A ROAD TRAFFIC STUDY ON COIMBATORE CITY – WITH SPECIAL REFERENCE TO SARAVANAMPATTI – THUDIYALUR STATE HIGHWAY

A PROJECT REPORT

Submitted

by

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COIMBATORE

BONAFIDE CERTIFICATE

Certified that this project titled **"A ROAD TRAFFIC STUDY ON COIMBATORE CITY – WITH SPECIAL REFERENCE TO SARAVANAMPATTI – THUDIYALUR STATE HIGHWAY"** is the bonafide work of **Mr. P. RAJESH KUMAR** who carried out this project under my supervision. Certified further, that to the best of my knowledge the work reported herein does not from part of any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

Director **Faculty Guide**

Evaluated and viva-voce conducted on .....01.11.2008.....

Examiner I **Examiner II**

DECLARATION

I hereby declare that the dissertation entitled **"A ROAD TRAFFIC STUDY ON COIMBATORE CITY – WITH SPECIAL REFERENCE TO SARAVANAMPATTI – THUDIYALUR STATE HIGHWAY"** submitted for the MASTER OF BUSINESS ADMINISTRATION degree is my original work and the dissertation has not formed the basis for the reward of any Degree, Associateship, Fellowship or any other similar titles.

Signature of the student

With date

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EXECUTIVE SUMMARY:

As IT industries booming in our country, many foreign investments started to flow in our country. It also results in existence of many multinational companies. But, this will occur in a slow pace which is mainly due to the poor infrastructure facilities of our country. We do not have proper roads which connects all parts of our country. It affects foreign investment in our country. Therefore our government wants to take proper steps to develop the infrastructure which results in the inflow of foreign investments which made our country as an economically strong nation.

As an initiative we took this project to study, analyze and interpret the Saravanampatti to Thudiyalur state highway. This highway is highly congested because of the presence of many IT industries, educational institutions & other construction sites. Sometimes major accidents are also happening in this road. Therefore we have chosen this road for our research study.

We first divided the road as three junctions namely, Thudiyalur, Vellakinar and Saravanampatti. We segregated ourselves in to three groups and then we measured the breadth of the road and we studied the road conditions like turnings, path holes, etc. After that we counted the vehicles that passed in the road at peak hours and other regular hours. We considered all type of vehicles in our count. We also made a study on the traffic stagnation at the railway level crossing. Then we collected data through interview method from the respondents who are the users of the road. Based on this data we made analysis.

SPSS tools are used to enhance the accuracy of our research study. Statistical tools like chi- square analysis and percentage analysis are used to analyze the data. Chi – square analysis is used to check how one variable influence the other. It helps in clear interpretation of the qualitative and quantitative information from the data collected.

This study relies on both the primary and secondary data. Primary data is collected through interview method and secondary data is collected through journals, magazines and World Wide Web.

The sample size is 300. Area sampling technique is used in this study. It is a form of cluster sampling within an area which comes under probability sampling method. It is less expensive than most of the probability sampling designs and is not dependant on a population frame.

The main objective of this study is to give measures to improve the road conditions and proper flow of vehicular traffic in this road. Our findings are;

Drivers used this road for business, education, construction and other purposes, pedestrians suggest to cover the road with metal, breadth of the road influencing the speed of the vehicles, truck drivers are satisfied about the present road conditions, vehicles speed varies on the peak hours and other hours, majority of respondents said that traffic signal is highly essential on sakthi road junction, majority of respondents feel that travelling speed of vehicles are high in this road.

Thus, this study will give a proper view about the Saravanampatti – Thudiyalur road to the government and it also suggests measures to improve the road condition and regulate the traffic in this road during peak hours.

CHAPTER – 1

NTRODUCTION:

1.1) Background of the study:

In the present scenario, Coimbatore which is called as Manchester of South India is slowly creeping towards the rank of metropolitan in the country. It is one of the fastest growing cities in our country. At the same time vehicular traffic is also increasing in a considerable manner. Though Coimbatore did not possess very good infrastructure facilities, present traffic conditions did not make any huge congestion in traffic. But it will be going to be a tough job for upcoming years.

In particular, Saravanampatti area is now gaining high importance in a swift manner. It has a very high growth rate which could not be imaginable. The real estate value of this area is still very high when compared with the other major areas of the city. Beyond that, existence of many IT industries like CTS, KGISL, etc., will make this area as a developing one in the city. This locality will also comprise of four colleges namely, KCT, KGCAS, SANKARA, SNS ARTS & SCIENCE COLLEGE. These factors made this road as a high traffic one. More than that Cognizant Technological Solutions is constructing their own building covering large area of land next to this village and SAHARA also constructing a big city which covers nearly 150 acres of land, which also made this road to have a heavy traffic.

The total distance of the Saravanampatti – Thudiyalur road is 9 kms and first the breadth of the road was measured. Then the part covered with Black tar and remaining part covered with mud was measured. After that the number of path holes and dangerous turnings in the path of the road were counted. Number of lamp posts present in the road which will be remain as threat to the drivers and other users of the road were also measured. Then, total number of speed breakers and bridges present in the road were counted. After this, the number of vehicles crossing the road during peak hours and other regular hours were counted. Vehicles include all types of four wheelers, trucks and two wheelers. Then the data collected through interview method from the respondents and based on that the analysis was done.

1.2) Review of Literature:

Smit R., Brown A.L., Chan Y.C (2008)[1] in their article said that road transport emission and fuel consumption models are currently used extensively to predict levels of air pollution along roadway links and networks. This paper examines how, and to what extent, models which are currently used to predict emissions and fuel consumption from road traffic include the effects of congestion. A classification framework is presented in which a key factor, driving pattern, connects emissions to congestion. Prediction of the effects of different driving patterns in emission models is generally restricted to certain aspects of modelling, i.e. hot-running emissions of regulated pollutants. As a consequence, the effects of congestion are only partially incorporated in the predictions. The majority of emission models explicitly incorporate congestion in the modelling process, but for one important

[1] Smit R., Brown A.L., Chan Y.C, Environmental Modelling & Software; Oct2008, Vol. 23 Issue 10/11, p1262-1270, 9p

family of emission models, namely average speed models, this could not be determined directly. Re-examination of the driving patterns on which three average speed models are based, shows that it is likely that congestion is represented in these patterns. Since emission factors are based on these patterns, this implies that the emission factors used in these emission models also reflect different levels of congestion. Congestion is thus indirectly incorporated in these models. It is recommended, that, in order to get more accurate emission predictions and to achieve correct application in particular situations, it is important to improve current average speed models by including a congestion algorithm, or alternatively, at least provide information on the level of congestion in the driving patterns on which these models are based and recommendations on what applications the models are suitable for.

Richard.J. Gibbens, Yunus Saatci (2008)[2] said that they study UK road traffic data and explore a range of traffic modelling and questions that arise from that data. They kept loop detectors on the M25 motorway to record speed and flow measurements at regularly spaced locations as well as the entry and exit lanes of junctions in highways. An exploratory study of these data helps us to better understand and measure the nature of congestion on the road network. From a traveller's perspective it is crucially important to understand the overall journey times and they look at methods to improve the ability to predict journey times. This paper will comments on related work derived from US freeway data.

[2] Richard.J. Gibbens, Yunus Saatci, Philosophical Transactions: Mathematical, Physical & Engineering Sciences; Jun2008, Vol. 366 Issue 1872, p1907-1919, 13p

Relief from motorway congestion (2004)[3] article relates the British transportation associations to relieve traffic congestion in Great Britain in August 2004. A joint notice from the AA Motoring trust, British Chambers of Commerce, CBI, Freight transport Association, RAC Foundation and the Road Haulage Association has announced that an extra lane just 12 feet wide would relieve congestion on Britain roads. Britain have a fifth of all road traffic and are also the safest roads. But some parts of them are severely congested, causing problems to the distribution of goods and services and this creates diversion of traffic on to less suitable routes. Roads in Britain carry 64% of all freight and 92% of passenger traffic.

In October 2003[4], Parliament's Transport Select Committee of England undertook a short study to urban charging schemes intended to reduce road traffic congestion. The Committee's aim was to consider several different urban charging schemes and congestion charging scheme to be introduced into central London, England. Among the issues raised in the Institute's response were the main benefit of this scheme is to reduce congestion, which can be measured in terms of traffic speeds and time savings.

Kapski, Leonovich (2008)[5] in their article describes the questions of experimental researches in road traffic and alternatives for the implementation of the experiment. Some results are given from the research of the main parameter - volume of traffic flows. The problems of collecting data on the parameters of traffic flow have been studied by many

[3] Logistics & Transport Focus; Jul/Aug2004, Vol. 6 Issue 6, 13P

[4] Logistics & Transport Focus; Dec2002, Vol. 4 Issue 10, p77-77, 0p URBAN CHANGING SCHEMES

[5] Kapski, Leonovich, Baltic Journal of Road & Bridge Engineering; Jun2008, Vol. 3 Issue 2, p101-108, 8p

researchers. In this article authors also tried in a certain way to enlighten a number of questions related to the implementation and planning of experimental researches.

