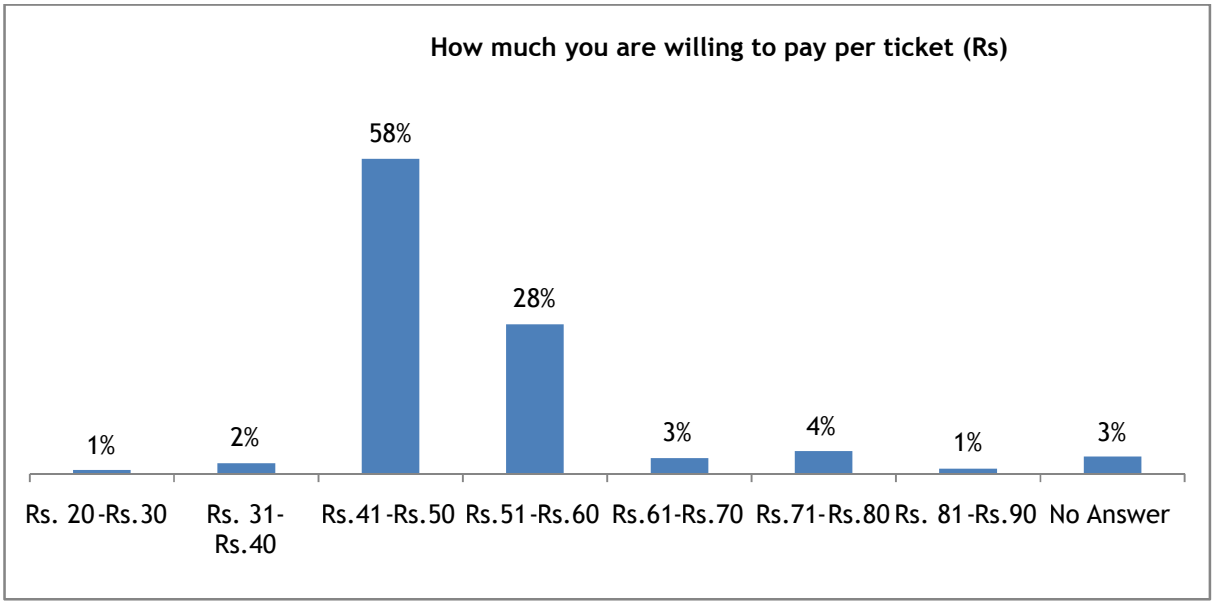
6.11. Comparison of the Perception on Common Ticketing: Passengers and Drivers

Graph 32



Seventy nine per cent of the passengers spend Rs11to ₹ 20 on daily transportation. When asked their opinion on the concept of common ticketing, 100 per cent of the passengers agreed to an integrated ticketing system for all modes of transportation.

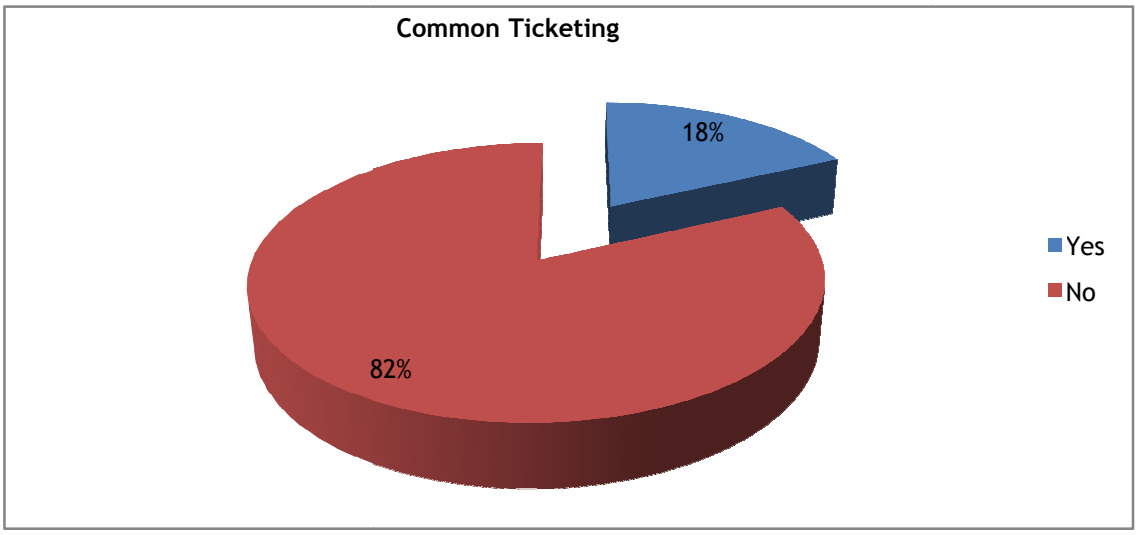
Graph 33



Fifty eight per cent of the passengers said they were willing to pay ₹ 41 toRs50 if an integrated ticketing system was introduced for all modes of public transportation, including Share Autos. Another 28 per cent said that they could pay between ₹ 51 to ₹ 60. This reveals that passengers are willing to pay more for efficient and reliable forms of transportation. Effortless mobility is the hallmark of urban transportation, and commuters seek a hassle-free exchange between transportation modes.

However, most drivers were sceptical about the integrated ticketing system. Only 18 per cent of them said they were open to the introduction of such a system.

Graph 34



The drivers expressed concern regarding the authority that would manage the system. It was observed that they preferred the Share Auto sector to be a private enterprise , rather than involving government authorities in the same.

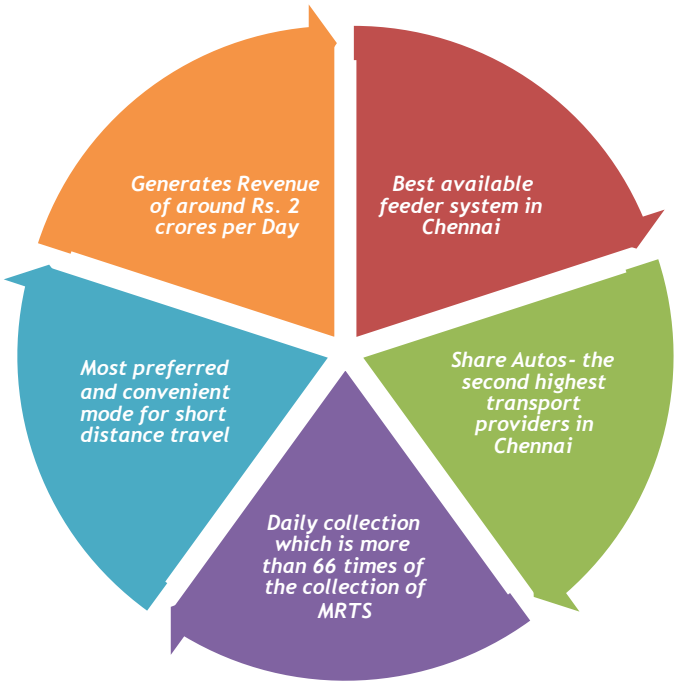
Currently drivers earn their income on a daily basis. They worry that they will be paid on a monthly basis if the money goes to the government .

Currently these drivers have the freedom to drive their vehicles according to their convenience. They do not follow set timetables, are not regulated, and decide on the routes themselves. At

the same time, the drivers are sceptical of government intervening in their functioning for the fear that it will kill their freedom.

Eighty eight per cent of the drivers said they expected an increase in faresthan what they get presently if the integrated ticketing system was introduced. The drivers required payments to be done in a moer transparent manner The analysis shows that passengers hope for a better transportation system in which Share Autos will play an important role.

Major Findings



7. Major Findings

Share Autos have become an unavoidable part of transportation in Chennai. They carry 1.8 million passengers everyday and are considered the most desirable transportation for short-distance travel. They provide first-mile-last mile connectivity at affordable fares for all sections of the population. However, the sector is plagued by several problems, mainly because they are ignored by the government. As discussed earlier, the issuing of Share Autos permits has not been revised since 2001. This has led to informal players coming into the picture and authorities failing to enforce quality assurance measures. Fares are also not uniformly structured, leaving passengers in a limbo. Drivers also lack security and are always under threat of getting fined or having to bribes to the police. Thus, the integration of Share Autos into the formal transportation system will definitely act as a boon for all the stakeholders in the sector.

These are the major findings of the Study:

7.1. Share Autos - The Second Highest Public Transportation Provider in Chennai

The Study revealed that Share Autos were the second largest providers of transportation in Chennai. The table given below shows the number of passengers catered to by different transportation modes in the city.

Table 16: Number of Passengers Served by Various Types of Transportation Modes

Category	Number of Passengers Served (Daily)
MTC	5.8 Million
Share Autos	1.8 Million
Autos	1.5 Million
Suburban Trains	0.9 Million
MRTS	70,000

This data is testimony to the importance of Share Autos in Chennai's transportation system, as they make commute more comfortable and easier. While they are often considered a menace to traffic and transportation, commuters who cannot afford private vehicles or do not use the same consider this mode as a boon. They are also faster and more reliable than MTC buses.

7.2. Comparison between Share Autos and MTC

Table 17: Comparison between MTC and Share Autos

CATEGORY	MTC	SHARE AUTO
Fleet	3457	12,000
Number of Kilometres Run per Day	10,81,036	16,20,000
Average Cost of the Total Fleet	40 lakh* 3457= ₹ 1382.8 crore	3 lakh*12,000= ₹ 360 crore
Average Fuel Efficiency	4.39 kmpl / 73 Passengers	23 kmpl/ 7 Passengers
Number of Trips Made per Day	Around 42,354	Around 2,64,000
Average Number of Passengers per Day	5.85 million	1.84 million
Average Collection per Day	₹ 2.23 crore	₹ 1.38 to ₹ 2.31 crore

According to the table above, Share Autos cater to 1/3rd of MTC buses' target passenger count. Yet, the average revenue collected by both is more or less the same. A comparison of the fleet size shows that the fleet of the paratransit system is 3.5 times more than of the MTC buses, an obvious reason why commuters prefer the former.

The average cost of the total fleet of MTC is around Rs1,383 crore, while Share Autos cost Rs360 crore. The latter sector is not subsidized by the government and is purely a private enterprise. The Share Auto sector creates plenty of employment opportunities as well.

The number of trips undertaken by Share Autos per day is five times that of the MTC buses. It is to be noted that Share Autos do not ply in all the areas in the city, due to various factors, such as demand from passengers, threat of penalization by the traffic police and opposition from the regular autorickshaw sector. The Study revealed that notwithstanding the limited area covered, Share Autos serve 1.8 million people covering around 1.6 million kilometres. This pushes the case for its recognition. If recognised, the paratransit sector will be reach out to a larger number of commuters on routes that are not connected by any mode of transportation, creating a revolution in the transportation sector in Chennai.

MRTS and Share Autos

The MRTS was introduced in Chennai keeping in view the increasing travel demands of the burgeoning population. Its construction cost is given below:

Phase I and Phase II of MRTS = ₹ 269+ ₹ 763.85 crore = ₹ 1,032.85 crore

While the operational expenses of the network amount to about Rs18 lakh per day, its earnings calculate to around Rs3 lakh per day. This figure sums to only around 1.5per cent of the total collection of the Share Auto sector. The loss is largely because of the lack of connectivity with other modes and the system can be improved a lot if this issue is solved.

The MRTS is proposed to be taken over by the Chennai Metro Rail Authority. It is crystal clear that unless steps are taken to improvise the system's connectivity, the multimillion-rupee Chennai Metro Rail project will also end in failure. This is where the role of Share Autos gains prominence. With their flexibility and frequency, Share Autos can bridge the gap between the MTC, suburban trains, MRTS and the metro system by acting as feeder system.

7.3. Issues with the Institutional Arrangement

Traffic and transportation schemes in Chennai are presently implemented by different departments and agencies. While long-term planning and coordination is carried out by the CMDA, individual schemes are executed by the Railways, DHRW, CC and MTC; traffic enforcement is carried out by the Traffic Police. There also exist several committees that coordinate the implementation of transport schemes in the CMA, such as:

i) High-Level Coordination Committee for MRTS (chaired by the Vice Chairman, CMDA), to coordinate implementation of MRTS Phase-I&II

ii) Chennai Road Safety Council (chaired by the Commissioner of Police) for traffic enforcement

iii) Coordination Committee (chaired by the Superintending Engineer, Chennai Corporation)

iv) Indian Transport Road Development Association

v) There also are agencies that deal with licensing of vehicles and policy making, such as the Regional Transport Office.[43]

However, in the absence of financial and administrative powers, these committees lack coordination. The traffic and transportation systems comprise of separate and well-defined segments, such as, roads, railways, road transport, and traffic management. These facilities, built on a piece-meal basis over a period of time, have been largely constructed to cater to only a part of the total transportation needs, and have hardly any relationship to the functioning of other components. They also lack co-ordination.

7.4. Neglected Sector in Government Policies

Although the paratransit sector plays a very important role in providing transportation to a huge section of people, it is not recognized by the government. In fact, Government policies aim at controlling or limiting its scope. The National Urban Transport Policy [44]states:

> "Para transit is normally expected to fulfill a need that neither public transport nor personal vehicles are able to fulfill. They normally cater to a category of occasional trips such as trips to airports or rail stations with excessive baggage, or emergency trips that have to be undertaken immediately and it is not possible to wait for public transport. Paratransit would not normally be used for regular commute trips to work or school. However, when the quality of public transport deteriorates, paratransit tends to substitute for public transport. Unfortunately, this has started happening in many Indian cities. As such, this policy would seek to restore paratransit to its normal role by persuading the improvement of public transport."

[43]Chennai Metropolitan Development Authority, Government of Tamil Nadu. September 2008. Second Master Plan for Chennai Metropolitan Area,2026, Volume III, Chapter V, Traffic and Transportation (Online), Tamil Nadu: Available at http://www.cmdachennai.gov.in/Volume3_English_PDF/Vol3_Chapter05_Traffic%20and%20Transportation.pdf, Accessed on 20 August 2011

[44] http://www.urbanindia.nic.in/policies/TransportPolicy.pdf

The policy considers it 'unfortunate' that the paratransit has started substituting public transportation, while failing to recognize the role it plays in providing better transportation to commuters. The definition of paratransit in itself is faulty, as the policy considers it as catering to occasional trips to airports or railways stations.

This Study, however, reveals that Share Autos are used for daily trips rather than just occasional journeys. Moreover, as stated earlier, the introduction of multimillion-rupee transportation projects without proper connectivity will lead to huge losses to the exchequer.

7.5. Government's Efforts to Control the Paratransit Vehicle Population Led to Informal Growth of the Sector

Since 2001, the government has stopped issuing permits for additional Share Autos. However, the demand for this mode of transportation has increased, leading to the informal entry of new players in the market. This has made it difficult for the government to estimate passenger patronage for the paratransit sector. Share Autos do not find mention in any government documents; they are either categorised as maxi cabs or autos, an incorrect portrayal of the sector. There, however, exists a few Tata Magics and Mahindra Maxximos that ply as tourist maxi cabs. The authorities, again, have no documents supporting the same.

7.6. Biased Taxation Regime

The taxation regime of the government is biased towards private vehicles. The annual tax for motor cars and jeeps ranges between ₹ 600- ₹ 2,500, based on the weight of the vehicle. Stage carriages plying exclusively in the CMA are charged a meagre ₹ 80 plus ₹ 25 surcharge, quarterly. The table below displays taxation details for different categories of Share Autos:

Table 18: Tax Paid by Different Categories of Vehicles (in Rupees)

Category	Tax
Vikram Auto (Share Auto)	1,925 (quarterly)
Ape Diesel (Autorickshaw)	1,400 (for 5 years)
Tata Ace Magic (Maxi Cab)	4,000 (for 5 years)

The Study reveals that although these vehicles are issued 'contract carriage permits', they actually serving as stage carriages, and the tax they pay by much more than regular stage carriage vehicles. The average occupancy of a car is 1.6 per vehicle whereas the study shows that the average occupancy per Share Auto is 7 per vehicle, four times more. However, this private vehicle, which weighs less than 700 kg, pay only Rs600 annually, while the Tata Ace Magic Vehicle shells out Rs7,700 and the Ape PiaggioRs800 (Annexure 2, 3 and 4). Taxation puts a burden on the Share Autos and discriminates against them. Their role as public transportation providers is not recognised by the government and this irrational taxation regime eats into the revenue they are bound to generate.

