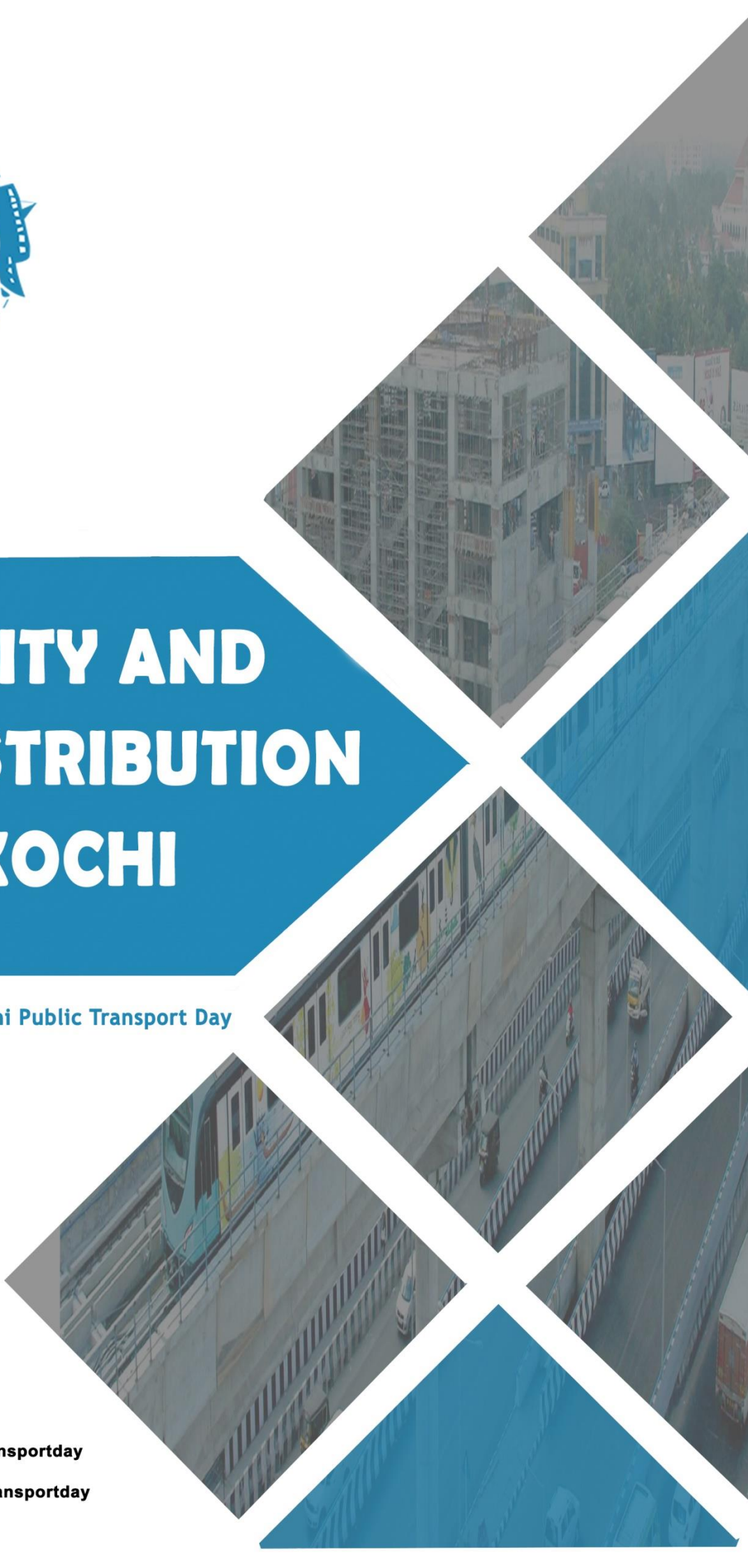
Kochi PUBLIC TRANSPORT DAY

MOBILITY AND MODE DISTRIBUTION IN KOCHI

Study conducted as part of Kochi Public Transport Day



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1. INTRODUCTION

Kochi is a major port city on the south west coast of India. The city has a municipal corporation limit population of 0.602 million, and a metropolitan population of 2.1 million, making it the largest urban agglomeration in Kerala.

As per the latest census, Kochi agglomeration is one of the fastest growing metropolitan areas in southern India. Kochi is the commercial capital of Kerala. With most of its commercial establishments and government offices located in a 94.88 sq. km area[1], a robust public transport framework is the key for a sustainable development of Kochi.

There are approximately 2.1 million residents in Kochi metropolitan region[2].Estimates indicate that there is one car for every five individuals in the city compared to one for every eight at the state level. If commuters continue to use private cars at this rate for their mobility requirements, it will result in more pollution, congestion and loss in human productivity. This also leaves insufficient space for public transportation to navigate. There is a limit to the transport infrastructure development in the city due to higher density of the population and the limited vacant space available. More number of private vehicles claim a major part of the right of way. Increased road width also encourages more vehicles; there are already 1.467 million for a population of 2.1 million[3].