Peltzer, Renner, Walter (2004) [6] the aim of their study was to investigate the psychosocial consequences and coping strategies among accident victims in South Africa. Participants who had been involved in a road traffic accident were approached and interviewed in public places. In both groups the median age group was between 25 years and 34 years. In 34 accidents a family member was killed, in 68 accidents a non-family member was killed in the accident. In 272 accidents 197 persons were injured and 168 were hospitalized. Eighty-seven drivers did not perceive themselves at fault and 51 did. Following the road traffic accident both drivers and passengers showed a significant decline of their well-being. Drivers who perceived themselves to be at fault did not cope better than those not perceiving themselves at fault. Passengers related to the drivers showed more decline in their well-being than those not related. In the passengers group, holding the driver or others responsible led mediated by increased self-blame, feelings of guilt, and family distress to lower psychological well-being. Findings have relevant implications for the development of coping strategies to aid victims of road traffic accidents in dealing with their trauma in this African context, which may differ to those in Western societies.

Lyons, Ronan A. Ward, Heather (2008)[7] they said that accurate information on the incidence of serious road traffic casualties is needed to plan and evaluate prevention strategies. This study investigates the extent to which understanding of trends in serious

[6] Peltzer, Renner, Walter, Accident Analysis & Prevention; May2004, Vol. 36 Issue 3, p367, 8p

[7] Lyons, Ronan A. Ward, Heather, Accident Analysis & Prevention; Jul2008, Vol. 40 Issue 4, p1406-1410, 5p

road traffic injuries is aided by the use of multiple datasets. Health and police datasets covering all or part of Great Britain from 1996–2003 were analysed. There was a significantly decreasing trend in police reported serious casualties but not in the other datasets. Multiple data sources provide a more complete picture of road traffic casualty trends than any single dataset. Increasing availability of electronic health data with developments in anonymised data linkage should provide a better platform for monitoring trends in serious road traffic casualties.

Sandrock, Stephan, Griefahn, Barbara (2008)[8] they said that acute annoyance due to noise from trains and buses was ascertained and compared in two experimental studies. First, 22 healthy young person's using a standardised scale, rated their annoyance caused by noise from trains, buses and trucks, which were each presented at seven sound levels. The noise of a train was judged to be equally annoying as the noise of a bus, which corresponds to the calculated loudness difference. The second study was conducted with 60 healthy young persons. Twenty participants were each exposed either to the scenario with the train or the bus or to a control condition while working on different mental tasks. Performance data did not differentiate between the noise conditions, but the participants were again less annoyed by the scenario with the tram, suggesting a possible bonus for the train. This assumption has to be verified in future studies. The fact that calculated loudness could predict annoyance in the psychoacoustic tests and this annoyance due to the same noises presented in complex scenarios might indicate the possibility of a more economical approach, at least to noises between which loudness differs greatly.

[8] Sandrock, Stephan, Griefahn, Barbara, Journal of Sound & Vibration; Jun2008, Vol. 313 Issue 3-5, p908-919, 12p

Bottani, Eleonora & Rizzi, Antonio (2007)[9] they introduces an analytical methodology to estimate the "potential" huge traffic volume that could be attracted by an intermodal terminal. The "potential volume" is understood to be the local road traffic share that is likely to be diverted from road to rail-road intermodality. The methodology is particularly tailored for the design and the location of a new rail-road intermodal structure. However, it could be usefully adopted either to assess the performances of an existing one, or in supporting expansion investments. The model requires huge flows of the region as input data. The output consists of the potential volume that could be attracted by the intermodal terminal. Outcomes are computed by means of an appropriate "affinity index", which strives to quantify the aptitude of huge road flows to be managed through rail-road intermodal transportation, assessing the likelihood of a mode shift from road haulage to intermodality. The methodology is then tested and validated through a real case application, referring to a major Italian intermodal terminal.

Kato, Yuichi Hayashi, Takashi & Kitagawa, Tamotsu (2006)[10] they measured and record road traffic sound levels during a long time interval. Such sounds include those produced by horns, sirens, animals, construction sites. The detection of sound requires much time and effort. This proposes a practical detection method of these extraneous sounds by deriving a necessary condition those road traffic sound levels must satisfy. The condition provides an easy method of identifying sound levels not satisfying the condition, and distinguishes them

[9] Bottani, Eleonora & Rizzi, Antonio International Journal of Logistics: Research & Applications; Mar2007, Vol. 10 Issue 1, p11-28, 18p

[10] Kato, Yuichi Hayashi, Takashi & Kitagawa, Tamotsu Applied Acoustics; Oct2006, Vol. 67 Issue 10, p1009-1021, 13p

as extraneous abnormal sounds, even in a large volume of observed data. The validity and usefulness of this method are confirmed by application to actually observed data.

Lian, Jon Inge (2008)[11] in their study they discuss that when the toll rings around Bergen and Oslo were established in 1986 and 1990, respectively, they were part of major schemes to speed up road investments. In Oslo, 20% of the revenue was allocated for investments in public transport, while in Bergen, third the size of Oslo, investments were exclusively for road transport. This article focuses on how city size and public transport policy may influence effects of infrastructure investments on car traffic development and congestion. Oslo, having one million inhabitants, experienced moderate growth in car traffic, and public transport traffic volumes experienced a stronger growth than the national average. Still, congestion levels were only slightly changed. The smaller city Bergen, however, experienced a strong increase in car traffic and a strong decrease in public transport traffic. Despite the strong growth in car traffic, increased road capacity still seems to have resolved congestion problems.

Iwanowski, Sebastian & Spering (2003)[12] suggests to use market-based techniques for road traffic coordination. In particular, the question is addressed how to make it more attractive for traffic individuals to follow the suggestions. The amount of payment is determined by a predefined electronic trading procedure in which each driver participates by an automated software unit representing the individual driver's intentions. Compared to traditional traffic demand management systems, market-based techniques are expected to

[11] Lian, Jon Inge , Journal of Transport Geography; May2008, Vol. 16 Issue 3, p174-181, 8p

[12] Iwanowski, Sebastian & Spering Transportation Research: Part C; Oct2003, Vol. 11 Issue 5, p405, 18p

have a higher degree of flexibility and adaptability. Another advantage is that market-based techniques are independent of a prior set-up of traffic models and analyses.

Toroyan, T. (2007) [13] his article offers news briefs related to the World Health Organization (WHO) in 2007. The road traffic injury prevention program of WHO received a $9 million grant from the Bloomberg Foundation. Mexico and Vietnam will campaign for the increase use of motorcycle helmets, seat belts, and child restraints, reduce drink driving, and improve visibility of vulnerable road users. The Global Road Safety Status Report aims to assess the status of road safety in all WHO's Member States.

Fernández-Caballero, Antonio Gómez (2008)[14] they presents a visual application which allows a study and analysis of traffic behavior on major roads (more specifically freeways and highways), using as the main surveillance video camera mounted on a relatively high place (such as a bridge) with a significant image analysis field. The system described presents something new which is the combination of both traditional traffic monitoring systems, that is, monitoring to get information on different traffic parameters and monitoring to detect accidents automatically. Therefore, we present a system in charge of compiling information on different traffic parameters. It also has a surveillance module for that traffic, which can detect a wide range of the most significant incidents on a freeway or highway.

[13] Toroyan, T. Injury Prevention; Dec2007, Vol. 13 Issue 6, p431-431, 0p

[14] Fernández-Caballero, Antonio Gómez Expert Systems with Applications; Oct2008, Vol. 35 Issue 3, p701-719, 19p

Anjaneyulu, Y Jayakumar, I. Bindu, V. Hima Sagareswar, G. Mukunda Rao, P. V. Ramani, K. V (2007)[15] they highlights the application of an integrated decision support system for calculation of environmental friendly traffic flows in urban networks under different management strategies. Each proposed alternative is evaluated using a GIS and GPS environment that may, on a local basis, affect the environmental burden and contribute to pollution load in the region. For each link of the network an environmental capacity is calculated, taking into consideration the hydrodynamic theory based traffic flow dependent on the length of the road network and the average traffic volume and speed. The studied management options include: modifying the existing road network; road widening activities; bus bay relocation; rescheduling the work activities; parking management. The integrated transportation decision support system offers entirely new way of using the GIS, GPS and field survey data for model calculation of pollution load from road traffic to devise environmentally friendly traffic flows.

Eastman, R. Miles, Mice J. C. Wilkinson, J. (2004)[16] they reports work done three years ago for the Highways Agency in England to stimulate long-term thinking about how to develop and operate the strategic highway network in the UK. The effects of road traffic are becoming a critical problem throughout the world, and without some radical solutions the situation is forecast to get worse. Problems such as traffic congestion, global warming and

[15] Anjaneyulu, Y Jayakumar, I. Bindu, V. Hima Sagareswar, G. Mukunda Rao, P. V. Ramani, K. V International Journal of Environment & Pollution; 2007, Vol. 29 Issue 4, p75-89, 15p

[16] Eastman, R. Miles, Mice J. C. Wilkinson, J. Transport; Nov2004, Vol. 157 Issue 4, p203-210, 8p

how to achieve sustainability are politically sensitive yet require positive action. Innovative thinking is needed now to develop solutions and actions that are good for the long term. The Highways Agency in its role as network operator is responsible for managing, maintaining and improving the strategic road network in England-over 8000 km of motorways and trunk roads. In a bid to look beyond the usual 5-10 year planning cycle, the Highways Agency commissioned the Vision 2030 Project. Visioning techniques and innovative thinking were used to develop several possible scenarios and propositions for the long-term future of inter-urban transport. These transport visions have influenced the Highways Agency in developing suitable action plans to achieve the desired levels of service for users of the strategic road network, against a changing and challenging background.