7.7. Absence of Rules and Regulations

The paratransit sector is not recognized by the government, and hence considered a part of the informal sector. Due to the absence of prescribed rules and standards, it has been noted that most Share Autos are overloaded, leading to occasional accidents. While a few have also been observed to ply without doors, others have been noted carrying passengers in the boot. Very few Share Autos clearly display the routes they ply on and the corresponding fares. In addition, it was observed that the fares vary according to traffic conditions and time of day, thus causing confusion to the passengers.

7.8. Socio-Economic Factors that Affect Drivers

This Study revealed that most Share Auto drivers were in the age group of 20 to 40; they spent about 10-11 hours a day on the road. With their prime years spent working for this sector, they are mostly unskilled to take up other occupations. The Study also revealed that only 4 per cent of the drivers were in the age group of 40- 50 years. A driver's income ranges from ₹ 16,000 to ₹ 20,000 per month. Seventy four per cent of the drivers have more than four family members. ₹ 20,000 per family is too less to sustain in a metropolis like Chennai especially when the inflation rates are too high.

The above mentioned factors necessitate social security for Share Auto drivers. While government provides social security schemes, such as pension, to public transport corporation employees, Share Auto drivers, who contribute tremendously towards mobility of the Chennai metropolis lack any form of security and safety.

7.10. Lack of Parking, Stands and Related Amenities

Share Autos are assigned stands in each area by the unions. Only a union member can park his vehicle at the prescribed stand. Those drivers that have no place to park at the stands park haphazardly on the sides of public roads in wait of passengers. In addition, most drivers have no access to basic amenities such as waiting sheds or resting rooms. In the absence of pick up and drop points near bus stops or on a busy road, passengers also find it difficult to flag down a Share Auto. Moreover, share autos are not provided parking spaces at the various parking lots, in spite of the fact that they cater to a large section of the people.

Picture 13: A Union Stand in North Chennai

Picture 14: Maxi CabShare Auto Stand at Guindy

7.11. Problems between Unions and Players

Share Auto drivers are organized through unions. However, the Study revealed that these unions do not have a well-defined approach towards this transit system. Some unions withhold membership to Tata Ace Magic vehicles, with support to only Vikram and Ape Piaggio autos. There also is a constant struggle between the new players (Tata Ace Magic and Mahindra

Maxximo) and the old ones (Vikram and Ape Piaggio), as the latter is losing business to these new vehicles.

On June 24, 2011, the trade unions and associations representing the Share Autos and minivans had agreed to operate these contract carriage vehicles as 'point-to-point' public carriers only. However, this was not realised as the drivers found a good enterprise in Share Auto sector and passengers demand the comfort of Share Autos

7.12. Factors Affecting Drivers' Satisfaction

This Study assessed the most important factors affecting drivers' satisfaction (that is driver's views on why passengers are satisfied with their service. The regression analysis conducted as a part of the Study identifies these three top factors that comprise drivers' satisfaction: Easy accessibility, driver's friendly and helpful personality, and prompt service. Cost and passenger security have negative impact on overall satisfaction. This analysis also provides information to public transport operators and other stakeholders about the key priorities for improvements which have the greatest effect on the passenger experience.

7.13. Share Autos as Feeder System

The passenger survey conducted for this Study revealed that trains and buses ranked low in accessibility. Only 26 per cent of the passengers surveyed felt that buses were accessible, with 15per cent voted for trains. In comparison, 65per cent of the commuters surveyed felt that Share Autos were easily accessible. However, the Study revealed that it was difficult for the Share Auto sector to sustain on its own as a mass transportation system, because a majority of their trips were for short distances. This lack of ridership can be solved by its integration with mass transit systems. The case for a feeder system gains strength here, as this paratransit system can be used to feed passengers to upcoming rapid transportation projects, such as the Metro and BRTS. Improving short-distance mobility between commuters' residences and mass transit stations will significantly reduce the total travel time, hence providing better customer satisfaction. A well-integrated formal system can actually bring manifold increase in the patronage of mass transportation.

Key Suggestions

8. Key Suggestions

This Study reveals that although Share Autos play a vital role in Chennai's transportation system, they are not recognized by the government and often considered a nuisance and a reason for traffic congestion in the city. These are the recommendations to improve functioning of the Share Auto sector, which would in turn have a larger effect on public transportation:

8.1. Formulation of a Coordinating Agency for Transportation

In India, all the layers of the government are involved in the planning, regulating, licensing and monitoring of urban transportation. The net effect is widespread confusion and lack of accountability at the government level, which can be inferred as one of the major cause for lack of integrated planning in Chennai.

Connectivity and integration are the hallmarks of a well-developed and efficient mass transportation system. However, because multiple authorities are in charge of transportation in the city, the arrangement is faulty and lacks coordination.

These problems could be tackled only if there is one coordinating agency or a single transportation authority, capable of planning, implementing and administering an efficient transport system. The primary important function of such an authority is a comprehensive appraisal of the existing travel facilities and identification of shortcomings.

It would be necessary to develop a holistic approach to urban transportation problems, to ensure that the final plan and overall system it provides makes the network much more productive than the sum of its separate operations.

To monitor all aspects of transportation in Chennai, in line with the National Urban Transport Policy, the government has constituted the Chennai Unified Metropolitan Transport Authority (CUMTA). The Chennai Unified Metropolitan Transport Authority Bill was tabled in 2010. The basic purpose of CUMTA is to achieve integration of all modes of transport in the city and provide seamless travel facilities to passengers across the entire network. However,. The state government is yet to make notifications to bring into effect an UMTA for Chennai.

Bogota, Columbia, is testimony to how public-private partnership can work to realise a success. TransMilenio, the integrated public transit system of Bogota is a public-private venture. Design, planning, and investment in the infrastructure is carried out by public institutions, such as the Bogota Mayor's office, FONDATT (Fondo de Educación y Seguridad Vial FONDATT— The fund for

education and road safety of the Secretary of Transit and Transportation), IDU (Instituto de Desarrollo Urbano—Institute of Urban Development), IDCT (Instituto Distrital de Cultura y Turismo—the District Institute of Culture and Tourism) and Metrovivienda. However, its operations are overseen by private entities, including trunk line operators, feeder bus operators, fare collection concessionary, and control center providers.[45] TransMilenio operators are consortia of traditional local transport companies, who work with international investors that own the buses and employ maintenance personnel. This institutional arrangement between public and private stakeholders has made Bogota's transportation system world class.

Another example is the urban transport network in Singapore. The city has a single ruling party that supports the private sector in its endeavours, especially transportation. This has relatively paved the way to understand and determine what is best for the system, minimizing conflict of interests.

8.2. Changes in Policy Approach

There should be a policy change with regard to the way the state looks at the paratransit sector. It has been explained how policies, including NUTP, do not consider and recognize the role played by the paratransit mode of transportation. The government should take all necessary steps to bring the sector under the purview of the transportation policy and recognize and appreciate its role in providing transportation to millions of people in India. This includes redefining the paratransit system as a transit system utilized for commuting people for short distance. All vehicles that come under the scope of definition of paratransit should be legally recognized with certain formal restrictions, which should be revised periodically. Further, the scope of public transportation should be modified to include paratransit modes; this will go a long way in enabling integration and supporting such services. Paratransit operators should be integrated into the formal system with institutional, operational and physical integration.

8.2.1. The Need for Integration

- Integrating the paratransit sector with other modes of transportation will attract people to Mass Rapid Transit.
- This will reduce dependence on private automobiles
- Door-to-door service will make public transportation more attractive

[45] Asia-Pacific Environmental Innovation Strategies (APEIS). Research on Innovative and Strategic Policy Options (RISPO) Good Practices Inventory (Online). Available at http://enviroscope.iges.or.jp/contents/APEIS/RISPO/inventory/.../0043.pdf. Accessed on 15 September 2011

- Integration will reduce travel time and pocket cost through a common ticketing system

8.3. Integration of Share Autos with Public Transportation Modes

In the current scenario, integrating all modes of transportation at once is not possible as there are several preliminary things to be done before that. Integration can be implemented in three stages:

8.3.1. First Stage

8.3.1.1.Official Recognition

Share Autos should be officially recognized and incorporated in the transportation infrastructure of Chennai. This will keep the drivers and the other stakeholders in confidence. In other states, for e.g. in Orissa and West Bengal, even Tata Magic Vehicles are given Share Auto permits. Likewise, models like Tata Magic, Mahindra Maxximo should be given the status of 'Share Autos' as per the Tamil Nadu Motor Vehicles Rules. This will attract people to join the sector and earn a livelihood. The tax structure would therefore be rationalized. Once they are recognized as formal mass transportation providers, the government can implement social security schemes like insurance, allowances and pension for the drivers.

The Study reveals that 96per cent of the Share Autos are rented and a huge share of the revenue is spent by drivers vehicle rent. The drivers rent Share Autos because of lack of formal credit facilities. If the government gives official recognition to these autos, drivers who seek to join this business can easily get credit and own their own vehicles. This will help them upgrade their economic status.

Recognizing the need to provide public transport facilities to the people of unserved or inadequately served, semi-urban and rural areas, the Government introduced in 1997the 'Mini-bus Services Scheme' to be operated by private sector. Presently there are 3959 mini buses plying in Tamil Nadu. The Government is also exploring the possibility of bringing out a 'New Mini Bus Policy' by formulating a State-wide Comprehensive Area Scheme. Likewise, the government should introduce a 'Share Auto' scheme for the comfort and convenience of the passengers.

8.3.1.2. Rules and Regulations

Instead of standardizing pollution norms and making the periodical up gradation of vehicle condition mandatory, the government has taken drastic steps such as scrapping of diesel autorickshaws and non-issuance of permits to Vikram autos.

The Government should let market forces regulate the supply of transportation. This will provide entrepreneurial freedom to the drivers. With multiple players in the field, market competition will lead to the existence of class transportation providers.

The Government should concentrate on operational regulations:

- Government should make mandatory rules to avoid overcrowding, depending on the carrying capacity of vehicles.
- Doors should be made mandatory.
- All Share Autos should have first aid boxes.
- Route and fare information should be displayed in Share Autos.
- Mobile phone usage while driving and driving under the influence of alcohol should be strictly monitored.
- Instead of randomly stopping the issuance of permits, the government should make the pollution norms more stringent and give permits to those vehicles that adhere to it. The norms say all the three wheelers which meet BS III vehicles can ply in Chennai. These rules will also ensure the introduction of modern and environmentally more viable vehicles in the market.

8.3.1.3. Infrastructural Facilities

Physical integration of paratransit into the city's transportation infrastructure is very important. The Study revealed that Share Autos throughout the city had start and terminating points. They ply on fixed routes and hence require parking facilities at these transit points. Parking facilities near Metro or Suburban Rail Stations will make transferring of passengers between these modes easier and simpler. Basic amenities such as sheds, street furniture should be provided near the stands for both passengers and drivers. Private companies can build and maintain auto stands on a bidding process.

Picture 15: Janmarg Paratransit (Gujarat)

Source: Organising Existing Para Transit to Work as Feeder for Janmarg - BRTS Ahmedabad[46]

The picture above shows the parking facility provided to autorickshaws near BRT station in Ahmedabad. Such organized parking is mutually beneficial for both the passengers and drivers.

8.3.2.Second Stage

8.3.2.1.Zone Wise Allocation of Paratransit Operations to Companies

One of the major factors for the success of paratransit operations in Chennai is that they are run by private entrepreneurs and the government need not subsidize their operations. In cities like Bogota, the public transportation system is operated by private companies; where as the public company only has the responsibility of design, management and control. Private companies

[46] http://www.iutindia.org/tools/umi2010/Day2/IP%20Gautam%20-%20Organizing%20Existing%20Para%20Transit%20to%20Work%20as%20Feeder%20to%20MRTS%20(Janmarg).pdf

operating under agreements are responsible for system operation, bus procurement, employee management, maintenance; fare collection by private sector using smart cards is under concession and financial management and disbursements.

An extensive study on the city's zones is required, so as to predict the travel demands per route at different points. Share Autos have to be allocated on busy routes based on this report. These studies should be undertaken by a transport authority similar to the CUMTA established for Chennai city.

Zonal-wise allocation of paratransit operations to collectives (who will act as operators) will bring about a tremendous institutional change in the whole sector. A proactive policy will encourage the formation of collectives, cooperatives or private companies to operate in the select zones. The existing drivers and operators can form collectives or register themselves as companies to formalize the sector. Operators can be chosen through a bidding process and can be allocated zones. Contracts can be awarded through the competitive bidding in a transparent manner. These companies will be responsible for the operations of paratransit operation in their respective zones. Operators and drivers would have to register themselves with these companies, which will have to ensure that they follow the rules set by the government. They will also be responsible for assuring quality and promptness of service.

The Share Autos shall be given an assurance about the kilometre-based payment structure. This will improve the quality of transportation system, as they will cover more area and will be willing to ply in less populated and poorly connected areas in the city. Through a proper bidding system, competition within the market is eliminated and competition for the market is established.

Regular autos should also be allowed to be registered with the specified company, giving drivers the option to ply as Share Auto as well. When the demand for metered journeys is less, the driver can choose to ply as a Share Auto service, thus optimizing the use of autos and utilizing time, which would have been lost waiting for passengers. In addition, vehicles should be equipped with the latest GPS system to provide better quality service to commuters.

The following types of paratransit operations should be implemented:

• **Public demand-response feeder service** – A general public demand-response service that feeds into fixed route services at bus stops, park-and-rides, and light rail stations.

• **Route deviation feeder service** – A fixed-route service that deviates for people who call and book the service, connecting to the mainline fixed-route service. For Eg: the share autos in Delhi are allowed to deviate from the fixed route for a distance not more than 5 kms depending on the requirements of the passengers.

• **Community feeder** - Community feeder system in suburban and rural areas that connect with fixed-route service and other community bus stops.

• **Route or point deviations service** - Fixed-route Share Autos that deviate within specified corridors and at specified times of the day, e.g. near public and private offices, during in and out timings.

This model can be managed efficiently with the assistance of a call centre system. A centralized managing system in a prerequisite for these kinds of complex operations and will make the integration easier.

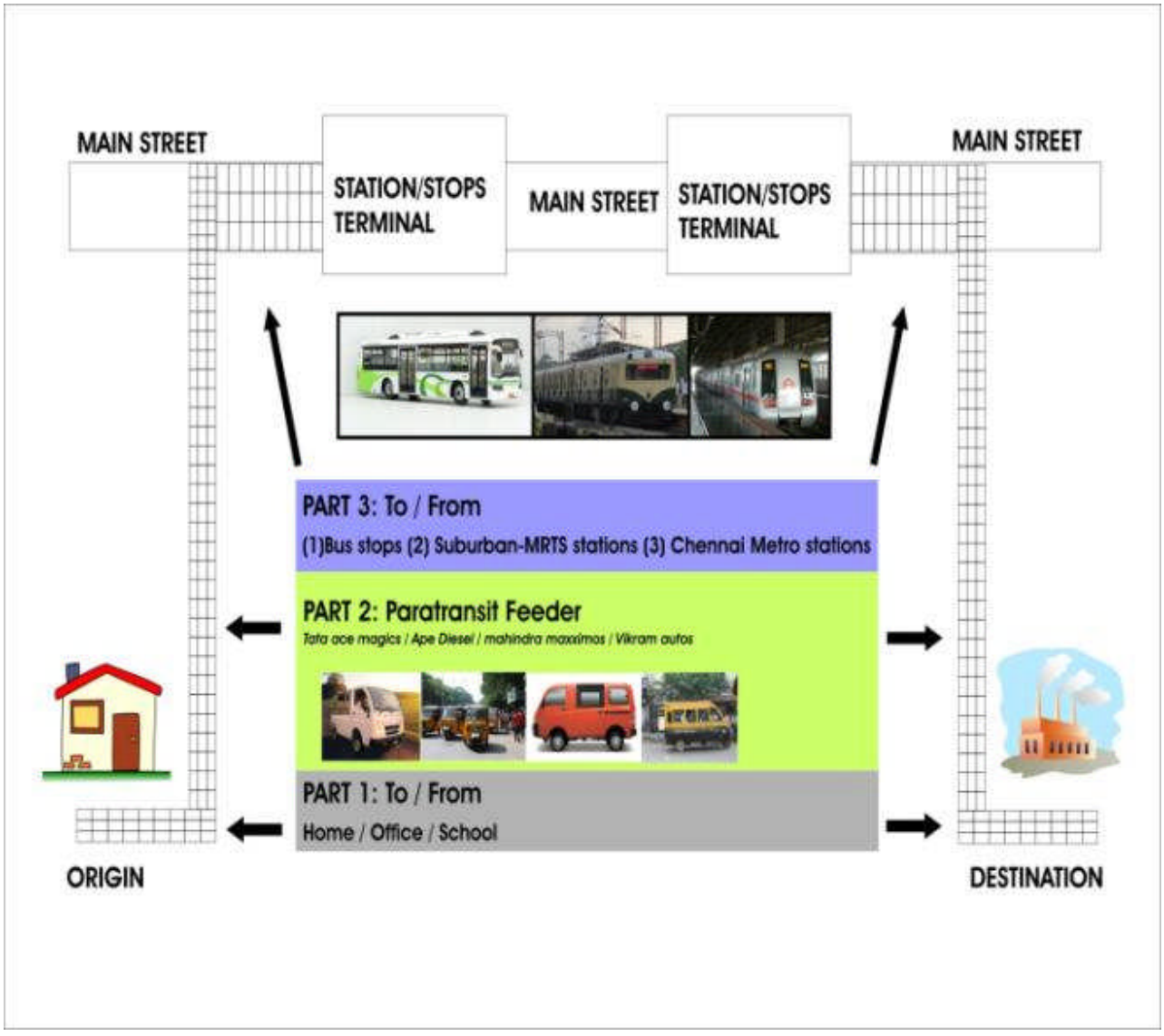
This kind of management system will provide:

- High technical capability in the regulatory agency
- Long-term policy commitment with professional staff devoted to planning and monitoring
- Willingness by the operators to adjust routes that are proved to be unviable routes.
- Regular fare increases in line with escalation costs, with flexible options for fare increases according to route characteristics
- A bidding mechanism for routes that are perceived to be fair and transparent. The Bids shall be priority announced publicly with interested applications screened by displaying the bid process in the public. The awardees list shall be displayed with their credentials.