The introduction of the Kochi Mobility Hub and later the Kochi Metro system, has increased awareness among the public on the overall public transport framework and its unique position in its sustainable urban growth. The aspects of interconnectivity, last and firstmile connectivity, feeders' services, efficiency and quality of the services etc. play a crucial role in developing a successful public transportation network in any city. Its smooth functioning also requires a conscious effort from all the stakeholders who have to continuously analyse gaps while simultaneously fine tuning and optimising the entire system in operation.

The proposed 'Kochi Public Transport Day' is a collaborative platform for all the stakeholders to popularise public transport among commuters. It aims to identify and present solutions to the challenges faced by the vast majority of commuters in the city.

[1]https://cochinmunicipalcorporation.kerala.gov.in/documents/10157/32ef97a6-beb2-45ab-b6c1-20c0759023fd
[2] Census 2011
[3]Codatu- transport mobility in kochi (KMRL)

A key focus area of the project is to increase the attractiveness of public transport among the general public. It is important to create awareness on the significance of public transport and shift private car users to public transport. The goals of the Kochi Public Transport Day project include: conducting research to understand the gaps in the existing public transport network, create awareness among the general public, celebrate the benefits of public transport usage etc.

It is very important to understand why private car users prefer their vehicle over public transport and to find ways to make public transport more attractive and useful for them. The project will cater primarily to the resident population of Kochi and its suburbs. The wider beneficiary pool would also include visitors and tourists to Kochi.

2. OBJECTIVE

- To study the different public transport services provided in Kochi and understand the gaps in using public transport.
- To study the first and last mile connectivity and identify possible initiatives with the aim of reducing the use of private vehicles.

The main objective of this study is to understand the gaps in the public transport system, which would help understand the commuter expectations and the service delivered. The study would also help to understand the factors influencing the use of private vehicles.

3. METHODOLOGY

Primary and Secondary data has been used for the study. Primary data is collected by using a structured questionnaire (see appendix) from 400 respondents. The population of the study consists of residents in the Cochin Corporation limit. The dependent population (population in the age group 0-18 and 60+) has been deducted from the total population of 0.602 million to arrive at the working population. The working population in the Cochin Corporation was calculated to be 0.368 million. For an assumed level of fivepercent error, sample size was calculated at 384. For the sake of convenience, a sample of 400 has been taken for the study. Random sampling has been used to choose respondents.

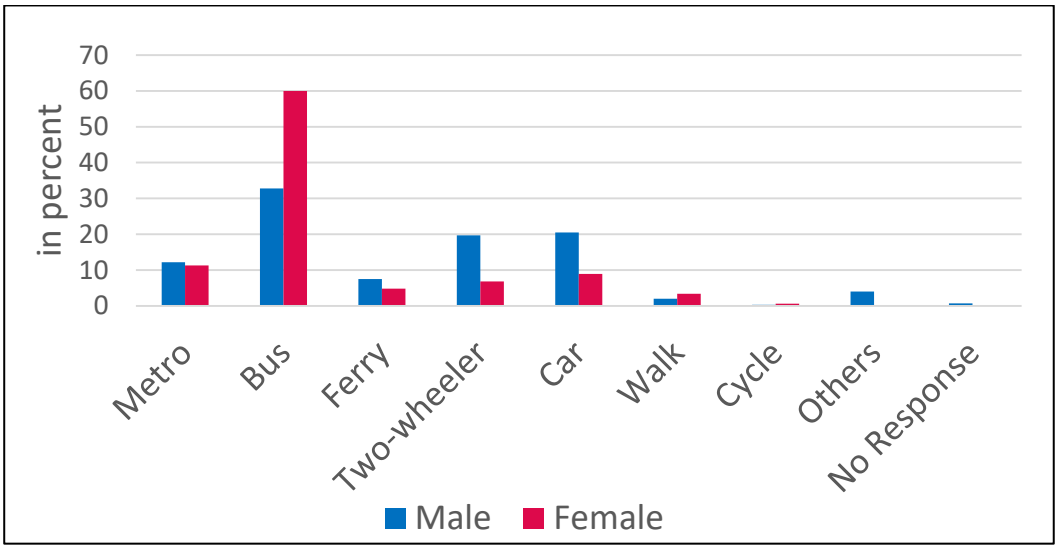
Survey locations were selected based on the number of wards in Kochi Corporation. There are 74 wards in Kochi and one survey location represents three wards.