Ramos, Pilar Díez, Elia Villalbí, Joan R. (2008)[17] they investigate young people's perceptions, in Barcelona, Spain, about the evolution, causes and determinants of traffic crashes, to describe their opinions on road safety regulations, and to explore their suggestions and proposals. Interviews were conducted with 43 key informants and 12 focus groups involving 98 participants. Discussion guides were designed to get insight on perceptions of relevance and trends in road traffic injuries, determinants of these, regulations and enforcement, as well as to gather their own ideas for reducing traffic injuries. Young people are aware that traffic injuries are a relevant and increasingly serious problem. The main determinants identified are: driving under the influence of drugs and alcohol, fatigue, night driving, unsafe infrastructures, age of drivers and lack of public transport alternatives. Young people admit that fines, speed cameras and alcohol breath testing reduce risky driving. They have a poor image of public administrations in charge of

[17] Ramos, Pilar Díez, Elia Villalbí, Joan R. Accident Analysis & Prevention; Jul2008, Vol. 40 Issue 4, p1313-1319, 7p

prevention of traffic injuries. They demand information on traffic regulations and politicians' decisions, and a considerable increase in weekend and night time public transport. Effectiveness of interventions to reduce traffic injuries can be improved by taking the recipients' perceptions into account.

1.3) Statement of the Problem:

Due to the presence of educational institutions, IT industries, construction sites in this locality the traffic flow is very high during peak hours and due to low passersby the traffic flow is considerably high during other hours also. Truck drivers also using this road regularly, to enter the city without much difficulty. Due to the above factors accident rate is increasing in this road. It also happens because, the drivers are not following the traffic rules.

Therefore I want to know the best ways to be followed to avoid traffic congestion in this road. I also want to collect the suggestions given by drivers and pedestrians to improve the road conditions to make the traffic flow easier.

1.4) Objectives of the study:

- To study the road condition of Thudiyalur – Saravanampatti road.
- To measure the breadth of the road and also the parts covered with black tar and mud.
- To study the traffic flow in this road at peak hours and other regular hours.
- To study the traffic stagnation in the railway level crossing.
- To study the views of the persons who are using this road.

- To study the problems in the road and other facilities like functioning of night lamps etc.
- To give the best suitable measures to improve the road conditions and proper flow of vehicle traffic in this road.

1.5) Scope of the Study:

This study will give full view about the condition of Saravanampatti – Thudiyalur road. This study will also present the views of the users of the road. This will aid awareness to the government to make further developments to this road.

Roads are like nerves to the country. Due to the raise of IT industries in our country we need to develop our infrastructure. In particular this locality is going to have many IT parks in the future is in need of proper infrastructure facilities which increase the flow of foreign investments that strengthen our economy. Thus, this study will become an initiative to develop the infrastructural facilities of our country.

1.6) Methodology:

1.6.1) Type of the study:

An exploratory study is undertaken since we don't have any information regarding the road conditions and traffic flow of Saravanampatti – Thudiyalur road. It also helps to obtain the views of drivers and pedestrians, and hence it has characteristics of descriptive research. The study is done within the sample size of 300 respondents interested in delineating the important variables associated with the problem; it is also called co -relational study.

1.6.2) Sample design:

Area sampling technique is used in this study. It is a form of cluster sampling within an area which comes under sampling method. Thus our research pertains to populations within identifiable geographical areas like Saravanampatti and Thudiyalur town panchayats.

Information gathered regarding the views of the people in the above said areas, which area sampling could be done. It is less expensive than most other probability sampling designs and is not dependant on a population frame (listing of all the elements in the population from which the sample is drawn).

1.6.3) Method of data collection:

The study relies on both primary and secondary data. Primary data is collected by interviewing the respondents. It would be the structured interview. Secondary is collected through journals, magazines and World Wide Web.

1.6.4) Tools for analysis:

The accuracy of the research study is enhanced by the use of statistical tools. SPSS is used for analyzing the data collected. It helps in clear interpretation of quantitative and qualitative information, in a way that is understandable. The study uses chi – square analysis to find out key factors influencing the traffic flow of Saravanampatti – Thudiyalur state highway. Percentage analyses are also used to interpret some data.

1.7) Limitations:

- The study is taken only for a particular state highway, so this is not an exhaustive study.
- Many respondents are refused to answer our questions.
- In some areas road become narrow and we do not have adequate place to park the vehicles and collect the data.
- Even pedestrians refused to give the answers.
- During peak hours the traffic flow is huge and we could miss some vehicles from our count.
- Macro analysis was done only for Tamilnadu.

CHAPTER - 2

TRAFFIC PROFILE (SARAVANAMPATTI – THUDIYALUR ROAD)

Traffic flow during peak hours and other regular hours.

- Peak hours (8 AM – 9.30 AM & 3.45 PM – 5.45 PM)
- Other regular hours (12 PM – 2 PM)

VELLAKINAR JUNCTION:

Table – 2.1 showing average no. of vehicles travelled from 8 AM – 9.30AM

Two - wheelers	Four wheelers	Lorry	Bus	Truck	Container	Tractor	Cycle	Minidoor	Auto
355	120	31	27	91	15	1	5	124	3

Table – 2.2 showing average no. of vehicles travelled from 12PM – 2 PM

Two - wheelers	Four wheelers	Lorry	Bus	Truck	Container	Tractor	Cycle	Minidoor	Auto
260	87	71	9	7	2	2	18	20	3

Table – 2.3 showing average no. of vehicles travelled from 3.45 PM – 5.45 PM

Two - wheelers	Four wheelers	Lorry	Bus	Truck	Container	Tractor	Cycle	Minidoor	Auto
329	103	24	22	79	21	2	3	112	1

SAKTHI ROAD JUNCTION:

Table – 2.4 showing average no. of vehicles travelled from 8 AM – 9.30 AM

Two - wheelers	Four wheelers	Lorry	Bus	Truck	Container	Tractor & JCB	Cycle	Minidoor	Auto
1473	345	128	3	20	1	6	138	33	49

Table – 2.5 showing average no. of vehicles travelled from 12 PM – 2 PM

Two - wheelers	Four wheelers	Lorry	Bus	Truck	Container	Tractor & JCB	Cycle	Minidoor	Auto
879	228	108	26	18	8	3		83	43

Table – 2.6 showing average no. of vehicles travelled from 3.45 PM – 5.45 PM

Two - wheelers	Four wheelers	Lorry	Bus	Truck	Container	Tractor	Cycle	Minidoor	Auto
329	103	24	22	79	21	2	3	112	1

THUDIYALUR – METTUPALAYAM ROAD JUNCTIO N:

Table – 2.7 showing average no. of vehicles travelled from 8 AM – 9.30AM

Two - wheelers	Four wheelers	Lorry	Bus	Truck	Container	Tractor & JCB	Cycle	Minidoor	Auto
1193	197	75	87	10	1	4	277	64	25

Table – 2.8 showing average no. of vehicles travelled from 12 PM – 2 PM

Two - wheelers	Four wheelers	Lorry	Bus	Truck	Container	Tractor & JCB	Cycle	Minidoor	Auto
878	140	71	32	7	1	5	125	58	24

Table – 2.9 showing average no. of vehicles travelled from 3.45 PM – 5.45 PM

Two - wheelers	Four wheelers	Lorry	Bus	Truck	Container	Tractor & JCB	Cycle	Minidoor	Auto
1193	197	75	87	10	1	4	277	64	25

TRAFFIC STAGNATION IN RAILWAY LEVEL CROSSING:

Table – 2.10 showing the average no. of vehicles stagnated in railway gate at 8.45 AM

Two - wheelers	Four wheelers	Lorry	Bus	Truck	Container	Tractor & JCB	Cycle	Minidoor	Auto
68	7	1	2	1	2	2	4	3	2

Table – 2.11 showing the average no. of vehicles stagnated in railway gate at 6.00 PM

Two - wheelers	Four wheelers	Lorry	Bus	Truck	Container	Tractor & JCB	Cycle	Minidoor	Auto
198	8	28	2	6	4	2	22	11	3

LENGTH & BREADTH OF THE STATE HIGHWAY:

Table – 2.12 showing the breadth of the State Highway.

DETAILS	BREADTH OF ROAD(in meters)
At 1 km	8.1
At 2 km	7.20
At 2.3 km	6.83
At 2.9 km (SNS COLL)	5.60
At 3.1 km(RAMAKRISHNAN COLL)	5.70
At 4 km(S BEND)	5.40
At 4.1km	5.90
At 4.8 km	5.66
At 5.1 km	5.70
At 5.3 km(S BEND)	5.14
At 5.6 km	5.35
At 5.8 km	5.80
At 6 km (JUNCTION)	5.90
At 6.3 km(T.V.C.V SCHOOL)	6.90
At 6.6 km(NARROW BRIDGE)	3.80
At 6.8 km(S BEND)	7
At 7.1 km(RAILWAY JUNCTION)	5.87
At 7.3 km(S BEND)	7.10

CHAPTER – 3

MACRO & MICRO ANALYSIS:

MACRO ANALYSIS:

TAMILNADU HIGHWAYS DEPARTENT - CITIZEN CHARTER (2004)

INTRODUCTION

This charter is the statement of commitment of the Highways Department of Government of Tamil Nadu towards the citizens of India.