8.3.3.Third Stage

8.3.3.1.Integration with Mass Rapid Transits and Revenue Sharing

Picture 16: Integration of Share Autos as Feeder to MRTs



The pictorial representation above details how physical integration of paratransit vehicles and MRTs can be achieved. The design and amenities of existing models, however, should be improved, keeping in view the changing demands of the passengers.

Revenue-sharing models for Share Autos and paratransit vehicles are of significant policy interventions to be addressed with the introduction of various public transport modes like Metro rails and BRTs in Chennai. As this Study has earlier concluded, the paratransit modes are support agents for the larger network of the public transport system in Chennai. They are not to compete with the larger players, but to complement and facilitate each other.

The authorities responsible for the implementation of an effective and efficient public transport system in Chennai should understand the need to recognize the importance of paratransit modes. This will help lead operators like the MTC, Railways and Metros get more commuters. Paratransit modes should be integrated with the public transport system for successful mobility. An effective and systematic revenue sharing system between and amongst all the feeder systems and lead operators should be envisioned for better transport facilities in Chennai.

A study on the BRT system in Bogota elucidates the need for a feeder system and revenue-sharing model. The successful model in Bogota warrants the following features for any revenue sharing model:

- Institutional regulatory framework that addresses public interests
- Allowing Competition for the market while limiting competition within the market
- Operator compensation based on kilometres plied, than on number of passengers
- Transparent revenue distribution

The Chennai Unified Metropolitan Transport Authority (CUMTA) should keep records of the volume and direction of the commuting public on an hourly basis for proper integration to take place. Once these figures are made available, it should be indexed with the volume of commuters at major transit points. These points should be defined as the locations where the lead operators like Metro, BRT, suburban trains including MRTS and MTCs provide services. An integrated route map should then be developed on the basis of these numbers.

The companies who has successfully bid for various routes will operate the Share Auto system by integrating with public companies. Bid conditions should ensure that a single entity can not

place a bid; cooperatives and collectives should be eligible. The bid document shall be prepared by the public authority responsible for it. Feeder companies should be accountable for procuring feeder vehicles, operating services and maintaining the fleet according to provisions agreed in the bid document. Within a given geographic area, a large Share Auto company can cater to telephone order trips or other ways of monitoring transportation demand. With more autos in operation, it is likely to have a Share Auto nearby the customer's location.

Companies should also have prompt dispatch services in areas allocated to them, from business and commercial districts to low-density residential areas. By regulating service quantity and quality, unhealthy market competition can be avoided. Companies can ensure that even low-demand areas, which would otherwise be left out, are connected. This can prevent an oversupply at Share Auto stands and provide drivers with the opportunity to supplement stand trips with dispatch orders. The company's operations can help create a level playing field among different Share Auto operators. The regulator, taking requirements into consideration, can ask Share Auto operators to change their corridors. Proper design modifications at transit stations, including railway stations and bus bays, will give better access and allow for coordination between commuters and operators.

For smooth functioning, the transport authority would be required to calculate the total kilometres that the feeder system has to ply in each corridor based on the demand calculated on an hourly basis once the commuter volume is calculated. Based on various parameters that determine the cost of operations, revenue could be shared with the feeder operators. The factors upon which such calculations are done, include:

- Lead operator cost per passenger per kilometre
- Kilometres covered by the lead operator
- Number of passengers fed into the system
- Kilometres operated by the feeder system
- Cost of the feeder per passenger per kilometre
- Maintenance and system cost for each ticket collection
- Administrative cost of the entire system

- Operating profit for the entire system
- Emergency/contingency fund
- Infrastructure cost

The ticketing system can be either privately or publically operated; it includes production and distribution of smart cards, acquisition and installation of turnstiles and validating systems, passenger information, and money handling. The ticket fare for the feeder operators could be collected in several ways: A common ticket that can be swiped while using the feeder system, a ticket vending machine at the closed or open feeder collecting point or collection by the driver This should be monitored and verified by an independent agency, which would help bridge the lack of trust this Study has mentioned earlier.

The administrative and operational structure of the system will have a profound impact on the financial management of the system.

The table below details an institutional framework that can be implemented for transport management:

Table 19: Suggested Institutional Framework for Transport Management in Chennai

Type of Institution	Description
Transport Department	Large entity with wide range of regulatory and management responsibilities, directly under the control of political authority
Transportation Authority	An autonomous body, like CUMTA, headed by board of directors with a wide oversight on all the modes of public transportation in the city; also a decision-making body.
A Public Company	A public company like TransMilenio SA, owned and managed by CUMTA, which controls and manages MRTs and private paratransit operators, and regulates quality control of private companies.
Private operators	Private operators get the contract to operate paratransit vehicles through a bidding process. They are responsible for negotiations with the public company for fixing of fares and revenue sharing.
Consultants	A group of urban consultants who are experts in the field and responsible for suggesting innovations.

Annexure

9. Annexure

Annexure 1: Details regarding Fleets plying in various locations in Chennai

S. No.	Route	Origin	Destination	Journey Time Minutes	Fleet Size	Frequency Minutes
1	1A	THIRUVOTRIYUR	THIRUVANMIYUR	100	18	12
2	1B	THIRUVOTRIYUR	TAMBARAM	100	18	12
3	1C	ENNORE (via.ASHOK LEYLAND)	THIRUVANMIYUR	100	7	31
4	1D	ENNORE(via.THAZAN KUPPAM)	THIRUVANMIYUR	100	4	55
5	1G	THIRUVOTRIYUR	VELACHERY	80	5	36
6	1GCUT	BROADWAY	MADIPAKKAM	75	2	85
7	1GEXT	THIRUVOTRIYUR	MEDAVAKKAM	90	1	200
8	A1	CENTRAL	THIRUVANMIYUR	50	8	15
9	T1	ROYAPURAM	THIRUVANMIYUR	60	4	35
10	3A	HIGHCOURT	MANDAVELI	40	1	100
11	5A	THIAGARAYA NAGAR	TAMBARAM EAST	65	28	5
12	5B	MYLAPORE	THIAGARAYA NAGAR	40	6	17
13	5C	BROADWAY	TARAMANI	70	9	18
14	5E	BESANT NAGAR	VADAPALANI B.S.	70	21	8
15	5G	THIAGARAYA NAGAR	KANNAGI NAGAR	55	2	65
16	5K	MYLAPORE	TARAMANI	30	1	80
17	5S	THIAGARAYA NAGAR	THIRUVANMIYUR	40	1	100
18	5T	VADAPALANI	TARAMANI	68	1	156
19	6A	TOLLGATE	BESANT NAGAR	75	4	43
20	6D	TOLLGATE	THIRUVANMIYUR	70	19	8

21	6DET	SATHUMA NAGAR	THIRUVANMIYUR	75	1	170
22	6E	TOLLGATE	THIRUVANMIYUR	70	1	160
23	6P	PUZHUTHIVAKKAM	THIRUVOTTIYUR	100	1	220
24	7B	BROADWAY	KORATTUR	60	13	11
25	7E	AMBATTUR ESTATE	BROADWAY	70	3	53
26	7F	BROADWAY	ANNA NAGAR WEST	45	9	12
27	7G	K.KANNADASAN NAGAR	BROADWAY	63	9	16
28	7H	MOGAPPAIR EAST	BROADWAY	48	12	10
29	7HET	AMBATTUR ESTATE	BROADWAY	70	3	53
30	7K	THIAGARAYA NAGAR	TARAMANI	30	1	80
31	7M	BROADWAY	MOGAPPAIR WEST	50	10	12
32	7S	THIRUVANMIYUR	SAIDAPET WEST	55	2	65
33	8B	THIRU.VI.KA.NAGAR	BROADWAY	45	7	16
34	10A	TOLLGATE	SAIDAPET WEST	90	1	200
35	10E	BROADWAY	EKKATTUTHANGAL	70	1	160
36	11	BROADWAY	THIAGARAYA NAGAR	45	5	22
37	11A	VALLALAR NAGAR	THIAGARAYA NAGAR	55	8	16
38	11AET	M.K.B.NAGAR EAST	THIAGARAYA NAGAR	70	2	80
39	11G	BROADWAY	KALAIGNAR NAGAR B.S.	70	13	12
40	11H	BROADWAY	IYAPPANTHANGAL	80	25	7
41	12	THIAGARAYA NAGAR	VIVEKANANDA HOUSE	40	4	25
42	12B	VADAPALANI	FORESHORE ESTATE	50	19	6
43	12BET	FORESHORE ESTATE	KOYAMBEDU MARKET (12K)	65	2	75
44	12C	SALIGRAMAM	MYLAPORE	70	5	32
45	12G	KALAIGNAR NAGAR	ANNA SQUARE	65	16	9
46	13	THIAGARAYA NAGAR	TRIPLICANE O.T.	42	8	13

47	13B	THIAGARAYA NAGAR	ANNA SQUARE	42	2	52
48	15	ANNA NAGAR	BROADWAY	38	2	48
49	15B	BROADWAY	C.M.B.T.	45	21	5
50	15BX	MADURAVOYAL	BROADWAY	50	2	60
51	15F	VADAPALANI	BROADWAY	70	8	20
52	15G	BROADWAY	M.M.D.A.COLONY	38	10	10
53	17	BROADWAY	VADAPALANI B.S.	60	4	35
54	17B	BROADWAY	MANGADU	90	3	67
55	17BCT	KOYAMBEDU MARKET	MANGADU	60	1	140
56	17C	BROADWAY	IYAPPANTHANGAL	80	1	180
57	17D	BROADWAY	KALAIGNAR NAGAR	70	28	6
58	17E	BROADWAY	SALIGRAMAM	60	11	13
59	**17G**	**BROADWAY**	**MOGALIVAKKAM**	**85**	**1**	**190**
60	17K	BROADWAY	DASARATHAPURAM	60	2	70
61	17M	BROADWAY	IYAPPANTHANGAL	75	18	9
62	17MCT	BROADWAY	VADAPALANI B.S.	50	5	24
63	17MET	BROADWAY	SALIGRAMAM	60	2	70
64	G17	BROADWAY	MOGALIVAKKAM	75	1	170
65	18	HIGHCOURT	GUINDY TVK ESTATE	45	1	110
66	18	HIGHCOURT	SAIDAPET	45	2	55
67	18A	HIGHCOURT	TAMBARAM	70	3	53
68	18B	HIGHCOURT	KOTTURPURAM	55	2	65
69	18D	HIGHCOURT	KILKATTALAI	70	3	53
70	18E	HIGHCOURT	RAMAPURAM	70	4	40
71	18H	TAMBARAM	NADUVEERAPATTU	42	2	52
72	18K	BROADWAY	SAIDAPET WEST	55	12	11

73	18L	TAMBARAM	ATHANOOR VILLAGE	45	1	110
74	18P	HIGHCOURT	VELACHERY HOSPITAL	70	2	80
75	18S	TAMBARAM	SOMANGALAM	40	1	100
76	A18	HIGHCOURT	VANDALOOR ZOO	80	5	36
77	B18	KORUKKUPET R.S.	VANDALOOR ZOO	100	12	18
78	D18	HIGHCOURT	PERUNGALATHUR	75	7	24
79	E18	HIGHCOURT	GUDUVANCHERY	85	23	8
80	G18	THIAGARAYA NAGAR	GUDUVANCHERY	70	17	9
81	K18	BROADWAY	SAIDAPET WEST	70	3	53
82	K18CT	HIGHCOURT	EKKATTUTHANGAL	60	1	140
83	L18	TAMBARAM	KOYAMBEDU MARKET	75	1	170
84	19B	SAIDAPET	KELAMBAKKAM	70	23	7
85	19D	ADAYAR B.S.	CHEMMANCHERY S.C.B.	50	2	60
86	19E	BROADWAY	KOVALAM	100	1	220
87	19G	BROADWAY	KOVALAM	95	10	21
88	19H	THIAGARAYA NAGAR	KANATHUR	70	4	40
89	19K	ADAYAR B.S.	SIRUCHERY	70	1	160
90	19P	ADAYAR B.S.	KELAMBAKKAM	80	1	180
91	19V	VELACHERY MRTS R.S.	KANATHUR	55	2	65
92	PP19	BROADWAY	INJAMBAKKAM (VGP)	65	7	21
93	PP19ET	BROADWAY	KOVALAM	80	16	11
94	20	VILLIVAKKAM	BROADWAY	45	10	11
95	S21	BROADWAY	OKK.THORAIPAKM SEC.CLNY	40	1	100
96	21	MANDAVELI	BROADWAY	40	11	9
97	21D	BROADWAY	THIRUVANMIYUR	50	5	24

98	21E	BROADWAY	NANDAMBAKKAM	60	2	70
99	21EET	BROADWAY	IYAPPANTHANGAL	72	2	82
100	21G	BROADWAY	TAMBARAM	75	36	5
101	21GCT	BROADWAY	GUINDY TVK ESTATE	60	2	70
102	21GET	BROADWAY	EKKATTUTHANGAL	70	1	160
103	21H	BROADWAY	KELAMBAKKAM	85	35	5
104	21HET	THIRUVOTRIYUR	KELAMBAKKAM	115	2	125
105	21K	HIGHCOURT	BHARATH ELECTRONICS	65	3	50
106	21L	BROADWAY	VELACHERY	50	12	10
107	21LET	HIGHCOURT	KILKATTALAI	70	2	80
108	88K	HIGHCOURT	KOVOOR (88K)	75	1	170
109	G21	BROADWAY	CHROMEPET	65	1	150
110	G21ET	HIGHCOURT	CHROMEPET LAKSHMIPURAM	70	1	160
111	H21	BROADWAY	CHEMMENCHERY S.C.BOARD	70	5	32
112	PP21	HIGHCOURT	GUDUVANCHERY	85	9	21
113	T21	BROADWAY	KANNAGI NAGAR S.C.B.	65	10	15
114	22	AYANAVARAM	ANNA SQUARE	45	5	22
115	22A	AMBATTUR ESTATE	THIRUVANMIYUR	80	2	90
116	23A	PALAVAKKAM	EGMORE	80	1	180
117	23C	AYANAVARAM	BESANT NAGAR	70	30	5
118	23CET	THIRUVANMIYUR	KORATTUR	100	1	220
119	23M	THIRUVANMIYUR	C.M.B.T.	65	3	50
120	23V	VILLIVAKKAM	VELACHERY	85	1	190
121	24A	ANNA NAGAR WEST	VIVEKANANDA HOUSE	50	7	17
122	24C	AVADI	VIVEKANANDA HOUSE	80	8	23

123	25G	POONAMALLEE	ANNA SQUARE	80	30	6
124	27B	C.M.B.T.	ANNA SQUARE	50	20	6
125	27BCT	M.M.D.A.COLONY	ANNA SQUARE	55	2	65
126	27C	THIAGARAYA NAGAR	THIRUVERKADU	75	20	9
127	27D	VILLIVAKKAM	FORESHORE ESTATE	70	22	7
128	27H	AVADI	ANNA SQUARE	95	20	11
129	27L	MOGAPPAIR WEST	EGMORE	50	8	15
130	28	THIRUVOTRIYUR	EGMORE NORTH R.S.	65	14	11
131	28A	MANALI NEW TOWN	EGMORE NORTH R.S.	90	5	40
132	28B	ENNORE	EGMORE NORTH R.S.	85	10	19
133	28C	TOLLGATE	Q.M.ARTS COLLEGE	65	1	150
134	29A	PERAMBUR	ANNA SQUARE	50	16	8
135	29B	PERAMBUR	SAIDAPET	75	6	28
136	29C	PERAMBUR	BESANT NAGAR	70	42	4
137	29CET	MATHUR M.M.D.A.	THIRUVANMIYUR	70	4	40
138	29CET	PERAMBUR	THIRUVANMIYUR	70	1	160
139	29DET	MATHUR M.M.D.A.	VIVEKANANDA HOUSE	85	3	63
140	29E	PERAMBUR	THIRUVERKADU	65	8	19
141	29G	KODUNGAIYUR PARVATHINAGAR	THIRUVANMIYUR	105	1	230
142	29K	MANDAVELI	C.M.B.T.	50	2	60
143	29L	PERIYAR NAGAR	THIRUVANMIYUR	100	4	55
144	29N	PERAMBUR	VELACHERY	75	2	85
145	29NEXT	VELACHERY	PERAVALLUR KUMARAN NAGAR	95	1	210
146	B29N	VELACHERY	PERIYAR NAGAR	95	1	210
147	32	VALLALAR NAGAR	VIVEKANANDA HOUSE	40	7	14

148	32A	TOLLGATE	FORESHORE ESTATE	70	14	11
149	32B	KORUKKUPET R.S.	VIVEKANANDA HOUSE	50	11	11
150	32ET	M.K.B.NAGAR EAST	VIVEKANANDA HOUSE	50	3	40
151	33	BROADWAY	M.K.B.NAGAR	38	7	14
152	33A	M.K.B.NAGAR	EGMORE NORTH RS	45	1	110
153	34	AMBATTUR ESTATE	THIRUVOTRIYUR	75	8	21
154	35	AYANAVARAM	BROADWAY	45	1	110
155	37C	VILLIVAKKAM	VADAPALANI B.S.	65	1	150
156	37CT	DASARATHAPURAM	VALLALAR NAGAR	65	1	150
157	37D	KALAIGNAR NAGAR	VALLALAR NAGAR	75	13	13
158	37E	K.KANNADASAN NAGAR	IYAPPANTHANGAL	105	1	230
159	37G	VALLALAR NAGAR	IYAPPANTHANGAL	85	26	7
160	40A	AVADI	ANNA SQUARE	80	11	16
161	40AET	EGMORE	VEPPAMPATTU E.WARAN NAGAR	95	1	210
162	41D	MANDAVELI	AVADI	100	9	24
163	41DET	MANDAVELI	SENTHIL NAGAR	100	2	110
164	41G	THIRUVANMIYUR	ORAGADAM	100	1	220
165	D41	AMBATTUR O.T.	THIRUVANMIYUR	100	1	220
166	42	PERIYAR NAGAR	BROADWAY	50	10	12
167	42A	G.K.M.COLONY	BROADWAY	60	1	140
168	44	MANALI	BROADWAY	65	4	38
169	44A	I.O.C.	BROADWAY	40	3	33
170	44B	BROADWAY	MANALI NEW TOWN	60	4	35
171	44C	I.O.C.	BROADWAY	45	10	11
172	44L	KODUNGAIYUR-PARVATHYNAGAR	BROADWAY	55	1	130

173	45B	ANNA SQUARE	GUINDY TVK ESTATE	50	6	20
174	A45B	ANNA SQUARE	NANDAMBAKKAM	55	3	43
175	46	THIRU.VI.KA.NAGAR	C.M.B.T.	65	14	11
176	46G	M.K.B.NAGAR EAST	C.M.B.T.	65	12	13
177	47	ADAYAR B.S.	VILLIVAKKAM	67	13	12
178	47A	I.C.F.	BESANT NAGAR	75	21	8
179	47D	AVADI	THIRUVANMIYUR	100	16	14
180	A47	AVADI	THIRUVANMIYUR	100	4	55
181	48	VILLIVAKKAM	VALLALAR NAGAR	39	8	12
182	48B	ENNORE	THIRU.VI.KA.NAGAR	80	1	180
183	48C	VALLALAR NAGAR	C.M.B.T.	55	10	13
184	49A	POONAMALLEE	THIAGARAYA NAGAR	65	15	10
185	49ET	THIRUVANMIYUR	THIRUVERKADU	80	2	90
186	49R	THIAGARAYA NAGAR	THIRUVERKADU	80	2	90
187	PP49	C.M.B.T.	KOVALAM	100	2	110
188	50	BROADWAY	THIRUVERKADU	65	3	50
189	51A	TAMBARAM EAST	AGARAMTHEN	40	4	25
190	51B	SAIDAPET	KARANAI	65	4	38
191	51D	HIGHCOURT	TAMBARAM EAST	105	1	230
192	51E	THIAGARAYA NAGAR	MADIPAKKAM	40	1	100
193	51H	SAIDAPET	TAMBARAM EAST	70	1	160
194	51K	TAMBARAM	NAVALOOR	65	2	75
195	51L	C.M.B.T.	TAMBARAM EAST	80	2	90
196	51LCT	C.M.B.T.	CHITHALAPAKKAM	80	1	180
197	51M	THIAGARAYA NAGAR	MADIPAKKAM B.S.	50	1	120
198	51N	THIAGARAYA NAGAR	MOOVARASAMPET	50	1	120

199	51S	TAMBARAM EAST	SAIDAPET	70	2	80
200	51T	TAMBARAM EAST	PONMAR	52	1	124
201	51TCT	TAMBARAM EAST	MADURAPAKKAM	50	1	120
202	A51	HIGHCOURT	TAMBARAM EAST	85	12	16
203	B51	THIAGARAYA NAGAR	TAMBARAM EAST	70	11	15
204	C51	ADAYAR B.S.	TAMBARAM EAST	80	17	11
205	D51	HIGHCOURT	MEDAVAKKAM	70	3	53
206	E51	HIGHCOURT	OTTIAMBAKKAM	85	1	190
207	H51ET	HIGHCOURT	CHITLAPAKKAM INDRA NAGAR	105	1	230
208	PP51	HIGHCOURT	TAMBARAM EAST	85	3	63
209	T51	TAMBARAM EAST	THIRUVANMIYUR	65	35	4
210	V51	TAMBARAM EAST	THIAGARAYA NAGAR	65	12	13
211	52	HIGHCOURT	POZHICHALUR	70	2	80
212	52B	BROADWAY	HASTHINAPURAM	75	6	28
213	52C	HASTHINAPURAM	THIAGARAYA NAGAR	50	1	120
214	52H	POZHICHALUR	MANIMANGALAM	60	1	140
215	52K	HIGHCOURT	KILKATTALAI	80	4	45
216	52L	HIGHCOURT	NANGANALLUR	70	3	53
217	52P	HIGHCOURT	MOOVARASAMPET	75	2	85
218	53	POONAMALLEE	BROADWAY	70	5	32
219	53E	MANGADU	BROADWAY	60	5	28
220	53G	POONAMALLEE	PADURMEDU	30	2	40
221	53K	MEPPUR	C.M.B.T.	50	2	60
222	53P	BROADWAY	PATTUR	70	2	80
223	54	HIGHCOURT	POONAMALLEE	75	16	11
224	54B	SAIDAPET	PORUR	55	3	43

225	54C	POONAMALLEE	PATTABIRAM B.S.	50	2	60
226	54CT	MOGALIVAKKAM AGS COLONY	HIGHCOURT	75	1	170
227	54E	MEPPUR	THIAGARAYA NAGAR	65	2	75
228	54F	MANDAVELI	POONAMALLEE	70	5	32
229	54FET	MANDAVELI	AGARAM MEL	75	1	170
230	54G	HIGHCOURT	KUTHAMBAKKAM	110	1	240
231	54K	NEMAM	HIGHCOURT	110	2	120
232	54L	HIGHCOURT	VELLAVEDU	90	5	40
233	54LCT	VELLAVEDU	VELACHERY	80	1	180
234	54M	HIGHCOURT	MANGADU	90	2	100
235	54P	THIAGARAYA NAGAR	POONAMALLEE	75	1	170
236	54T	HIGHCOURT	CHEMBARAMBAKKAM	90	1	200
237	54TCT	CHEMBARAMBAKKAM	THIAGARAYA NAGAR	65	1	150
238	54V	POONAMALLEE	VEPPAMPATTU	50	2	60
239	G54	VELLAVEDU	THIAGARAYA NAGAR	75	1	170
240	55A	PALLAVARAM	PAZHANTHANDALAM	40	4	25
241	55B	GUDUVANCHERY	PAZHANTHANDALAM	70	1	160
242	55C	TAMBARAM	VENKATAMANGALAM	60	2	70
243	55D	TAMBARAM	KEERAPAKKAM	50	2	60
244	55G	TAMBARAM	VENKAMPAKKAM VILLAGE	42	1	104
245	55K	TAMBARAM	KUNDRATHUR B.S.	50	1	120
246	56A	VALLALAR NAGAR	ENNORE (56A)	70	12	13
247	56C	THIRUVOTRIYUR	BROADWAY	48	8	15
248	56CXT	BROADWAY	ANNAI SIVAKAMINAGAR	60	1	140
249	56D	MANALI	BROADWAY	60	8	18
250	56DET	MATHUR M.M.D.A. GATE	BROADWAY	70	1	160

251	56E	TOLLGATE	MINJUR N.T.	70	3	53
252	56ET	BROADWAY	ENNORE	75	2	85
253	56K	TOLLGATE	REDHILLS	80	3	60
254	56M	VALLALAR NAGAR	VICHOOR	70	2	80
255	56N	ENNORE	BROADWAY	70	9	18
256	56P	BROADWAY	MINJUR N.T.	100	14	16
257	56R	PADIYANALLUR	MINJUR N.T.	80	1	180
258	56V	THIRUVOTRIYUR	REDHILLS	80	1	180
259	C56C	BROADWAY	THIRUVOTRIYUR (via.BEACH)	48	1	116
260	P56D	MANALI	BROADWAY	55	9	14
261	57	REDHILLS	VALLALAR NAGAR	45	10	11
262	57CCT	REDHILLS	GNAYARU	80	1	180
263	57CNH	VALLALAR NAGAR	ARUMANDAI RD.JN.	70	1	160
264	57F	KARANODAI	BROADWAY	70	15	11
265	A57	BROADWAY	PADIANALLUR	55	5	26
266	L57FET	BROADWAY	JANAPAN CHATTARAM KOOT RD	70	1	160
267	P57FNH	KARANODAI	BROADWAY	72	1	164
268	59	VALLALAR NAGAR	THIRUVERKADU	73	13	13
269	60	ANAKAPUTHUR	BROADWAY	70	6	27
270	60A	HIGHCOURT	KUNDRATHUR M.TEMPLE	85	2	95
271	60C	HIGHCOURT	ANAKAPUTHUR	70	2	80
272	60D	HIGHCOURT	PAMMAL KAMARAJAPURAM	70	1	160
273	60E	BROADWAY	KUNDRATHUR B.S.	85	2	95
274	60G	HIGHCOURT	POZHICHALUR	80	1	180
275	60H	BROADWAY	SANKARA HEALTH CENTRE	70	1	160

276	62	POONAMALLEE	REDHILLS	80	19	9
277	62ET	POONAMALLEE	PADIYANALLUR	85	2	95
278	64B	MINJUR N.T.	BROADWAY	95	3	70
279	65A	SAIDAPET	MUTHAPUDUPET	90	1	200
280	65D	AVADI	MELKONDAIYUR	65	2	75
281	65G	AVADI	MEYYUR	95	1	210
282	65H	AVADI	REDHILLS	85	1	190
283	66	POONAMALLEE	TAMBARAM	75	11	15
284	PP66	POONAMALLEE	VANDALOOR ZOO	75	23	7
285	70A/70	AVADI	VANDALOOR ZOO	110	27	9
286	70B	AVADI	CHROMEPET	75	1	170
287	70BET	AVADI	CHROMEPET LAKSHMIPURAM	85	1	190
288	70C	KOYAMBEDU MARKET	TAMBARAM	65	16	9
289	70D	MADIPAKKAM	AMBATTUR ESTATE	80	1	180
290	70G	AYANAVARAM	TAMBARAM	75	1	170
291	70K	C.M.B.T.	KILKATTALAI	70	1	160
292	70PET	VEPPAMPATTU E.WARAN NAGAR	THIAGARAYA NAGAR	100	1	220
293	70R	RAMAPURAM	AMBATTUR ESTATE	50	1	120
294	70S	C.M.B.T.	KANNAGI NAGAR S.C.B.	75	4	43
295	70V	KOYAMBEDU MARKET	GUDUVANCHERY	90	2	100
296	70W	VELACHERY	MOGAPPAIR WEST	70	1	160
297	A70	AVADI	PALLAVARAM	75	3	57
298	B70	PATTABIRAM	GUINDY TVK ESTATE	85	8	24
299	C70	REDHILLS	GUINDY TVK ESTATE	65	8	19
300	C70ET	GUINDY TVK ESTATE	PADIYANALLUR	75	2	85

301	D70	AMBATTUR ESTATE	VELACHERY	70	34	5
302	D70ET	PATTABIRAM	VELACHERY	110	2	120
303	D70EX	AMBATTUR ESTATE	MEDAVAKKAM	85	1	190
304	F70	GUINDY TVK ESTATE	PATTABIRAM	105	2	115
305	G70	VADAPALANI	GUDUVANCHERY	75	9	19
306	H70	HASTHINAPURAM	PATTABIRAM	100	1	220
307	K70V	MOGAPPAIAR WEST	TAMBARAM	70	1	160
308	71D	BROADWAY	PUDUR	60	3	47
309	71E	BROADWAY	THIRUNINDRAVOOR	85	12	16
310	71H	BROADWAY	KAMARAJ NAGAR	80	2	90
311	71V	BROADWAY	VEPPAMPATTU E.WARAN NAGAR	95	2	105
312	80	TAMBARAM	PADAPPAI	50	2	60
313	88	VADAPALANI	KUNRATHUR M.TEMPLE	50	11	11
314	88A	HIGHCOURT	NANDAMBAKKAM	105	2	115
315	88C	SAIDAPET	KUNDRATHUR B.S.	55	4	33
316	88CCT	HIGHCOURT	THANDALAM VILLAGE	80	2	90
317	88CET	THIAGARAYA NAGAR	NANDAMBAKKAM VILLAGE	85	1	190
318	88CEX	HIGHCOURT	KUNDRATHUR M.TEMPLE	90	3	67
319	88D	SAIDAPET WEST	KUNDRATHUR B.S.	65	2	75
320	88K	HIGHCOURT	KUNDRATHUR B.S.	75	8	21
321	88M	BROADWAY	SOMANGALAM	90	1	200
322	88NH	HIGHCOURT	KUNDRATHUR B.S.	80	1	180
323	101	THIRUVOTRIYUR	POONAMALLEE	100	19	12
324	114	REDHILLS	VANDALOOR ZOO	100	22	10
325	114ET	TAMBARAM	PADIYANALLUR	95	2	105
326	114SN	SEEMAVARAM	KOYAMBEDU MARKET	110	1	240