OUR VISION

"To serve our customers, the road users of Tamil Nadu by providing high quality, cost effective, environmental friendly road network that is reliable and safe contributing to sustainable economic development and social well being of the state by applying innovation, best practices, appropriate technology and responsible management of internal and external resources".

OUR MISSION

Realising the need for an efficient road network for cost effective movement of men and material without which trade and industry cannot maintain a competitive edge, we dedicate ourselves to plan and implement the schemes relating to roads and bridges in a scientific and technological manner in tune with change of times. We are consciously committed to achieve the goal of providing connectivity to the rural habitations to accelerate their economic development. We resolve to protect

all roads and bridges of Highways Department and to be vigilant against unauthorised encroachments which cause hindrance to the public at large and there by ensure citizen friendly approach.

KEY ACTIVITIES

We are currently implementing the following schemes to ensure better mobility and riding comfort to the travelling public.

ROAD PROJECTS

- A massive program of relaying of 5784 Km of Government roads is in progress.
- Enhanced periodical maintenance of 730 Km of Government roads will be taken up with World Bank assistance under Tamil Nadu Road Sector Project.
- Improvements to riding quality of surface and widening and strengthening of the Government roads viz., State Highways and Major District Roads to a length of 379 Km under Central Road Fund Scheme of 2002-2003 is in progress.
- Further, Improvements to riding quality of surface and widening and strengthening of the Government roads viz., State Highways and Major District Roads to a length of 651 Km under Central Road Fund Scheme of 2003-2004 is in progress.
- Under Part – II scheme for the year 2004-2005, Improvement of 77 kms of State Highways and 122 kms of Major District Roads at a cost of Rs. 15 crores will be taken up in this year.

- Improvement of an additional 3000 Km of Other District Roads under HUDCO assistance is in progress.
- Under Traffic and Transportation improvements in Chennai Metropolitan area 28 works at a cost of Rs. 50 crores is in progress. Further, construction of ROBs, missing links and improvement of Bus Routes in Chennai Metropolitan area will be taken up in 2004-2005.
- Connectivity will be provided to 120 villages in the population group 500 – 1000 under rural roads scheme and 60 villages under special component plan scheme.
- 250 Km of roads will be improved under Bus Route improvement scheme.
- 1033 Km of Other District Roads will be improved under NABARD loan assistance scheme.

BRIDGE PROJECTS

- Construction of 150 bridges on Other District Roads for unbridged crossings at a cost of Rs.15 crores and rehabilitation of 45 bridges at a cost of Rs.10 crores will be taken up under Part – II scheme for the year 2004-2005
- Construction of 8 bridges on Other District Roads, 25 bridges under Rural Roads scheme, 10 bridges under Bus Route scheme, 5 bridges under SCP scheme and 8 bridges under CRF scheme will be taken up in 2004-2005

TRANSPARENCY

Public can obtain full information about the functioning of Department in the web site www.tnhighways.org

OUR MOTTO

We are committed to bring down the vehicle operating cost through better maintenance of roads and serve public to have easy accessibility and speedy transport between villages, inter district and inter states. The roads will be upgraded from Other District Roads to Major District Roads, Major District Roads to State Highways. Action is also being taken to upgrade the state roads to National Highways wherever they satisfy the norms.

OUR GOAL

The department will function in a time bound perspective and take quick decisions on important issues of public interest.

INSTITUTIONAL DEVELOPMENT

Institutional reforms on organization and management, core process, information system, Financial Mechanism and Regulatory context is contemplated. In principle approval of Government to the strategy has been accorded.

TAMIL NADU HIGHWAYS ACT

The Tamil Nadu Highways Act 2001 has come into force from 01-12-2002. The Tamil Nadu Highways Rules 2003 has also been framed in order to implement the Act.

INFORMATION TECHNOLOGY AND COMPUTERISATION

This department has made use of facilities like INTERNET AND E-MAIL as means of communication with updated technology. Besides, in an effort to increase the quality of output in the functional efficiency, modernisation and capacity building efforts are undertaken. Highways department will be equipped with computers from Headquarters level to the Division level.

OUR RESOLVE

- We resolve that we will receive general public as well as the contractors of the department and redress their grievances with least possible delay.
- We further resolve to understand and approach the issues and problems with warmth and courtesy.
- We affirm to act with complete integrity and devotion to duty as expected of public servants.
- We will interact with all the related beneficiaries and due credence will be given to their suggestions and we will reciprocate the feedback from the public and road users in the right spirit and initiate appropriate remedial and corrective action.

OUR EXPECTATIONS

- We expect the public, road users and the Non-Governmental organization to be objective in their appraisal of functioning of the Departmental for efficient and effective performance
- We expect them to take into account of the limitations and constraints we face. We expect them to furnish the documents in full shape and with complete information so as to achieve our goal.
- We bonafidely expect them to give full facts without withholding any information for pecuniary benefits.
- We do not expect the public and the persons involved in the functioning of the Department to approach with any inducement to delay or take a detour from our mission and motto
- It is expected that the public and the persons interested in the administrations will not try to cause delay due to the inducement or act in a way so as to side track our motto and goal. They should co-operate with the Department by not resorting to encroachments of the Departments property or roadsides and help in the speedy movement of the traffic. During removal of unauthorised encroachments by the Department, the public and the road users should come forward to extend full co-operation. We expect the road users to observe the Rules of the Road to avoid accident and co-operate with the Department in its efforts to provide Road safety.

With the vehicle population burgeoning in Tamil Nadu in the wake of resurgence in the economy, the Tamil Nadu Government has decided to upgrade nearly 6,500 km of roads as either State highways or major district roads (MDRs).

Coimbatore also stands to benefit from the order as it covers some of the high-density roads within the city.

In the order issued by the Highways Department early this month, Mr K. Allaudin, Secretary, Highways Department, stated that as Tamil Nadu was experiencing phenomenal growth in different sectors, the infrastructure in the State has to be upgraded to cope with the growth in these sectors.

UPGRADATION

The Government has decided that based on the traffic intensity and importance of the roads, certain roads might be upgraded as State highways and MDRs.

The Chief Engineer (General), Highways, had proposed the upgradation of 99 MDRs to State highways for a total length of about 1,902 km and 65 other district roads (ODRs) running to a length of about 762 km to State highways.

The proposal also included upgradation of 273 ODRs to MDRs to a length of about 3,812 km. He said his proposal has been accepted by the Government.

MPORTANCE

A significant aspect of the road upgradation proposal is that it includes a number of roads linking places of tourist and religious importance such as the Thoothukudi-Tiruchendur-Kanyakumari road, Coimbatore-Maruthamalai road and the Kodaikanal ghat road.

Among the MDRs and ODRs proposed to be upgraded as State highways include the Chennai-Pulicat road, Thiruthani-Podatturpet-Pallipet road, Tambaram-Mudichur road, Kodambakkam-Sriperumbudur road, Chennai-Ennore road, Cheyyur-Vandavasi-Polur road, Kanchipuram-Vandavasi road, Pallikonda-Palamaneri road,Villupuram-Tiruvannamalai road, Mailam-Pondy road, Kumbakonam-Karaikal road, Nagore-Vettar road, Palani-Dharapuram road (via Alangiyam), Vathalagundu-Peraiyur-T.Kallupatti road, Kodai ghat road, Attur-Perambalur road, Palladam-Kochi Frontier road, Tirupur-Somanur road, Erode-Thingalur road, Dharapuram-Tirupur road, Thoothukudi-Tiruchendur- Kanyakumari road, Cheranmahadevi-Panagudi road, Colachel-Tiruvattar road, Sattur-Sivakasi-Srivilliputtur road and Sivakasi-Kazhugumalai road.

The Government Order comes as a great relief to the residents of parts of Coimbatore, commuting from Coimbatore to Podanur through Ramanathapuram. The Government has also ordered the upgradation of North Coimbatore-Ramanathapuram-Chettipalayam road via Lakshmi Mills to a length of 18.910 km as a State highway.

The upgradation of Coimbatore-Anaikatti road also would help ensure smoother vehicular traffic.

LOCAL TRANSPORT IN TAMIL NADU:

The public transport system in Tamil Nadu consists of State government buses, private buses, taxis and auto rickshaws. There are around 200 railway stations and over 100 train services connecting the state to almost all major cities of India.

ROADS

Tamil Nadu has one of the largest networks of roads in India. A number of national Highways pass through the state. They link the state with other parts of the country. Besides the national highways, there are State highways and local roads that connect different parts of the state. The length of road network in Tamil Nadu is about 1.70 Lakh km.

VEHICLES

Almost all types of Luxury, Semi-luxury buses and tourist taxis are easily available for hire. Taxes of other States, toll tax, parking fees, Airport entry fee, ferry Charges etc is charged extra.

TAXIS

Tourist taxis are also available throughout Tamil Nadu. The tourist taxis can be hired for intra as well as interstate transportation. There are options of hiring self-driven or Chauffeur driven car.