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327	116L	KODUNGAIYUR-PARVATHYNAGAR	BROADWAY	45	1	110
328	118A	HIGHCOURT	OONAMANCHERI	100	1	220
329	118P	GUDUVANCHERY	PUZHUTHIVAKKAM	90	1	200
330	G118	THIAGARAYA NAGAR	KAVANOOR KOOT ROAD	100	1	220
331	119	THIRUVOTTIYUR	KOVALAM	110	2	120
332	119B	GUINDY TVK ESTATE	CHEMMENCHERY S.C.B.	70	4	40
333	120	BROADWAY	AVADI	70	11	15
334	120CT	BROADWAY	THIRUMULLAIVOYAL COLONY	65	1	150
335	121C	ENNORE	C.M.B.T.	105	1	230
336	121E	M.K.B.NAGAR	PATTABIRAM	80	1	180
337	121G	K.KANNADASAN NAGAR	C.M.B.T.	50	2	60
338	134	THIRUVOTRIYUR	PATTABIRAM	110	1	240
339	134A	THIRUVOTRIYUR	MUGAPPAIR WEST	90	2	100
340	138	ENNORE	MUTHAMIZH NAGAR	85	1	190
341	138A	THIRUVOTRIYUR	PERIYAR NAGAR	70	3	53
342	138C	THIRU.VI.KA.NAGAR	VIVEKANANDA HOUSE	60	3	47
343	147C	AMBATTUR O.T.	THIAGARAYA NAGAR	70	14	11
344	151	HIGHCOURT	VENGAIVASAL PHC	115	1	250
345	T151	TAMBARAM EAST	KOVALAM	80	3	60
346	T151CT	SHOLINGANALLUR	KELAMBAKKAM	50	1	120
347	152B	BROADWAY	HASTHINAPURAM (via.Adyar)	85	1	190
348	152L	HIGHCOURT	NANGANALLUR	80	1	180
349	153	BROADWAY	THIRUMAZHISAI	75	12	14

350	154	THIAGARAYA NAGAR	PATTUR	65	2	75
351	154A	THIAGARAYA NAGAR	THIRUNINDRAVOOR	90	2	100
352	155A	HIGHCOURT	THIRUMUDIVAKKAM	90	1	200
353	156A	VALLALAR NAGAR	ENNORE	65	1	150
354	156N	BROADWAY	ENNORE	65	1	150
355	157	REDHILLS	THIRUVOTRIYUR	80	4	45
356	157ET	THIRUVOTTIYUR	PADIYANALLUR	80	2	90
357	159A	THIRUVOTTIYUR	C.M.B.T.	75	15	11
358	159C	THIRUVOTRIYUR	KOYAMBEDU MARKET	75	1	170
359	159E	C.M.B.T.	ENNORE	105	8	29
360	166	IYAPPANTHANGAL	TAMBARAM	70	7	23
361	170	TAMBARAM	THIRUVERKADU	80	10	18
362	170A	MADAVARAM VILLAGE	VANDALOOR ZOO	100	5	44
363	170B	THIRU-VI-KA-NAGAR	TAMBARAM	90	1	200
364	170C	THIRUV.VI.KA.NAGAR	GUINDY TVK ESTATE	70	11	15
365	170E	I.O.C.	TAMBARAM	100	1	220
366	170G	GUINDY TVK ESTATE	PERIYAR NAGAR	65	1	150
367	170H	PERAMBUR	HASTHINAPURAM	90	1	200
368	170K	AMBATTUR O.T.	GUDUVANCHERY (VESTIBULE)	105	2	115
369	170L	KALLIKUPPAM	VANDALOOR ZOO	105	2	115
370	170N	PERAMBUR	KILKATTALAI	100	1	220
371	170P	PATTABIRAM	TAMBARAM	100	1	220
372	170T	K.KANNADASAN NAGAR	VANDALOOR ZOO	100	8	28
373	219AV	AMBATTUR ESTATE	KELAMBAKKAM	120	5	52
374	242	BROADWAY	REDHILLS	65	13	12
375	T242	THIRUVANMIYUR	PADIYANALLUR	105	2	115

376	254	HIGHCOURT	IYAPPANTHANGAL	75	8	21
377	266	AVADI	TAMBARAM	80	8	23
378	500	THIAGARAYA NAGAR	CHENGLEPET	100	14	16
379	500A	HASTHINAPURAM	CHENGLEPET	80	1	180
380	500B	HIGHCOURT	SINGAPERUMAL KOIL (M.CITY)	100	9	24
381	500CV	BROADWAY	CHENGLEPET	120	1	260
382	500VV	VELACHERY	MAHINDRA CITY	120	1	260
383	501	VADAPALANI	POONDI	120	2	130
384	502	HIGHCOURT	SRIPERUMBUDUR	105	4	58
385	505	REDHILLS	THIRUVALLUR	85	4	48
386	505A	THIRUVALLUR	PERIYAPALAYAM TEMPLE	70	1	160
387	510	C.M.B.T.	PADAPPAI	90	1	200
388	512	REDHILLS	MADARAPAKKAM	90	3	67
389	514	C.M.B.T.	PERIYAPALAYAM	90	4	50
390	514ET	C.M.B.T.	ENAMBAKKAM	105	2	115
391	515	TAMBARAM	MAMALLAPURAM	80	11	16
392	517	VADANEMILI	PALLAVARAM	75	5	34
393	518	THIAGARAYA NAGAR	MARAIMALAI NAGAR I.E.	85	2	95
394	518ET	HIGHCOURT	MARAIMALAI NAGAR I.E.	95	1	210
395	519	THIAGARAYA NAGAR	THIRUPORUR	90	4	50
396	521	BROADWAY	THIRUPORUR	95	6	35
397	522	ADAYAR B.S.	MANAMATHI	105	1	230
398	523	THIRUVANMIYUR	PERUNTHANDALAM	105	1	230
399	523A	THIRUVANMIYUR	KARUMBAKKAM	105	1	230
400	525	VADAPALANI B.S.	SUNGUVARCHATTIRAM	85	6	32
401	527	BROADWAY	THATHAMANJI	120	1	260

402	532	VALLALAR NAGAR	PERIYAPALAYAM	85	2	95
403	533	C.M.B.T.	ARANI	100	2	110
404	536	PONNERI	PATTABIRAM	95	2	105
405	538	VADAPALANI	KADAMBATHUR B.S.	120	2	130
406	547	VALLALAR NAGAR	PERIYAPALAYAM (ARANI)	85	4	48
407	549	THIRUVANMIYUR	SRIPERUMBUDUR	95	6	35
408	551	VELACHERY	T.ACHARAVAKKAM	95	1	210
409	551A	TAMBARAM EAST	KELAMBAKKAM	70	1	160
410	552K	KILKATTALAI	THIRUPORUR	65	2	75
411	553	BROADWAY	SRIPERUMBUDUR	95	4	53
412	554	THIAGARAYA NAGAR	SRIPERUMBUDUR	80	9	20
413	554A	PUZHUTHIVAKKAM	SRIPERUMBUDUR	100	1	220
414	554B	EKKATTUTHANGAL	SUNGUVARCHATTIRAM	95	1	210
415	555	TAMBARAM	THIRUPORUR	70	4	40
416	555M	TAMBARAM	THIRUPORUR	80	1	180
417	555N	TAMBARAM	THIRUPORUR	80	1	180
418	557	BROADWAY	GUMMUDIPOONDI	105	5	46
419	557A	VALLALAR NAGAR	RETTAMBEDU	105	1	230
420	558	VALLALAR NAGAR	PONNERI	80	2	90
421	558A	REDHILLS	MINJUR	100	1	220
422	558B	REDHILLS	PAZHAVERKADU	80	6	30
423	558L	C.M.B.T.	MINJUR	95	1	210
424	558M	MINJUR N.T.	REDHILLS	65	1	150
425	562	AMBATTUR ESTATE	THANDALAM	95	1	210
426	562A	REDHILLS	SRIPERUMBUDUR	110	2	120
427	562B	POONAMALLEE	PONNERI	110	2	120

428	563	AMBATTUR ESTATE	PERIYAPALAYAM	90	3	67
429	565	PATTABIRAM	SRIPERUMBUDUR	80	2	90
430	565A	AVADI	SUNGUVARCHATTIRAM	80	2	90
431	566	KUNDRATHUR B.S.	THIRUPORUR	80	5	36
432	566A	TAMBARAM	THIRUVALLUR	105	5	46
433	566A	TAMBARAM	THIRUVALLUR	105	5	46
434	566B	PATTUR	KOVALAM	100	2	110
435	568	ADAYAR B.S.	MAMALLAPURAM (OMR)	85	1	190
436	568A	MANDAVELI	MAMALLAPURAM	90	2	100
437	568CV	C.M.B.T.	MAMALLAPURAM	120	4	65
438	570	C.M.B.T.	KELAMBAKKAM	100	18	12
439	571	BROADWAY	THIRUVALLUR	120	4	65
440	572	AMBATTUR ESTATE	THIRUVALLUR	75	5	34
441	576V	THIAGARAYA NAGAR	KANCHEEPURAM	120	12	22
442	578	KUNDRATHUR B.S.	SRIPERUMBUDUR	60	3	47
443	578A	VADAPALANI	SRIPERUMBUDUR	100	3	73
444	579	BROADWAY	PADAPPAI	90	2	100
445	579A	TAMBARAM	WALAJABATH	80	11	16
446	580	AVADI	ARANI	80	4	45
447	582	THIAGARAYA NAGAR	VALLAKKOTTAI	100	4	55
448	583	TAMBARAM	SRIPERUMBUDUR	80	10	18
449	583A	THIRUVALLUR	SRIPERUMBUDUR	45	6	18
450	583B	TAMBARAM	PERAMBAKKAM	105	1	230
451	583C	TAMBARAM	SRIPERUMBUDUR	65	2	75
452	583D	TAMBARAM	SRIPERUMBUDUR	55	1	130
453	583E	PALLAVARAM	VALLAKKOTTAI	75	2	85

454	587	BROADWAY	THIRUPORUR	105	2	115
455	588	ADAYAR B.S.	MAMALLAPURAM (ECR)	85	4	48
456	589	VELACHERY	MAMALLAPURAM (ECR)	85	1	190
457	591	THIAGARAYA NAGAR	PERAMBAKKAM	115	1	250
458	591A	C.M.B.T.	PERAMBAKKAM	105	2	115
459	591B	VADAPALA NI	PERAMBAKKAM	105	1	230
460	592	VALLALAR NAGAR	PERIYAPALAYAM TEMPLE	85	8	24
461	592A	REDHILLS	UTHUKKOTTAI	80	4	45
462	593	BROADWAY	THANDALAM	110	2	120
463	595	TOLLGATE	PAZHAVERKADU	100	1	220
464	595A	THIRUVOTRIYUR	PAZHAVERKADU	90	1	200
465	596	C.M.B.T.	THIRUVALLUR	95	4	53
466	596A	C.M.B.T.	PANDUR	105	2	115
467	597	THIAGARAYA NAGAR	THIRUVALLUR	95	11	19
468	599	THIAGARAYA NAGAR	MAMALLAPURAM	95	7	30
469	M1	THIRUVANMIYUR	KILKATTALAI	40	9	11
470	M1A	KANATHUR	NANGANALLUR	85	1	190
471	M2A	M.K.B.NAGAR	ANNA SQUARE	50	12	10
472	M4	THIRUVOTRIYUR	THIRUVANMIYUR	100	2	110
473	M5	ADAYAR B.S.	KELAMBAKKAM	70	8	20
474	M7	THIAGARAYA NAGAR	THIRUVANMIYUR	45	12	9
475	M7K	PADIKUPPAM	BROADWAY	55	1	130
476	M8A	TOLLGATE	PERIYAR NAGAR	65	1	150
477	M9M	THIAGARAYA NAGAR	AGS OFFICER'S COLONY	40	4	25
478	M9MEXT	HIGHCOURT	A.G.S.OFICER'S COLONY	70	1	160
479	M11	TAMBARAM EAST	SAIDAPET	70	2	80

480	M11A	VALLALAR NAGAR	RANGARAJAPURAM	55	2	65
481	M12	HIGHCOURT	KILKATTALAI	90	1	200
482	M12BET	IYAPPANTHANGAL	FORESHORE ESTATE	70	1	160
483	M12BET	C.M.B.T.	FORESHORE ESTATE	70	1	160
484	M14	MEDAVAKKAM RD.JN.	N.G.O.COLONY	40	8	13
485	M15	MYLAPORE	MEDAVAKKAM Q.M.A.COLLEGE	55	7	19
486	M15A	BROADWAY	ANNA NAGAR WEST	48	1	116
487	M15C	BROADWAY	ANNA NAGAR WEST	75	2	85
488	M15D	ANNA NAGAR WEST	BROADWAY	48	1	116
489	M15ET	MYLAPORE	TAMBARAM EAST	70	1	160
490	M15FCT	KOYAMBEDU MARKET	BROADWAY	45	6	18
491	M15LCT	BROADWAY	ATHIPET I.C.F. COLONY	70	1	160
492	M17A	BROADWAY	KOYAMBEDU MARKET	65	2	75
493	M17P	PUZHUTHIVAKKAM	CENTRAL	70	1	160
494	M18	TAMBARAM	GUDUVANCHERY	30	2	40
495	M18C	THIAGARAYA NAGAR	KILKATTALAI	50	6	20
496	M18G	HASTHINAPURAM	GUDUVANCHERY	50	1	120
497	M18M	VADAPALANI	TAMBARAM	70	8	20
498	M18N	NANGANALLUR	GUDUVANCHERY	65	1	150
499	M18T	ALANDUR MUNICIPALITY	HIGHCOURT	55	1	130
500	M19	GUINDY TVK ESTATE	INJAMBAKKAM (VGP)	55	3	43
501	M19A	THIAGARAYA NAGAR	KELAMBAKKAM	90	2	100
502	M19B	THIAGARAYA NAGAR	KANNAGI NAGAR S.C.BOARD	60	4	35

503	M20A	BROADWAY	MOGAPPAIR	70	1	160
504	M20B	MENAMBEDU	BROADWAY	80	3	60
505	M20C	ORAGADAM	BROADWAY	70	2	80
506	M20E	AMBATTUR ESTATE	AYAPPAKKAM	35	3	30
507	M20H	C.M.B.T.	KARUKKU	80	1	180
508	M20K	AMBATTUR ESTATE	THIRUVERKADU	52	1	124
509	M20M	PERAVALLUR KUMARAN NAGAR	BROADWAY	65	1	150
510	M20P	AMBATTUR ESTATE	POONAMALLEE	50	2	60
511	M21	VELACHERY	TAMBARAM EAST	50	13	9
512	M21C	CENTRAL R.S.	KANNAGI NAGAR S.C.B.	65	3	50
513	M21F	EGMORE	KANNAGI NAGAR S.C.B.	65	1	150
514	M21G	BROADWAY	GUINDY TVK ESTATE	60	6	23
515	M25E	KALAIGNAR NAGAR	ANNA SQUARE	50	1	120
516	M27	C.M.B.T.	THIAGARAYA NAGAR	45	4	28
517	M27E	ELANGONAGAR OFFICERS CLNY	ANNA SQUARE	65	1	150
518	M27ET	VADAPALANI	THIRUVERKADU	55	1	130
519	M27LET	ANNA SQUARE	MOGAPPAIR WEST	65	2	75
520	M27N	MOGAPPAIR EAST	ANNA SQUARE	58	1	136
521	M27R	ORAGADAM	ANNA SQUARE	90	1	200
522	M27T	THIAGARAYA NAGAR	ORAGADAM	80	1	180
523	M27V	THIAGARAYA NAGAR	THIRUVERKADU	75	1	170
524	M28	THIRUVOTRIYUR	ANNA SQUARE	65	4	38
525	M29AEX	PERAVALLUR KUMARAN NAGAR	ANNA SQUARE	65	2	75
526	M29AXT	PERIYAR NAGAR	ANNA SQUARE	65	2	75

527	M29CEX	PERIYAR NAGAR	BESANT NAGAR	70	1	160
528	M29CXT	SRINIVASA NAGAR	BESANT NAGAR	90	2	100
529	M29EXT	VINAYAGAPURAM	MANDAVELI	80	1	180
530	M37B	VADAPALANI	THIRU-VI-KA NAGAR	75	4	43
531	M37ECT	M.K.B.NAGAR	VADAPALANI B.S.	60	1	140
532	M38A	BROADWAY	MATHUR MMDA	65	1	150
533	M38C	THIRU.VI.KA.NAGAR	VIVEKANANDAR HOUSE	60	6	23
534	M38D	THIRUVOTRIYUR	KODUNGAIYUR-PARVATHYNAGAR	70	1	160
535	M38G	BROADWAY	VAZHUTHIGAIMEDU	95	2	105
536	M38H	MADHAVARAM VILLAGE	BROADWAY	50	6	20
537	M38HET	BROADWAY	MATHUR M.M.D.A.	70	1	160
538	M40	AMBATTUR O.T.	ANNA SQUARE	72	2	82
539	M40ET	MENAMBEDU	ANNA SQUARE	78	1	176
540	M41C	ANNA NAGAR WEST	THIRUVANMIYUR	70	1	160
541	M41F	KOYAMBEDU MARKET	MANDAVELI	65	1	150
542	M42B	POOMBUHAR	BROADWAY	60	4	35
543	M42C	TEACHERS COLONY	BROADWAY	65	2	75
544	M44D	BROADWAY	I.O.C.	40	1	100
545	M45	THIAGARAYA NAGAR	KILKATTALAI	45	5	22
546	M45AET	VIVEKANANDA HOUSE	MADIPAKKAM B.S.	65	7	21
547	M45E	ANNA SQUARE	KILKATTALAI	80	4	45
548	M45K	KILKATTALAI	PALLAVARAM GATE	15	1	50

549	MN45B	ANNA SQUARE	NANGANALLUR	65	2	75
550	M46ACT	VILLIVAKKAM	KOYAMBEDU MARKET	35	1	90
551	M46B	PERIYAR NAGAR	C.M.B.T.	65	3	50
552	M46C	C.M.B.T.	KODUNGAIYUR-PARVATHYNAGAR	65	1	150
553	M46GCT	M.K.B.NAGAR EAST	KOYAMBEDU MARKET	65	1	150
554	M47D	AMBATTUR O.T.	THIRUVANMIYUR	90	2	100
555	M47DET	THIAGARAYA NAGAR	KORATTUR	70	2	80
556	M48A	MADHAVARAM VILLAGE	AMBATTUR ESTATE	65	3	50
557	M48AEX	MADHAVARAM VILLAGE	MOGAPPAIR WEST	80	1	180
558	M49	THIRUVANMIYUR	RAMACHANDRA MEDICAL COLL.	50	12	10
559	M49B	THIAGARAYA NAGAR	POONAMALLEE	80	1	180
560	M50ET	AYYAPPAN MADAM	BROADWAY	65	1	150
561	M51	THIAGARAYA NAGAR	PRITHIYANGARA DEVI TEMPLE	70	3	53
562	M51BET	THIAGARAYA NAGAR	CHITHALAPAKKAM	60	1	140
563	M51C	THIAGARAYA NAGAR	OTTIAMBAKKAM	70	1	160
564	M51D	KELAMBAKKAM	SAIDAPET	95	1	210
565	M51F	THIAGARAYA NAGAR	SUNNAMBU KOLATHUR	55	1	130
566	M51G	TAMBARAM EAST	VENGAIVASAL P.H.CENTRE	40	4	25
567	M51P	HIGHCOURT	PUZUTHIVAKKAM B.S.	65	2	75
568	M51R	HIGHCOURT	MADIPAKKAM B.S.	70	1	160
569	M51V	THIAGARAYA NAGAR	KOLATHUR	80	4	45
570	M52	CHROMEPET	POZHICHALUR	25	2	35

571	M52B	HASTHINAPURAM	AIRPORT	25	1	70
572	M52BET	HASTHINAPURAM	POZHICHALUR	40	1	100
573	M52D	HIGHCOURT	CHITLAPAKKAM	70	1	160
574	M52E	HIGHCOURT	NEMILICHERY	75	1	170
575	M52ET	POZHICHALUR	GUDUVANCHERY	60	2	70
576	M52G	BROADWAY	COWL BAZAAR	70	1	160
577	M52S	NEMILICHERY	POZHICHALUR	40	1	100
578	M53S	C.M.B.T.	PATTABIRAM B.S.	70	1	160
579	M54	THIAGARAYA NAGAR	POONAMALLEE	55	10	13
580	M54A	POONAMALLEE	THIRUNINDRAVOOR	50	4	30
581	M54S	THIAGARAYA NAGAR	VADAKKU MALAIAMBAKKAM	65	1	150
582	M55	TAMBARAM	VANDALOOR RLY.GATE	33	6	14
583	M55EXT	TAMBARAM	MANNIVAKKAM EXTN.	25	2	35
584	M55T	THIAGARAYA NAGAR	THIRUNEERMALAI	50	2	60
585	M56	BROADWAY	KARGIL NAGAR	70	1	160
586	M56G	C.M.B.T.	ODEONMANI	75	1	170
587	M56P	BROADWAY	THIRUVOTRIYUR	50	5	24
588	M56W	VALLALAR NAGAR	MADHAVARAM VILLAGE	75	1	170
589	M57	BROADWAY	REDHILLS	65	4	38
590	M57A	VALLALAR NAGAR	ANGADU	60	1	140
591	M57B	VALLALAR NAGAR	POTHUR	75	1	170
592	M57D	BROADWAY	POOCHI ATHIPEDU	85	2	95
593	M57E	REDHILLS	VICHOOR	60	1	140
594	M57G	REDHILLS	VAZHUTHIGAIMEDU	75	1	170
595	M57M	BROADWAY	ALAMATHI	70	1	160

596	M58G	BROADWAY	GNAYARU	105	1	230
597	M58ACT	REDHILLS	GNAYARU	50	1	120
598	M58H	VALLALAR NAGAR	NEW ERUMAIVETTI PALAYAM	90	2	100
599	M58V	C.M.B.T.	REDHILLS	80	1	180
600	M59A	I.O.C.	VADAPALANI B.S.	90	1	200
601	M60	N.BAKKAM KALAIGNAR NAGAR	THIAGARAYA NAGAR	80	1	180
602	M61A	AMBATTUR ESTATE	MELAPPEDU	70	1	160
603	M61B	ARAKKAMBAKKAM	BROADWAY	100	2	110
604	M61BCT	KOYAMBEDU MARKET	POOCHI ATHIPEDU	95	1	210
605	M61C	AVADI	MUTHAPUDUPET	28	5	15
606	M61D	KADHAVOOR	BROADWAY	105	1	230
607	M61DET	BROADWAY	KILKONDAIYUR	120	1	260
608	M61E	KILKONDAIYUR	BROADWAY	120	1	260
609	M61ECT	KILKONDAIYUR	KOYAMBEDU MARKET	100	2	110
610	M61K	AVADI	KANNIAMMAN NAGAR	40	3	33
611	M61R	AVADI	REDHILLS	60	3	47
612	M62	AVADI	REDHILLS	50	2	60
613	M62A	AMBATTUR ESTATE	REDHILLS	52	5	25
614	M62D	PUZHAL	KOYAMBEDU MARKET	70	1	160
615	M62E	KOYAMBEDU MARKET	MADHANAKUPPAM	60	1	140
616	M64C	BROADWAY	MANALI	70	9	18
617	M64D	BROADWAY	KOSAPPUR	70	1	160
618	M64P	PERAMBUR	MINJUR N.T.	80	3	60

619	M65	POONAMALLEE	AVADI	40	1	100
620	M65B	AMBATTUR ESTATE	POONAMALLEE	65	15	10
621	M65CCT	AMBATTUR ESTATE	PAKKAM VILLAGE	70	1	160
622	M65E	AMBATTUR ESTATE	POONAMALLEE	65	2	75
623	M65EET	AVADI	POONAMALLEE	50	1	120
624	M66A	HASTHINAPURAM	KUNDRATHUR B.S.	50	1	120
625	M70	C.M.B.T.	THIRUVANMIYUR	65	19	8
626	M70A	AVADI	C.M.B.T.	60	16	9
627	M70D	ELANGONAGAR OFFICERS CLNY	GUINDY R.S.	50	2	60
628	M70E	C.M.B.T.	VEPPAMPATTUB.S.(ESWRNNGR)	85	3	63
629	M70K	MOGAPPAIR EAST	THIRUVANMIYUR	80	1	180
630	M70L	AMBATTUR O.T.	TAMBARAM	90	1	200
631	M70N	NANGANALLUR	KOYAMBEDU MARKET	75	1	170
632	M70V	GUINDY TVK ESTATE	AMBATTUR ESTATE	65	5	30
633	M70V	C.M.B.T.	THIRUVANMIYUR	65	2	75
634	MH70	C.M.B.T.	GNANAMOORTHY NAGAR	50	1	120
635	M71C	BROADWAY	SIDCO NAGAR	75	1	170
636	M71F	SENTHIL NAGAR	BROADWAY	65	1	150
637	M79	PADAPPAI	THIAGARAYA NAGAR	85	2	95
638	M88E	EKKATTUTHANGAL	KUNDRATHUR B.S.	60	1	140
639	M88ET	C.M.B.T.	KUNDRATHUR B.S.	70	1	160
640	M88L	THIAGARAYA NAGAR	PERIYA COLONY	85	1	190
641	M88R	BROADWAY	AMARAMBEDU	130	2	140
642	M89	PORUR	SOMANGALAM	60	2	70

643	M89T	IYAPPANTHANGAL	AMARAMBEDU EAST	70	1	160
644	M114CT	REDHILLS	KOYAMBEDU MARKET	48	3	39
645	M114P	KOYAMBEDU MARKET	PADIYANALLUR	58	2	68
646	M114T	THIAGARAYA NAGAR	PADIYANALLUR	80	2	90
647	M116	BROADWAY	MUTHAMIZ NAGAR (M116)	45	9	12
648	M118	TAMBARAM	MARAIMALAI NAGAR I.E	50	5	24
649	M119	GUINDY TVK ESTATE	CHEMMENCHERY S.C.B.	70	10	16
650	M119A	THIAGARAYA NAGAR	CHEMMENCHERY S.C.B.	70	9	18
651	M121A	MANALI	KOYAMBEDU MARKET	60	3	47
652	M121B	MINJUR N.T.	C.M.B.T.	105	1	230
653	M121D	MANALI NEW TOWN	C.M.B.T.	90	2	100
654	M127	VILLIVAKKAM	ANNA SQUARE	65	2	75
655	M127B	THIRUVERKADU	ANNA SQUARE	80	4	45
656	M129C	PERAMBUR	NANGANALLUR	85	1	190
657	M141C	THIRUVANMIYUR	MUGAPPAIR OFF.COLONY	80	1	180
658	M142	PERAMBUR	VINAYAGAPURAM	25	4	18
659	M142B	PERAVALLUR KUMARAN NAGAR	BROADWAY	50	3	40
660	M147A	MUGAPPAIR EAST	THIAGARAYA NAGAR	50	5	24
661	M147B	THIAGARAYA NAGAR	MOGAPPAIR WEST	50	7	17
662	M147CE	THIAGARAYA NAGAR	AYAPAKKAM	70	1	160
663	M147S	SENTHIL NAGAR	THIAGARAYA NAGAR	75	2	85
664	M150	AVADI	BROADWAY	100	1	220
665	M151K	TAMBARAM EAST	KANNAGI NAGAR S.C.B.	60	1	140
666	M152N	NANGANALLUR	CENTRAL	65	2	75
667	M153	C.M.B.T.	PATTABIRAM B.S.	75	1	170

668	M154B	POONAMALLEE	NANGANALLUR	65	2	75
669	M154E	EKKATTUTHANGAL	VELLAVEDU	65	1	150
670	M159	THIRUVOTRIYUR	THIRUVERKADU	105	8	29
671	M159B	TOLLGATE	C.M.B.T.	65	7	21
672	M159D	I.O.C.	C.M.B.T.	65	2	75
673	M164	PERAMBUR	MATHUR MMDA	30	3	27
674	M170B	PERAVALLUR KUMARAN NAGAR	GUINDY TVK ESTATE	65	2	75
675	M170CE	MANALI	GUINDY TVK ESTATE	90	2	100
676	M170T	ANNA NAGAR WEST	THIRUVANMIYUR	75	2	85
677	MD170	VELACHERY	THIRUVERKADU	80	1	180
678	M188C	HIGH COURT	KUNDRATHUR	95	1	210
679	M248	VALLALAR NAGAR	PUDUR	65	16	9
680	M248A	VALLALAR NAGAR	KALLIKUPPAM	70	2	80
681	M248ET	ORAGADAM	VALLALAR NAGAR	65	1	150
682	M253	AMINJIKARAI	VELLAVEDU	70	6	27
683	M270	AMBATTUR ESTATE	PUZHUTHIVAKKAM	90	1	200
684	M500	TAMBARAM	CHENGLEPET	70	17	9
					3140	

Annexure 2

Stage carriage means a motor vehicle constructed or adapted to carry more than six passengers excluding the driver for hire or reward at separate fares paid by or for individual passengers, either for the whole journey or for stages of the journey.

Tax Rates for Stage Carriages (per seat per quarter)

a.	Plying exclusively within the Chennai Metropolitan area	Quarterly ₹.80/- plus ₹.25/- surcharge
b.	Town Service	Quarterly ₹.325/- plus 10% surcharge
c.	Mofussil Service	Quarterly ₹.400/- plus 25% surcharge
d.	Express Service	Quarterly ₹.400/- plus 25% surcharge
e.	Mini Bus Based on Seating Capacity	₹.160/- + 25% Surcharge per seat
		Quarterly ₹.100/- plus 25% surcharge in Ghat Section.

Annexure 3

Goods carriage means any motor vehicle contracted or adapted for use solely for the carriage of goods, or any motor vehicle not so constructed or adapted when used for the carriage of goods.

Tax Rates for Contract Carriages

a.	Omni Bus	Based on Seating Capacity	a) Not more than 36 (other than driver) for every square meter of floor area of the vehicle ₹.4900/- b) More than 36 persons (Other than driver) for ever person (Other than the driver) = ₹.3000/-
b.	Maxi cab	Based on Seating Capacity	₹.275/- per seat per quarter
c.	Tourist Motor Cab	Permit period	₹.6500/- for 5 years
d.	Motor Cab (Ordinary)	Permit period	₹.4000/- for 5 years
e.	Auto rickshaw	Permit period	₹.1400/- for 5 years
f.	Share Auto rickshaw	Permit period	₹.4000/- for 5 years
Vehicle permitted to ply solely as contract carriages and to carry more than five persons(Other than the driver) For every persons(other than the driver) which the vehicle is permitted to carry whether the contract carriage is classed as "Tourist Vehicle" or not			
a.	not more than thirty six persons (other than driver) for every square meter of floor area of the vehicle	a) Not more than 36 (other than driver) for every square meter of floor area of the vehicle ₹.4900/-	
b.	more than thiry six persons (other than driver) for every persons(other than the driver)	b) More than 36 persons (Other than driver) for ever person (Other than the driver) = ₹.3000/-	

Annexure 4

Government of Tamil Nadu
State Transport Authority

Motor Cars, JEEPs, Etc. (Annual Tax)

		Imported Vehicles	Indian Made Vehicles owned by	
			Individuals	Others
		₹	₹	₹
a	Weighing not more than 700 kgsunladen	1800	600	1200
b	Weighing more than700 kg but not more than 1,500 kgsunladen	2350	800	1600
c	Weighing more than 1500 kg but not more than 2,000 Kgsunladen	2700	1000	2000
d	Weighing more than 2000 kg but not more than 3000 Kgsunladen	2900	1100	2200
e	Weighing more than 3000 KgsUnladen in respect of which private Transport vehicle permit is not required under the Motor Vehicles Act	3300	1250	2500

Annexure 5

Transport Department

From

Dr. M. Rajaram, IAS
Transport Commissioner
Chepauk
Chennai 600 005

To

Thiru. Prasant Jena,
Centre for Public Research,
Door No.28/3656, 1st Floor,
Sonoro Church Road,
Elamkulam, Kochi, Kerala 682 020.

Lr.R.No.73516/B4/2010. Dated:09.12.2010

Sir,

Sub : Auto rickshaw particulars requesting - Regarding.

Ref Letter received from Thiru. Prasant Jena, Centre for Public Research, Kerala on 22.11.2010

The details required regarding share autorickshaw / autorickshaw in your letter cited are furnished as follows:

1. Fee for grant of autorickshaw permit is Rs.325 /- in Chennai city
2. Fee for grant of share auto permit Rs.525/- Service charge Rs.100=Total Rs.625

2(a). Both the permits are issued as contract carriage permit under section 74 of Motor Vehicles Act, 1988. But, the Seating capacity of the share auto is 5+1. Whereas the Seating Capacity of autorcikshaw is 3 +1

3. According to the G.O.Ms.48, Home(Transport) Department, Dated:10.1.2007 the fare for autorickshaw fixed as follows:
   The Minimum fare upto 2 Kms is : Rs. 14.00
   The Additional fare for each km is : Rs. 6.00
4. According to Rule.3(da) of Tamil Nadu Motor Vehicles Act, 1989 " Share auto" means a motor vehicle constructed, adapted or used to carry five passengers excluding the driver for hire reward and having less than four wheels
5. The details may be obtained from the Office of the Additional Commissioner of Police (Traffic), Chennai.
6. Share auto permits were granted to operate with in a radius of 30 km fom district headquarters and not exceeding the limit of the District boundary.