AUTO RICKSHAWS

For local city/town transportation auto rickshaws are easily available in almost all major towns and cities.

LOCAL BUS SERVICES

Tamil Nadu State Transport Corporation and Private Operators operate local bus services at regular intervals, connecting most places in Tamilnadu.

RAILWAYS

Tamil Nadu has a well-developed network of about 6,693 km and there are 690 railway stations in the state. The main Rail junctions in the State are Chennai, Madurai, Salem, Tiruchirapalli and Coimbatore.

AVIATION

Tamil Nadu is well connected with other parts of India and the world by air network. Airports are located at Chennai, Madurai and Tiruchchirappalli.

PORTS

Since Tamil Nadu has a long coast, the shore is lined with numerous minor and major ports. Some of the Seaports in Tamil Nadu are Chennai, Tuticorin, Cuddalore and Nagapattinam.

CUSTOMERS PERCEPTION OF HIGHWAYS DEPARTMENT PERFORMANCE:

Awareness on the Highways Department

Table – 3.1 respondents were asked as to which department is responsible for maintenance and improvement of different roads in Tamil Nadu.

Department responsible	NH%	SH%	MDR%	ODR%	VR%
HD	43	22	12	12	3
NHAI	1	1	1	1	-
State Government	9	59	40	29	15
Central Government	41	8	9	5	3
Panchayat / Municipality	-	-	27	34	72
Don't know	5	9	11	17	7

Awareness on road maintenance/improvement schemes (Table – 3.2)

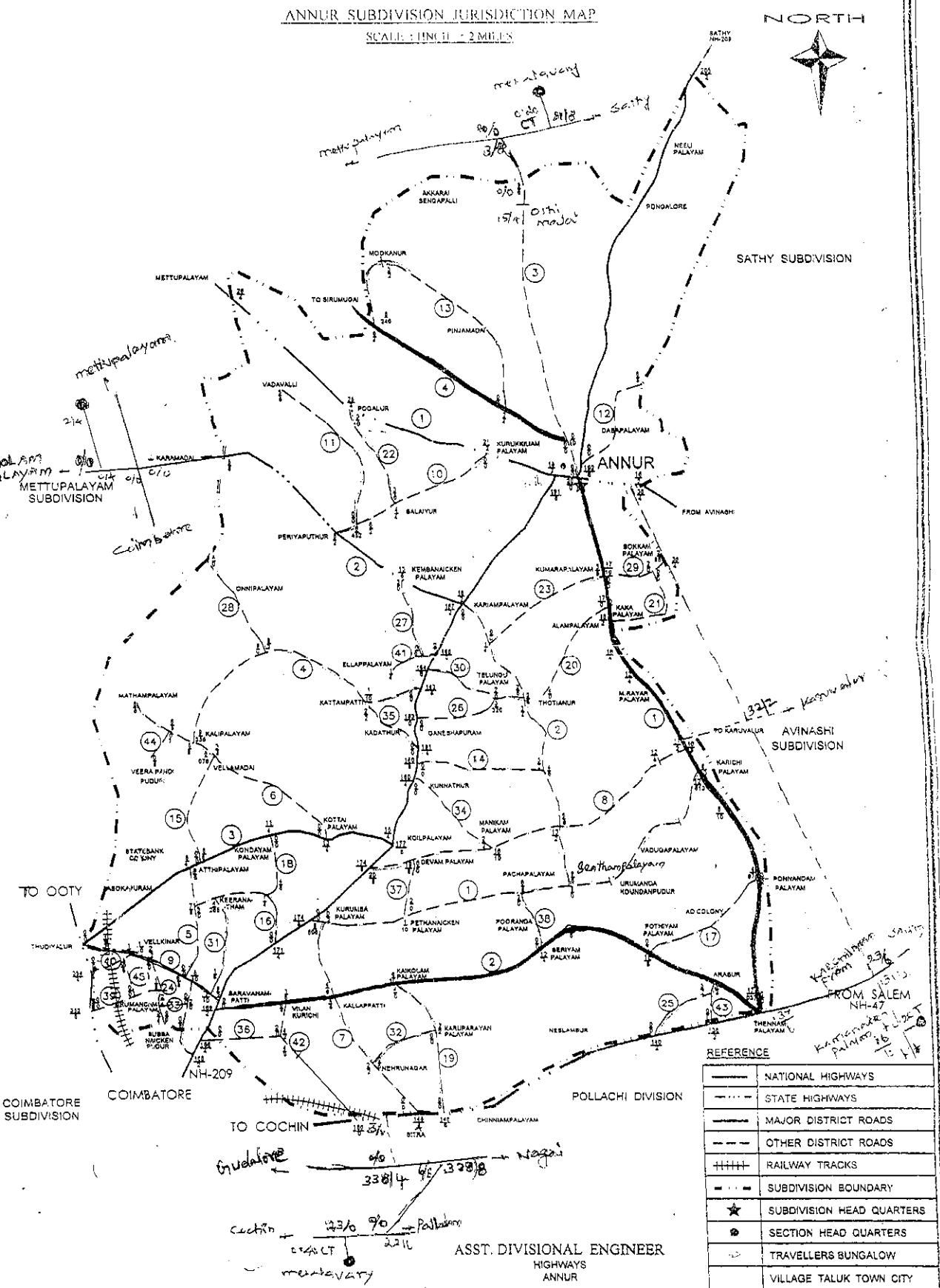
SCHEME	%
Golden Quadrilateral	39
Tamil Nadu Road sector Project	18
NABARD Road Scheme	33
State Highways Maintenance Scheme	36
PM Gram Sadak Yojana	39

MICRO ANALYSIS

HIGHWAYS DEPARTMENT

ANNUR SUBDIVISION JURISDICTION MAP

SCALE : 1INCH = 2 MILES



REFERENCE

———	NATIONAL HIGHWAYS
—·—·—	STATE HIGHWAYS
———	MAJOR DISTRICT ROADS
– – –	OTHER DISTRICT ROADS
+++++	RAILWAY TRACKS
— · — · —	SUBDIVISION BOUNDARY
★	SUBDIVISION HEAD QUARTERS
●	SECTION HEAD QUARTERS
	TRAVELLERS BUNGALOW
	VILLAGE TALUK TOWN CITY

ASST. DIVISIONAL ENGINEER
HIGHWAYS
ANNUR

MICRO ANALYSIS:

In the present scenario, Coimbatore which is called as Manchester of South India is slowly creeping towards the rank of metropolitan in the country. It is one of the fastest growing cities in our country. At the same time vehicular traffic is also increasing in a considerable manner. Though Coimbatore did not possess very good infrastructure facilities, present traffic conditions did not make any huge congestion in traffic. But it will be going to be a tough job for upcoming years.

In particular, Saravanampatti area is now growing in a swift manner in real estate value and infrastructure. It has a very high growth rate which could be unimaginable. The real estate value of this area is still very high when compared with the other major areas of the city. Beyond that, existence of many IT industries like CTS, KGISL, etc., will make this area as a developing one in the city. This locality will also comprise of four colleges namely, KCT, KGCAS, SANKARA, SNS ARTS & SCIENCE COLLEGE. These factors made this road as a high traffic one. More than that Cognizant Technological Solutions is constructing their own building covering large area of land next to this village and SAHARA also constructing a big city which covers nearly 150 acres of land, which also made this road to have a heavy traffic.

The total distance of the Saravanampatti – Thudiyalur road is 9 kms.

Vehicles travelling in this road are, all types of two wheelers, four wheelers, lorry, bus, truck, container, auto, minidor, buses also includes vans. There is one bridge present near T.V.C.V school which is a small one. There is a railway level crossing in this state highway but it does not create any traffic congestion.

The road conditions are good, but the accident rate is increasing due to absence of proper measures. The mud part remaining in this state highway is small when compared with the parts covered with tar.

First the breadth of the road was measured. Then the part covered with Black tar and remaining part covered with mud was measured. After that the number of path holes and dangerous turnings in the path of the road were counted. Number of lamp posts present in the road which will be remain as threat to the drivers and other users of the road were also measured. Then, total number of speed breakers and bridges present in the road were counted. After this, the number of vehicles crossing the road during peak hours and other regular hours were counted. Vehicles include all types of four wheelers, trucks and two wheelers. Then the data collected through interview method from the respondents and based on that the analysis was done.

CHAPTER – 4

ANALYSIS & INTERPRETATION:

CHI – SQUARE TEST:

It enables us to test whether more than two population proportions can be considered equal. It allows us to do a lot more than just test for the equality of several proportions. It is used to determine whether the two attributes are independent of each other.

FOUR WHEELERS:

Chi – square analysis for rank given by drivers of four wheelers for using this road.

H_0: Low traffic = road conditions = no check post = low passersby = business,education.

TABLE – 4.1

	Observed	Expected	(O-E)^2/E
R1A1	22	20	9.0
A2	18	20	0.2
A3	28	20	0.2
A4	10	20	3.2
A5	22	20	5
R2A1	22	20	0.2
A2	38	20	0.2
A3	12	20	16.2
A4	20	20	3.2
A5	8	20	0

R3A1	16	20	7.2
A2	10	20	0.8
A3	34	20	5
A4	16	20	9.8
A5	24	20	0.8
R4A1	8	20	0.8
A2	18	20	0.2
A3	14	20	1.8
A4	38	20	16.2
A5	22	20	0.2
R5A1	32	20	7.2
A2	14	20	1.8
A3	14	20	1.8
A4	16	20	0.8
A5	24	20	0.8
		TOTAL	**68.6**

Degree of freedom => 4*4 =16

Table Values => 0.95 = 7.962.