Sd./- M. Rajaram,
Transport Commissioner.

// By order //

Assistant Secretary III

10/12/10

Annexure 6

Drivers' Questionnaire

Auto Registration No:

1. **Profile of the Respondent**								
Name	b. Gender	c. Age (years)	d. Educational Qualification	e. Marital Status	f. Place of Residence in Chennai	g. Where do you originally belong to?	h. No. of family members	i. No. of Children
	i) M ii) F	i) 18-20 ii) 21-25 iii) 26-30 iv) 30-40 v) 40-50 vi) >50	i. < 8th pass ii. 8th pass iii.. 10th pass iv.. 12th pass v. Graduation vi. Other	i) Married ii) Single iii)Divorced			i. Alone ii. 1 iii. 2 iv. 3 v. 4-5 vi. >5	i) 0 ii) 1 iii) 2 iv) 3 v) >3

2. Which of the following best describes your Share Auto ownership?

a. Owner

b. Rented

c. Other *(please specify)*: _____

3. Income expenditure for Share Auto?

	Rent/day	Income/day	Fuel Cost/day	Mileage	Maintenance Cost/month	Loan Amt	EMI Amt/month	Avg. Bribe Amt	Avg. Fine Amt	Registration Details
Share Auto										
Tata Magic										
Ape Diesel										
Mahindra Maxximo										
Others										

4. Rules & Regulations

Allowed capacity	Is there overload (Yes/No)	Normal load	Aware of rules/regulation (Yes/No)

5. Why do you overload your vehicle?

a) Low pricing

b) Bribe

c) Weak law enforcement

d) Demand from passengers

e) More profit

f) Others specify

6.Working hours?

	Normal route from	Normal route to	AM	PM	Avg. Km per day	Avg. charge	Avg. No of Passengers per trip	Avg. Trips	Turndown
Monday									
Tuesday									
Wednesday									
Thursday									
Friday									
Saturday									
Sunday									

7.What are the reasons for you to not ply in other routes?

8.On the above specified days of driving are there any particular day/time you overcharge? Reason for overcharge

9.What is the most common reason for trip turndowns?

10.If there are multiple routes, then only ask (Q5) the reasons for changing routes?

11.What is your idle time during working hours? (idle means: food, waiting time etc)

12.Why do you think people look for your transport service?

a.Lack of public transport

b.People require quick transport

c.Helps connect people to main city (as there is limited connectivity to main city)

d. Others specify

13.How customers are satisfied using your service?

a.Satisfied

b.Neutral

c.Dissatisfied

14.How do agree to the following:

1 Disagree 2 Neutral 3 Agree

	Disagree(1)/Neutral (2)/Agree(3)
The cost of service is reasonable	
Easily accessible to all (disabled/old people)	
Service is flexible	
Passenger feel safe using your service	
Vehicles are clean and well maintained	
Prompt service, on time, reliable	
Your friendly and helpful	
Does a good job of getting the passenger where they want to go	

15.Do you support common ticketing system?

a.Yes

b.No

c.If no why?

16.Your expectation out of common ticketing?

a) Expect the same price as now
b) Expect a lower price
c) Expect a higher price
d) Others Specify

Annexure7

Passengers' Questionnaire

TIME:

Name: _____

Address: _____

1.What kind of transportation do you use on daily basis? (please check all that apply)

a) Two wheelers
b) Bus
c) Train
d) Car
e) Auto
f) Share Auto/Tata Magic
g) Other_____

(If only Bus, Train & Car used as commute, please ask the reason and terminate the survey)

2.Purpose of travel? (work, college, market etc)

_____

3.On an average how much do you spend on transportation daily?

a) ₹.5 to ₹.10
b) ₹. 11 to ₹.20
c) ₹.21 to ₹. 30
d) ₹.31 to ₹.40

e) ₹.41 to ₹.50

f) ₹.51 to ₹.60

g) ₹.61 to ₹. 75

h) ₹. 76 to ₹. 100

i) ₹. 101 to ₹ 150

4.How frequently do you travel? (connect to question 2)

a) Daily

b) 5-6 times per week

c) 2 – 3 times per week

d) Once a week

e) Others

5.Is your normal route of travel?

From destination: _____

To Destination: _____

6.Modes of transport used in route of travel?

From	To	Walk	Two Wheeler	Bus	Train	Auto	Share Auto	Tata Magic

7.Rank in order of agreement?

1: Not Important 2: Neutral 3: Important

	Bus	Train	Auto	Share Auto/Tata Magic
The cost of service is reasonable				
Easily accessible to all (old/disabled people)				
Service is flexible				
I feel safe when using this service				
Vehicles are clean and well maintained				
Prompt service, on time, reliable				
Drivers are friendly and helpful				
Does a good job of getting me where I want to go				
Amenity				

8.Do you use Share Auto/Tata Magic to reach nearby bus stop or railway Station?

a.Yes

b.No

9.You had initially told you use Share Auto/Tata Magic, How frequently do you travel by them?

From	Share Auto	₹.	Tata Magic	₹.
Daily				
5-6 times per week				
2 – 3 times per week				
Once a week				
Less than once a week				

10.What time of day do you currently ply by Share Auto?

a) 8 – 10 am

b) 10 – 12 am

c) 12 – 2 pm

d) 2 – 4 pm

e) 4 – 6 pm

f) 6-8 pm

g) 8-10 pm

11.At any point did you switch from Share Auto to Tata Magic?

Yes

No

12.If, Yes/ Noplease specify the reason?

13.Main purpose to use Share Auto/Tata Magic:

Reach final destination (point to point)	
Reach a particular point and then use public transport	
Others specify	

(Do not ask question 14 if only Share Auto or Tata Magic used, ask question 14 only if the passengers uses both Share Auto and Tata Magic)

14.Factors influencing Share Auto and Tata Magic use? Choose all that applies

1 Not Important 2 Somewhat Important 3 Neutral 4 Important 5 Very Important

	Share Auto	Tata Magic
Accessibility/convenience		
Costs		
Lack of Connectivity		
Less travel time		
Flexibility		
Continuity		
Frequency		

Reliability		
Amenity (seating, comfort)		
Safety/Security		

15.How satisfied are you with the service?

	Share Auto	**Tata Magic**
a.Satisfied		
b.Neutral		
c.Dissatisfied		

16.Suggestions for improving the current Share Auto/Tata Magic service?

17.Would you prefer to have a common ticketing for your complete journey (bus, train, auto, Share Autoetc)

a.Yes

b.No

18.How much are you willing to pay per trip for any mode of transport?

₹. _____

19.Gender

a.Male

b.Female

20.Age

_____

21.Household Income (₹)

a) 0 - 15,000
b) 15,001 - 30,000
c) 30,000 - 45,000
d) 45,000 - 60,000
e) 60,000 or more

22.Segment

a) School/college Student
b) Employed/Working
c) Not employed
d) Retired
e) Other_____

Annexure 8

Comparison between the Trends in Urbanization in India and Chennai

	1971	1981	1991	2001	2011
Urbanisation in India	109.10 million	159.70 million	217.60 Million	286.10 million	377.1 million
Annual Growth Rate	----------	2.50per cent	1.91 per cent	3.72 per cent	3.18 per cent
Urbanisation in Chennai	2.46 million	3.28 million	3.84 million	4.34 million	4.68 million
Annual Growth Rate	----------	-0.27per cent	1.58 per cent	1.23 per cent	0.77 per cent

Source: CMDA and Provisional Population Data, Census of India 2011

Annexure 9 : Permit for Vikram Share auto

G.O.M.S.NO.1058, H (TR.B) dt. 17-7-97

FORM P.C.

Permit in Respect of a Particular Contract Carriage

(See Rule 171)

Regional Transport Authority
Madras (West) Madras-
R. NO. A4 / 507 / 2000

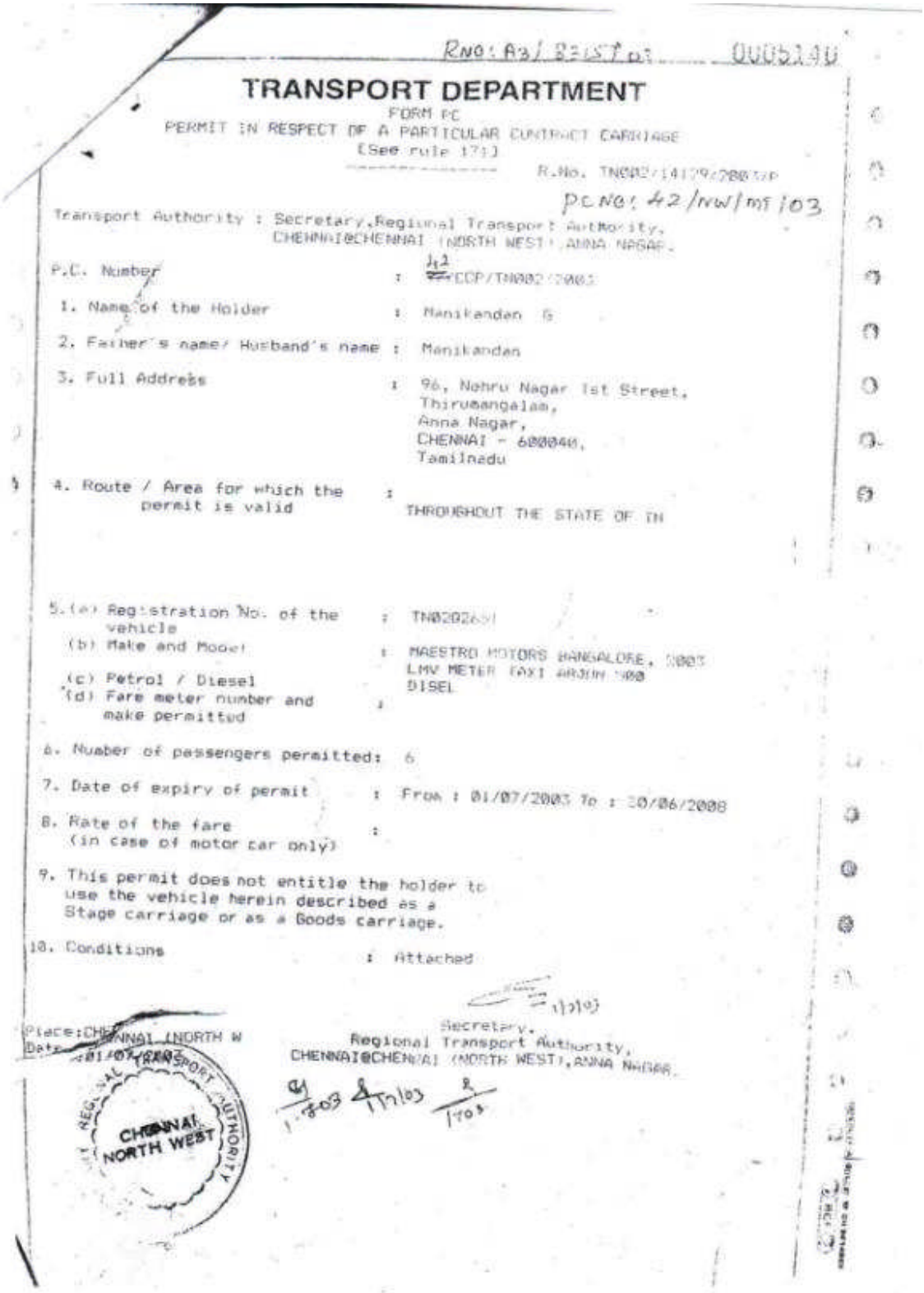
O/o. THE SECRETARY: REGIONAL TRANSPORT AUTHORITY : CHENNAI (W) : 78

P.C. NO. 3 MC/ /W/2000

Name of the holder	:	Thnt V.GLORY,
Father's Name / Husband's name	:	W/o. Vin..t
Full Address	:	No.4A, North Usman Road, T.Nagar, Chennai 600 017.
Route / Area for which the permit is valid	:	To ply on all roads in Chennai Metropolitan areas except those prohibited
a) Registration No.	:	TN 09/Q 2608
b) Make & Model	:	VIKRAM MOTOR CAB Scooters India Ltd. 1999
c) Petrol / Diesel	:	Diesel
d) Fare meter No. & make permitted	:	
Number of passengers permitted	:	S IX in all
Date of expiry of permit	:	From 27-1-2000 To 26-1-2005
Rate of fare (in case of Motor cab only)	:	
This permit does not entitle the holder to use the vehicle herein described as a Stage Carriage or as a Good Carriage		
Conditions	:	list attached

SECRETARY, RTA, CHENNAI (WEST)
Regional Transport Authority
Madras (West) Madras-

Annexure 10 : Permit of Arjun Auto



R.No: A3/ REGISTER 0005140

TRANSPORT DEPARTMENT

FORM PC

PERMIT IN RESPECT OF A PARTICULAR CONTRACT CARRIAGE

(See rule 171)

R.No. TN02/1417/2003

PC No: 42/NW/MS/03

Transport Authority : Secretary, Regional Transport Authority, CHENNAI@CHENNAI (NORTH WEST), ANNA NAGAR.

P.C. Number : CCP/TN02/2003

1. Name of the Holder : Manikandan S

2. Father's name/ Husband's name : Manikandan

3. Full Address : 96, Nehru Nagar 1st Street, Thirumangalam, Anna Nagar, CHENNAI - 600040, Tamilnadu

4. Route / Area for which the permit is valid : THROUGHOUT THE STATE OF TN

5. (a) Registration No. of the vehicle : TN02Z6591

(b) Make and Model : MAESTRO MOTORS BANGALORE, 2003 LMV METER TAXI ARJUN 2003

(c) Petrol / Diesel : DISEL

(d) Fare meter number and make permitted :

6. Number of passengers permitted: 6

7. Date of expiry of permit : From : 01/07/2003 To : 30/06/2008

8. Rate of the fare (in case of motor car only) :

9. This permit does not entitle the holder to use the vehicle herein described as a Stage carriage or as a Goods carriage.