Calculated value is greater than the table value.

Drivers of four wheelers used this road highly for Business, Education & Construction purposes.

PEDESTRIANS:

Chi – square analysis for rank given by pedestrians for covering this road.

H_0: Black tar = Cement = Metal = Separate Platform = Leave as it is.

TABLE – 4.2

	Observed	Expected	(O-E)^2/E
R1S1	26	20	1.8
S2	34	20	9.8
S3	18	20	0.2
S4	10	20	5
S5	12	20	3.2
R2S1	26	20	1.8
S2	26	20	1.8
S3	40	20	20
S4	8	20	7.2
S5	-	-	-
R3S1	32	20	7.2
S2	6	20	9.8
S3	22	20	0.2
S4	34	20	9.8
S5	6	20	9.8

R4S1	12	20	3.2
S2	20	20	0
S3	18	20	0.2
S4	34	20	9.8
S5	16	20	0.8
R5S1	4	20	12.8
S2	12	20	3.2
S3	4	20	12.8
S4	16	20	0.8
S5	64	20	96.8
		TOTAL	**228.00**

Degree of freedom =(r-1)*(c-1) = 4*4 =16

Table values = > 0.95 = 7.962

Calculated value is greater than the table value.

Pedestrians are highly preferred to cover the road with metal which is left for pedestrian traffic.

OUR WHEELERS:

hi – square analysis for influence on breadth of the road over the speed of vehicles.

H_0: There is no significant difference between speed of vehicles and breath of road.

TABLE – 4.3

	Observed	Expected	(O-E)^2/E
B1 S1	-	-	-
S2	-	-	-
S3	-	-	-
S4	-	-	-
B2 S1	-	2.2	35.2
S2	-	5.06	5.06
S3	-	3.30	3.30
S4	-	0.44	0.44
B3 S1	2	5.6	0.023
S2	13	12.88	0.001
S3	13	8.40	2.52
S4	-	1.12	1.12
B4 S1	7	11	1.454
S2	33	35.30	2.343
S3	11	16.50	1.833

S4	4	2.20	1.473
B5 S1	-	1.20	1.2
S2	-	2.76	2.76
S3	6	1.80	9.80
S4	-	0.24	0.24
		TOTAL	**68.767**

Degree of freedom =(r-1)*(c-1) = 4*3 =12

Table values = > 0.95 = 5.812

Calculated value is greater than the Table value.

Breadth of the road will have high influence on the speed of the vehicles in this road.

RUCK DRIVERS:

hi – square analysis for influence of road conditions towards satisfaction of drivers.

: Road condition does not have any influence on satisfaction level.

ABLE – 4.4

	Observed	Expected	(O-E)^2/E
A1S1	-	-	-
S2	2	1.08	0.7837
S3	-	1.08	1.08
S4	8	8.64	0.0474
S5	8	7.20	0.0889
A2S1	-	-	-
S2	2	1.92	0.0033
S3	2	1.92	0.0033
S4	24	15.36	4.8600
S5	8	12.80	1.8
A3S1	-	-	-
S2	2	0.36	7.4711
S3	2	0.36	7.4711
S4	2	2.88	0.2689
S5	-	2.40	2.40

A4S1	-	-	-
S2	-	1.20	1.20
S3	-	1.20	1.20
S4	12	9.60	0.60
S5	8	8	-
A5S1	-	-	-
S2	-	1.44	1.44
S3	2	1.44	0.2178
S4	6	11.52	2.6450
S5	20	9.60	11.2667
		TOTAL	**44.8472**

Degree of freedom =(r-1)*(c-1) = 4*4 =16

Table values = > 0.95 = 7.962

Calculated value is greater than the table value.

Truck drivers are highly satisfied about the conditions of the road.

RUCK DRIVERS:

hi – square analysis for influence of time towards the speed of the vehicles.

$_0$: There is no significant difference between the time and the speed of the vehicles.

ABLE – 4.5

	Observed	Expected	(O-E)^2/E
T1S1	-	2.88	2.88
S2	-	23.04	23.04
S3	-	10.08	10.08
S4	-	-	-
S5	8	-	-
T2S1	20	0.16	2460.16
S2	2	1.28	0.405
S3	-	0.56	0.56
S4	-	-	-
S5	42	-	-
T3S1	16	-	-
S2	-	-	-
S3	-	-	-
S4	-	-	-
S5	12	-	-

T4S1	-	-	-
S2	-	-	-
S3	-	-	-
S4	-	-	-
S5	-	-	-
T5S1	-	4.96	4.96
S2	-	39.68	39.68
S3	-	17.36	17.36
S4	-	-	-
S5	-	-	-
		TOTAL	**2559.125**

Degree of freedom =(r-1)*(c-1) = 4*4 =16

Table values = > 0.95 = 7.962

Calculated value is greater than the table value.

Day timings will have high influence on the speed of the vehicles in this road.

PERCENTAGE ANALYSIS:

It is used to find out which attribute is contributing major towards the study. It helps in finding out the distribution of attributes. It helps in analyzing the maximum and minimum frequency of distribution.

PEDESTRIANS:

The table – 4.6 describes about the response given by the public for laying traffic signal in the sakthi road junction. Because the traffic signal is very much needed there to have a better traffic flow during peak hours.

Table – 4.6 showing level of essential to lay traffic signal in sakthi road junction:

S. NO	CATEGORY	NO. OF RESPONDENTS	PERCENTAGE
1.	Highly not essential	7	7%
2.	Not essential	6	6%
3	Neutral	25	25%
4.	Essential	31	31%
5.	Highly essential	31	31%

From the table we found that out of 100 respondents 31% of respondents say that traffic signal is highly essential, 31% of the respondents says that traffic signal is essential, 25% of the respondents says that traffic signal is neither essential nor not essential, 6% of the respondents says that traffic signal is not essential, 7% of the respondents says that traffic signal is highly not essential.

From the above table we concluded that maximum of 31% of respondents say that traffic signal is highly essential because of vehicle congestion.

CHART – 4.1:

Chart showing public response for laying traffic signal in Sakthi road junction.

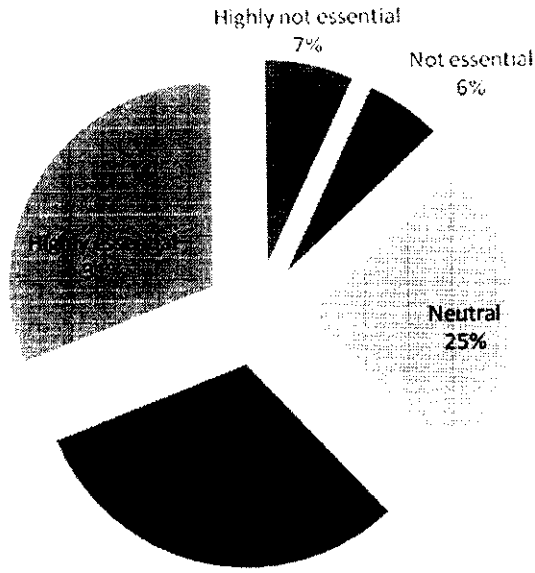


Table – 4.7 describes about the opinion given by the public regarding travelling speed of the vehicles in Saravanampatti – Thudiyalur road. Because in recent days there are many accidents happened there.

Table – 4.7 showing travelling speed of the vehicles in Saravanampatti – Thudiyalur road:

S. NO	CATEGORY	NO. OF RESPONDENTS	PERCENTAGE
1.	Low	7	7%
2.	Average	20	20%
3.	Speed	26	26%
4.	High speed	36	36%
5.	Very High speed	11	11%

From the above table it is depicted that out of 100 respondents 36% of the respondents says that the vehicles travelling in the sakthi road is of high speed, 26% of the respondents says that vehicles travelling in the sakthi road is speed, 20% of the respondents says that vehicles travelling in sakthi road is of average speed, 11% of the respondents says that vehicles travelling in the sakthi road is of very high speed, 7% of the respondents says that vehicles travelling in the sakthi road is of low speed.

From the above table we conclude that 36% of the respondents feel that vehicles travelling in this road are of high speed because of good road conditions.

CHART – 4.2:

Chart showing the response given by the public regarding the speed of vehicles travelling in Saravanampatti – Thudiyalur road.

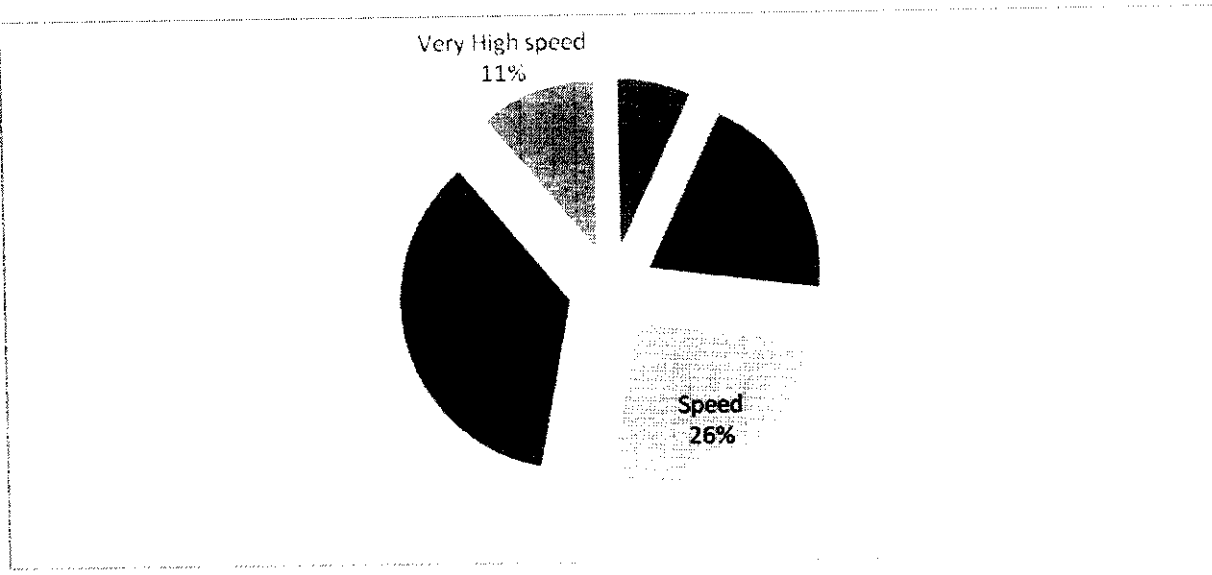


Table – 4.8 describes the satisfaction level of the public regarding the traffic rules followed by the vehicle drivers in this road. This question was asked because of the increase in accident rate in this road.

Table – 4.8 showing satisfaction level regarding the traffic rules followed by vehicle drivers in this road:

S. NO	CATEGORY	NO. OF RESPONDENTS	PERCENTAGE
1.	Highly dissatisfied	16	16%
2.	Dissatisfied	25	25%
3.	Neutral	30	30%
4.	Satisfied	23	23%
5.	Highly Satisfied	6	6%

From the above table it is clear that out of 100 respondents 30% of the respondents says that traffic rules followed by the vehicle drivers in sakthi road junction is neither satisfied nor dissatisfied, 25% of the respondents says that traffic rules followed by the vehicle drivers in sakthi road junction is dissatisfied, 23% of the respondents says that traffic rules followed by the vehicle drivers in sakthi road junction is satisfied, 16% of the respondents says that traffic rules followed by the vehicle drivers in sakthi road junction is highly dissatisfied, 6% of the respondents says that traffic rules followed by the vehicle drivers in sakthi road junction is highly satisfied. Therefore we conclude that maximum of 30% of the respondents says that they are neither satisfied nor dissatisfied about the traffic rules followed by the vehicle drivers in this road because of absence of discipline in the human beings.

CHART – 4.3:

Chart showing the satisfaction level of the public regarding the traffic rules followed by the vehicle drivers in Saravanampatti – Thudiyalur road.

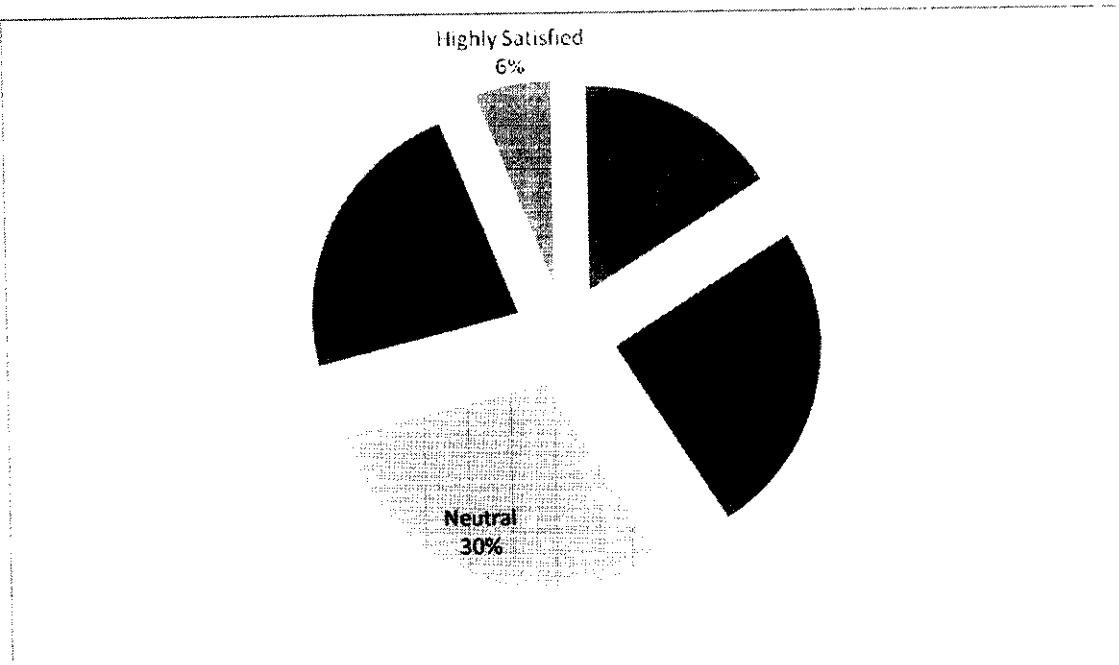


Table – 4.9 describes the satisfaction level of the public regarding the functioning of street lamps during night time. Because Trucks and Lorries are used this road at night times frequently, at that time if night lamps are not working means then it will be dangerous for others.

Table – 4.9 showing satisfaction level regarding the functioning of street lamps during night time:

S. NO	CATEGORY	NO. OF RESPONDENTS	PERCENTAGE
1.	Highly dissatisfied	22	22%
2.	Dissatisfied	14	14%
3.	Neutral	30	30%
4.	Satisfied	29	29%
5.	Highly Satisfied	5	5%

From the above table it is clear that out of 100 respondents 30% of the respondents says that the functioning level of street lamps during the night time is neutral, 29% of the respondents says that the functioning level of street lamps during the night time is satisfied, 22% of the respondents says that the functioning level of street lamps during the night time is highly dissatisfied, 14% of the respondents says that the functioning level of street lamps during the night time is dissatisfied, 5% of the respondents says that the functioning level of street lamps during the night time is highly satisfied. We conclude from the above table that 30% of the respondents are neither satisfied nor dissatisfied regarding the functioning of street lamps during night time because they are not using this road at night times.

CHART – 4.4:

Chart showing the satisfaction level of the public regarding the functioning of street lamps during night time in Saravanampatti – Thudiyalur road.

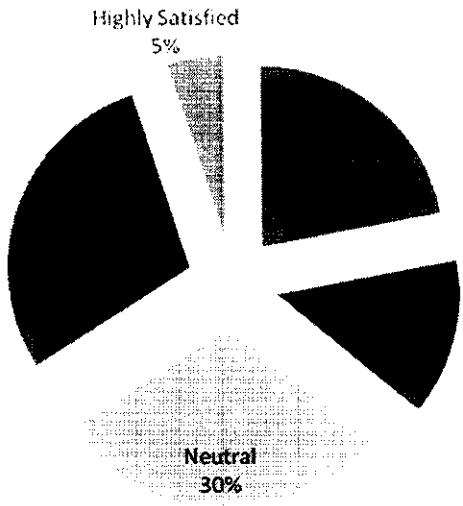


Table – 4.10 describes about the satisfaction level of the public regarding the extension of road for pedestrian traffic. Because at present there is not sufficient space left for the pedestrian traffic in this Saravanampatti – Thudiyalur road.

Table – 4.10 showing satisfaction level for the extension of road for pedestrian traffic:

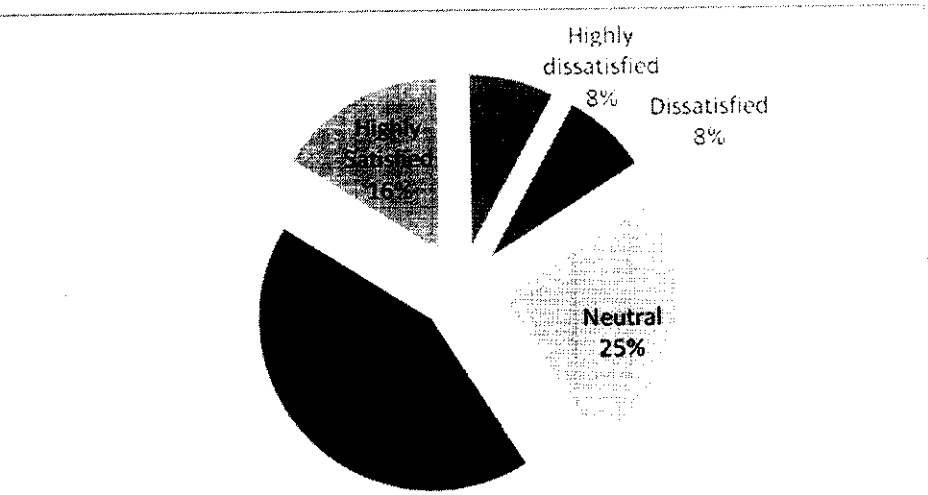
S. NO	CATEGORY	NO. OF RESPONDENTS	PERCENTAGE
1.	Highly dissatisfied	8	8%
2.	Dissatisfied	8	8%
3.	Neutral	25	25%
4.	Satisfied	43	43%
5.	Highly Satisfied	16	16%

From the above table we found that out of 100 respondents 43% of the respondents says that extension of road for pedestrian traffic is essential, 25% of the respondents says that extension of road for pedestrian traffic is neutral, 16% of the respondents says that extension of road for pedestrian traffic is highly essential, 8% of the respondents says that extension of road for pedestrian traffic is not essential, 8% of the respondents says that extension of road for pedestrian traffic is highly not essential.