10. Conditions : Attached

Place: CHENNAI (NORTH W

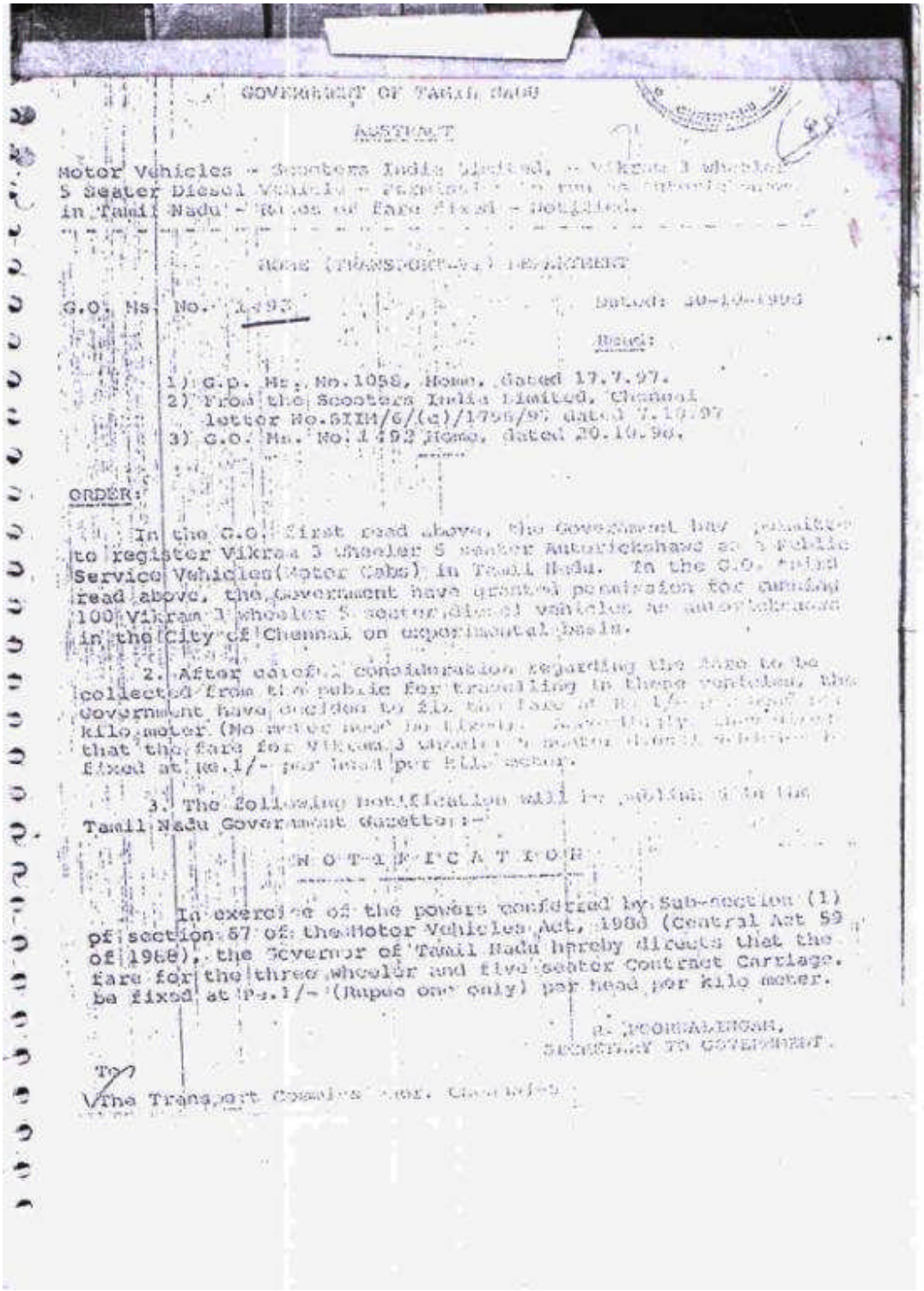
Date: 01/07/2003

Secretary,
Regional Transport Authority,
CHENNAI@CHENNAI (NORTH WEST), ANNA NAGAR.

CHENNAI NORTH WEST

1.7.03 & 1.7.03 1.7.03

Annexure 11: Notification letter allowing for share auto permits



GOVERNMENT OF TAMIL NADU

ABSTRACT

Motor Vehicles - Scooters India Limited, - Vikram 3 wheeler 5 Seater Diesel Vehicle - registered in this as Public Service in Tamil Nadu - Rates of Fare fixed - Notified.

HOME (TRANSPORT-V) DEPARTMENT

G.O. Ms. No. 1492 Dated: 20-10-1998

Read:

1) G.O. Ms. No.1058, Home, dated 17.7.97.
2) From the Scooters India Limited, Chennai letter No.SIM/6/(c)/1756/97, dated 7.10.97
3) G.O. Ms. No. 1492 Home, dated 20.10.98.

ORDER:

In the G.O. first read above, the Government have permitted to register Vikram 3 wheeler 5 seater Autorickshaws as Public Service Vehicles(Motor Cabs) in Tamil Nadu. In the G.O. third read above, the Government have granted permission for operating 100 Vikram 3 wheeler 5 seater diesel vehicles as auto rickshaws in the City of Chennai on experimental basis.

2. After careful consideration regarding the fare to be collected from the public for travelling in these vehicles, the Government have decided to fix the fare at Rs.1/- per head per kilo meter (No meter need be fixed). Accordingly they direct that the fare for Vikram 3 wheeler 5 seater diesel vehicles be fixed at Re.1/- per head per kilo meter.

3. The following notification will be published in the Tamil Nadu Government Gazette:-

NOTIFICATION

In exercise of the powers conferred by Sub-section (1) of section 67 of the Motor Vehicles Act, 1988 (Central Act 59 of 1988), the Governor of Tamil Nadu hereby directs that the fare for the three wheeler and five seater Contract Carriage be fixed at Rs.1/- (Rupee one only) per head per kilo meter.

P. PONNAIYAN,
SECRETARY TO GOVERNMENT.

To

The Transport Commissioner, Chennai-5

GOVERNMENT OF TAMILNADU

ABSTRACT

Motor vehicles-Autorickshaws-3 wheeler with 5 seater vehicles -Issue of Autorickshaw permits to run in the districts and Chennai city-orders-Issued.

HOME (TRANSPORT VI) DEPARTMENT

G.O.Ms.No.277; Dated:22.3.2001.

Read:-

1. G.O.Ms.No.1492, Home dated 30.10.90
2. G.O.Ms.No.1493, Home dated 30.10.98

Read also:-

3. From the Transport Commissioner, Chennai, Letter No. H3/99743/2000, dated 14.10.2000.

ORDER:

In the G.O. first read above, the Government permitted the plying of 100 five seater autos (Vikram) in Chennai City manufactured by Scooters India Limited, a Government of India Enterprise. The Transport Commissioner, Chennai in his letter third read above has recommended that 50 more permits for 5 seater autos may be given to each Regional Transport Office, in Chennai and 50 each for district head quarters considering the public need. The Commissioner of Police has also agreed to the proposal of the Transport Commissioner.

2. The Government have examined the proposal of Transport Commissioner. They consider that as far as Chennai City is concerned, it would be sufficient if another 100 five seater Autos are permitted instead of permitting 50 additional autos for each Regional Transport Office in Chennai City. However, in respect of district headquarters, 50 five seater Autos can be permitted as recommended by Transport Commissioner. Accordingly, the Government direct that 100 additional auto permits for 5 seater autos in Chennai city and 50 each for other Regional Transport Offices in district head quarters be allowed. The Transport Commissioner is requested to take suitable action accordingly.

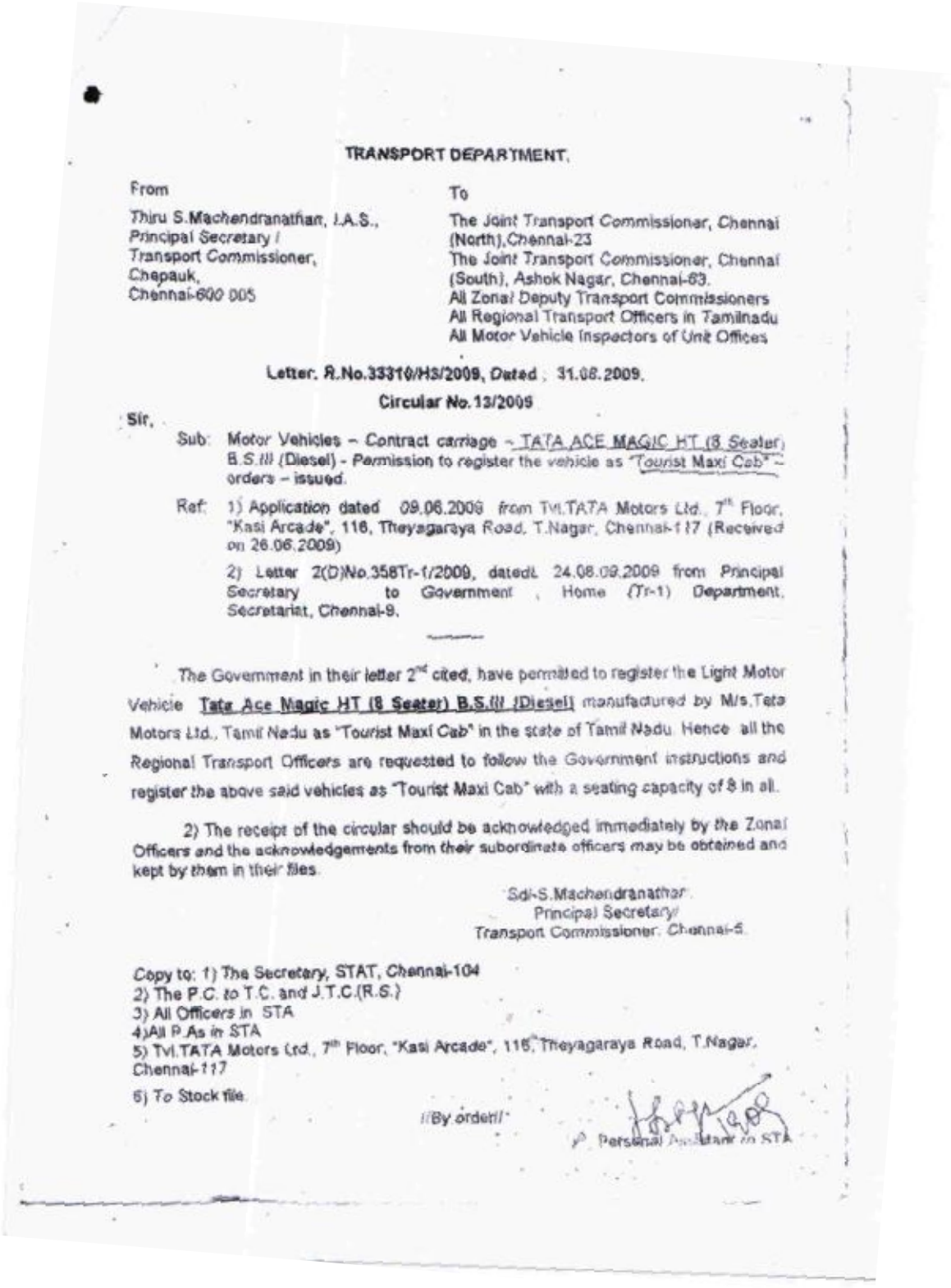
(BY ORDER OF THE GOVERNOR)

SANTHA SHEELA NAIR,
SECRETARY TO GOVERNMENT

To
The Special Commissioner and Transport Commissioner, Chennai-5.

FORWARDED: BY ORDER

Annexure 12: Permit allowing of Tata Magic Ace



TRANSPORT DEPARTMENT.

From

Thiru S.Machendranathan, I.A.S.,
Principal Secretary /
Transport Commissioner,
Chepauk,
Chennai-600 005

To

The Joint Transport Commissioner, Chennai (North),Chennai-23
The Joint Transport Commissioner, Chennai (South), Ashok Nagar, Chennai-83.
All Zonal Deputy Transport Commissioners
All Regional Transport Officers in Tamilnadu
All Motor Vehicle Inspectors of Unit Offices

Letter. R.No.33310/H3/2009, Dated : 31.08.2009.

Circular No.13/2009

Sir,

Sub: Motor Vehicles – Contract carriage – TATA ACE MAGIC HT (8 Seater) B.S.III (Diesel) - Permission to register the vehicle as "Tourist Maxi Cab" – orders – issued.

Ref: 1) Application dated 09.06.2009 from Tvl.TATA Motors Ltd., 7th Floor, "Kasi Arcade", 116, Theyagaraya Road, T.Nagar, Chennai-117 (Received on 26.06.2009)

2) Letter 2(D)No.358Tr-1/2009, dated: 24.08.09.2009 from Principal Secretary to Government , Home (Tr-1) Department, Secretariat, Chennai-9.

The Government in their letter 2nd cited, have permitted to register the Light Motor Vehicle Tata Ace Magic HT (8 Seater) B.S.(II (Diesel) manufactured by M/s.Tata Motors Ltd., Tamil Nadu as "Tourist Maxi Cab" in the state of Tamil Nadu. Hence all the Regional Transport Officers are requested to follow the Government instructions and register the above said vehicles as "Tourist Maxi Cab" with a seating capacity of 8 in all.

2) The receipt of the circular should be acknowledged immediately by the Zonal Officers and the acknowledgements from their subordinate officers may be obtained and kept by them in their files.

Sd/-S.Machendranathar
Principal Secretary/
Transport Commissioner, Chennai-5.

Copy to: 1) The Secretary, STAT, Chennai-104
2) The P.C. to T.C. and J.T.C.(R.S.)
3) All Officers in STA
4)All P.As in STA
5) Tvl.TATA Motors Ltd., 7th Floor, "Kasi Arcade", 116, Theyagaraya Road, T.Nagar, Chennai-117
6) To Stock file.

//By order//

Personal Assistant to STA

Annexure 12: Bharat Stage IV norms in Chennai

Government of India
Ministry of Road Transport & Highways

Transport Bhawan,
1, Parliament Street,
New Delhi-110001.

No. RT-11011/11/2009/MVL Dated the 28th May, 2010

To

The Principal Secretary (Transport) of all States/UTs except Maharashtra and Tamil Nadu.
The Principal Secretary (Home), Government of Maharashtra and Tamil Nadu.
Transport Commissioners of all States/UTs.

Subject: Applicability of emission norms for registration of motor vehicles.

Sir,

As you are aware, vide notification number G.S.R. 84 (E) dated 9th November, 2009, the Government had notified the applicability of Bharat Stage-III and Bharat Stage-IV norms for different categories of motor vehicles in various parts of the country. Keeping in view some unforeseen circumstances, certain provisions of rule 115 of the central Motor vehicles Rules, 1989 have again been amended vide notification number G.S.R. 443 (E) dated 21st May, 2010. A copy of the same is available on the web-site of this Ministry.

2. Now with the amendments having been carried out in the rules, the position with regard to applicability of emission norms for registration of motor vehicles in different parts of the country is as under:-

(a) Bharat Stage-III emission norms shall be applicable

(i) in the National Capital Region and the cities of Mumbai, Kolkata, Chennai, Bangalore, Hyderabad including Secunderabad, Ahmedabad, Pune, Surat, Kanpur, Agra, Sholapur and Lucknow in respect of two and three wheeler vehicles manufactured on or after 1st April, 2010.
(ii) in the rest of the country in respect of two and three wheeler vehicles manufactured on or after 1st October, 2010.
(iii) in all the States/UTs except the National Capital Region and the cities of Mumbai, Kolkata, Chennai, Bangalore, Hyderabad including Secunderabad, Ahmedabad, Pune, Surat, Kanpur, Agra, Sholapur and Lucknow in respect of four wheeler vehicles manufactured on or after 1st October, 2010.

(b) Bharat Stage-IV emission norms shall be applicable

(i) in the National Capital Region and the cities of Mumbai, Kolkata, Chennai, Bangalore, Hyderabad including Secunderabad, Ahmedabad, Pune, Surat, Kanpur and Agra in respect of four wheeler vehicles manufactured on or after 1st April, 2010.

(ii) in Sholapur and Lucknow in respect of four wheeler vehicles manufactured on or after 1st June, 2010.

(3) It has been brought to the notice of the Government that some confusion prevails in some parts of the country with regard to registration of motor vehicles. It may be noted that the emission norms apply to a vehicle, manufactured on or after a certain date and not with effect from the date on which it is registered. The following may, therefore be kept in view while registering a motor vehicle:

(i) Bharat Stage-III compliant four wheeler vehicles, manufactured up to 31st March, 2010 would be eligible for registration in the National Capital Region and the cities of Mumbai, Kolkata, Chennai, Bangalore, Hyderabad including Secunderabad, Ahmedabad, Pune, Surat, Kanpur and Agra till the accumulated stock is exhausted.

(ii) Bharat Stage-III compliant four wheeler vehicles, manufactured up to 31st May, 2010 would be eligible for registration in Sholapur and Lucknow till the accumulated stock is exhausted.

(iii) Bharat Stage-II compliant four wheeler vehicles, manufactured up to 31st September, 2010 would be eligible for registration in the country except the National Capital Region and the cities of Mumbai, Kolkata, Chennai, Bangalore, Hyderabad including Secunderabad, Ahmedabad, Pune, Surat, Kanpur, Agra, Sholapur and Lucknow till the accumulated stock is exhausted.

(iv) Bharat Stage-II compliant two and three wheeler vehicles, manufactured up to 31st March, 2010 would be eligible for registration in the National Capital Region and the cities of Mumbai, Kolkata, Chennai, Bangalore, Hyderabad including Secunderabad, Ahmedabad, Pune, Surat, Kanpur, Agra, Sholapur and Lucknow till the accumulated stock is exhausted.

(v) Bharat Stage-II compliant two and three wheeler vehicles, manufactured up to 31st September, 2010 would be eligible for registration in the rest of the country till the accumulated stock is exhausted.

(4) You may obtain the details of all the vehicles that are in the accumulated stock of the concerned dealers/manufacturers and issue guidelines to all the registering authorities to follow the principles enumerated in para (3) above.

(Saroj Kumar Dash)
Joint Secretary to the Government of India
Tel: 23717294

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