Therefore we conclude from the above table that 43% of respondents are satisfied if the road is expanded for pedestrian traffic because now there is only small space available for the pedestrian on the either sides of the road.

CHART – 4.5:

Chart showing the satisfaction level of the public regarding the extension of the road for pedestrian traffic.



HAPTER – 5

INDINGS & SUGGESTIONS:

INDINGS:

- Drivers of four wheelers used this road for Business, Education & Construction purposes.
- Pedestrians suggested to cover the road with metal.
- The breadth of the road influencing the speed of the vehicles.
- Truck driver are satisfied about the road conditions.
- Vehicles speed varies on the peak hours and other regular hours.
- 31% of respondents say that traffic signal is highly essential because of vehicle congestion.
- 36% of the respondents feel that vehicles travelling in this road are of high speed.
- 30% of the respondents say that they are neither satisfied nor dissatisfied about the traffic rules followed by the vehicle drivers in this road.
- 30% of the respondents are neither satisfied nor dissatisfied regarding the functioning of street lamps during night time.
- 43% of respondents are satisfied if the road is expanded for pedestrian traffic.

UGGESTIONS:

- Divider is necessary in this road to avoid accidents and to control speed. It could be done only if the breadth of the road is increased. Otherwise the road becomes very narrow which results in traffic congestion.
- Barricades are necessary to control the speed of the vehicles.
- Caution boards should be laid at all places where they are desperately needed.
- Traffic sergeants should be present at peak hours in all important junctions.
- To avoid traffic congestion and accidents separate lane should be laid for two wheelers.
- Speed breakers should be laid near schools and colleges.

CONCLUSION:

Roads are the veins to the country. To become a developed country we need to strengthen our infrastructure. This facilitates the flow of foreign investments to our country which results in growth of industrial sector in abundance. As an initiative this road project was undertaken to educate the government regarding the measures to be taken to improve the State Highway and to control the traffic flow. The study was done by taking the vehicle drivers and pedestrians as the respondents. The findings and suggestions are given based on their response towards the questionnaire prepared by us. We measured the breadth of the road and found that major part of the road is covered with mud than the black tar. We understood that congestion of traffic was high at both peak and regular hours. We observed the traffic stagnation in the railway level crossing and it was found to be normal. We confirmed to the pedestrian passed by were satisfied with the present road conditions. Thus this project gives the clear vision about the Saravanampatti – Thudiyalur State Highway and the measures to be adopted by the government to improve the road conditions and to reduce the traffic congestion.

IBLIOGRAPHY

JOURNALS:

- Smit R., Brown A.L., Chan Y.C, Environmental Modelling & Software; Oct2008, Vol. 23 Issue 10/11, p1262-1270, 9p
- Richard.J. Gibbens, Yunus Saatci, Philosophical Transactions: Mathematical, Physical & Engineering Sciences; Jun2008, Vol. 366 Issue 1872, p1907-1919, 13p
- Logistics & Transport Focus; Jul/Aug2004, Vol. 6 Issue 6, 13P
- Logistics & Transport Focus; Dec2002, Vol. 4 Issue 10, p77-77, 0p URBAN CHANGING SCHEMES
- Kapski, Leonovich, Baltic Journal of Road & Bridge Engineering; Jun2008, Vol. 3 Issue 2, p101-108, 8p
- Peltzer, Renner, Walter, Accident Analysis & Prevention; May2004, Vol. 36 Issue 3, p367, 8p
- Lyons, Ronan A. Ward, Heather, Accident Analysis & Prevention; Jul2008, Vol. 40 Issue 4, p1406-1410, 5p
- Sandrock, Stephan, Griefahn, Barbara, Journal of Sound & Vibration; Jun2008, Vol. 313 Issue 3-5, p908-919, 12p
- Bottani, Eleonora & Rizzi, Antonio International Journal of Logistics: Research & Applications; Mar2007, Vol. 10 Issue 1, p11-28, 18p

- Kato, Yuichi Hayashi, Takashi & Kitagawa, Tamotsu Applied Acoustics; Oct2006, Vol. 67 Issue 10, p1009-1021, 13p
- Lian, Jon Inge , Journal of Transport Geography; May2008, Vol. 16 Issue 3, p174-181, 8p
- Iwanowski, Sebastian & Spering Transportation Research: Part C; Oct2003, Vol. 11 Issue 5, p405, 18p
- Toroyan, T. Injury Prevention; Dec2007, Vol. 13 Issue 6, p431-431, 0p
- Fernández-Caballero, Antonio Gómez Expert Systems with Applications; Oct2008, Vol. 35 Issue 3, p701-719, 19p
- Anjaneyulu, Y Jayakumar, I. Bindu, V. Hima Sagareswar, G. Mukunda Rao, P. V. Ramani, K. V International Journal of Environment & Pollution; 2007, Vol. 29 Issue 4, p75-89, 15p
- Eastman, R. Miles, Mice J. C. Wilkinson, J. Transport; Nov2004, Vol. 157 Issue 4, p203-210, 8p
- Ramos, Pilar Díez, Elia Villalbí, Joan R. Accident Analysis & Prevention; Jul2008, Vol. 40 Issue 4, p1313-1319, 7p

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ANNEXURE

INTERVIEW SCHEDULE FOR TRUCK DRIVERS

1) Please give your level of satisfaction about the road.

- □ Highly dissatisfied
- □ Dissatisfied
- □ Neutral
- □ Satisfied
- □ Highly satisfied

2) What made you to use this road?

- □ Low traffic
- □ Road conditions
- □ No check post
- □ Low pedestrian traffic
- □ Business, education & others

3) Rank your convenient time to travel in this road?

- □ 6 AM – 10 AM
- □ 10 AM – 2 PM
- □ 2 PM – 6 PM
- □ 6 PM – 10 PM
- □ 10 PM – 6 AM

4) At what speed do you travel in this road?

- □ 20 – 30 kmph
- □ 31 – 40 kmph
- □ 41 – 50 kmph
- □ 51 – 60 kmph
- □ Above 60 kmph

5) Do you think divider is necessary?

- □ Yes
- □ No

If yes, give reasons

_____

If no, give reasons

_____

6) Is barricades are necessary to control speed?

- □ Yes
- □ No

If yes, reasons please

_____

If no, reasons please

_____

INTERVIEW SCHEDULE FOR FOUR WHEELERS

1) At what speed do you travel in this road?

- □ Below 30 kmph
- □ 30 – 50 kmph
- □ 51 – 70 kmph
- □ 71 – 90 kmph
- □ Above 90 kmph

2) Are you satisfied with the breadth of the road?

- □ Highly dissatisfied
- □ Dissatisfied
- □ Neutral
- □ Satisfied
- □ Highly satisfied

3) Why are you using this road? (Rank it)

- □ Low traffic _____
- □ Road conditions _____
- □ No check post _____
- □ Low passersby _____
- □ Business, education & other purposes _____

4) Do you think divider is necessary?

- □ Yes
- □ No

If yes, give reasons

_____

If no, give reasons

_____

5) Have you met with any accident in this road?

- □ Yes
- □ No

If yes, reasons please

_____

If no, reasons please

_____

INTERVIEW SCHEDULE FOR PEDESTRIANS

1) Is it essential to lay a traffic signal in Sakthi road junction?

- □ Highly not essential
- □ Not essential
- □ Neutral
- □ Essential
- □ Highly essential

2) According to you at what speed, the vehicles are travelling in this road?

- □ Low
- □ Average
- □ Speed
- □ High Speed
- □ Very high speed

3) What is your satisfaction level regarding the traffic rules followed by vehicle drivers in this road?

- □ Highly dissatisfied
- □ Dissatisfied
- □ Neutral
- □ Satisfied
- □ Highly satisfied

4) What is your satisfaction level regarding the functioning of street lamps during night time?

- □ Highly dissatisfied
- □ Dissatisfied
- □ Neutral
- □ Satisfied
- □ Highly satisfied

5) Rank the following options by which the Mud part should be treated?

- □ Covered with black tar _____
- □ Covered with cement _____
- □ Covered with metal _____
- □ Laid as a separate platform _____
- □ Leave as it is _____

6) How do you feel if road is extended the functioning of street lamps during night time?

- ☐ Highly dissatisfied
- ☐ Dissatisfied
- ☐ Neutral
- ☐ Satisfied
- ☐ Highly satisfied

7) Suggestions _____

_____

_____