4. MAJOR FINDINGS

4.1 Gender specific findings

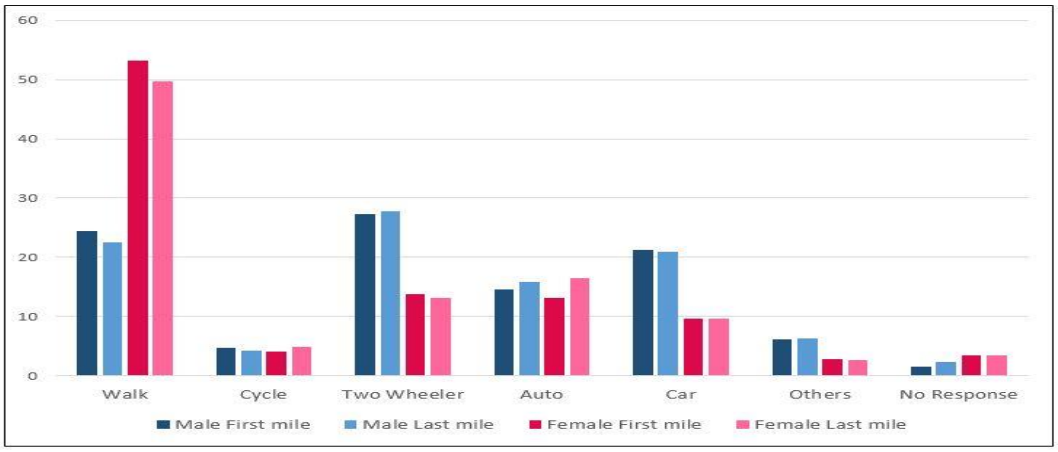
4.1.1 Around 60 per cent of women surveyed take buses for work, shopping, leisure etc. Women are more dependent on public transport than men. **(Fig 1)**

Figure 1: Genderwise preference of main modes of transport



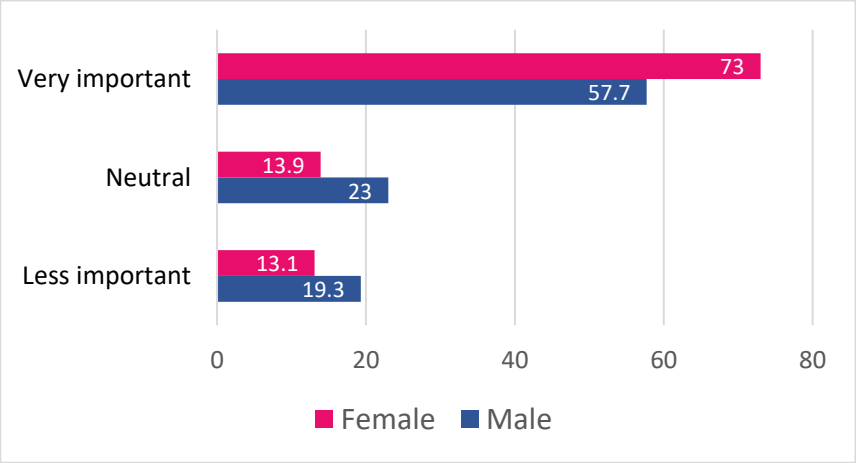
4.1.2 Nearly 53.2 per cent and 49.7 per centwomen surveyed prefer walking for first mile and last mile connectivity respectively, whereas 27 per cent of men use twowheelers for first and last mile connectivity. **(Fig 2)**

Figure 2: Genderwise preference of first and last mile connectivity for different modes



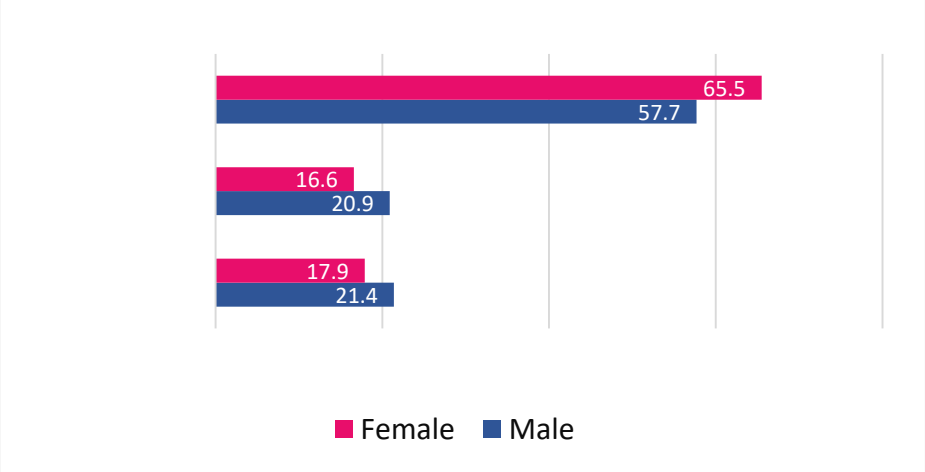
4.1.3 73 per cent women and 57.7 per cent men say that safety is a main issue while choosing public transport. **(Fig 3)**

Figure 3: Genderwise preference of safety



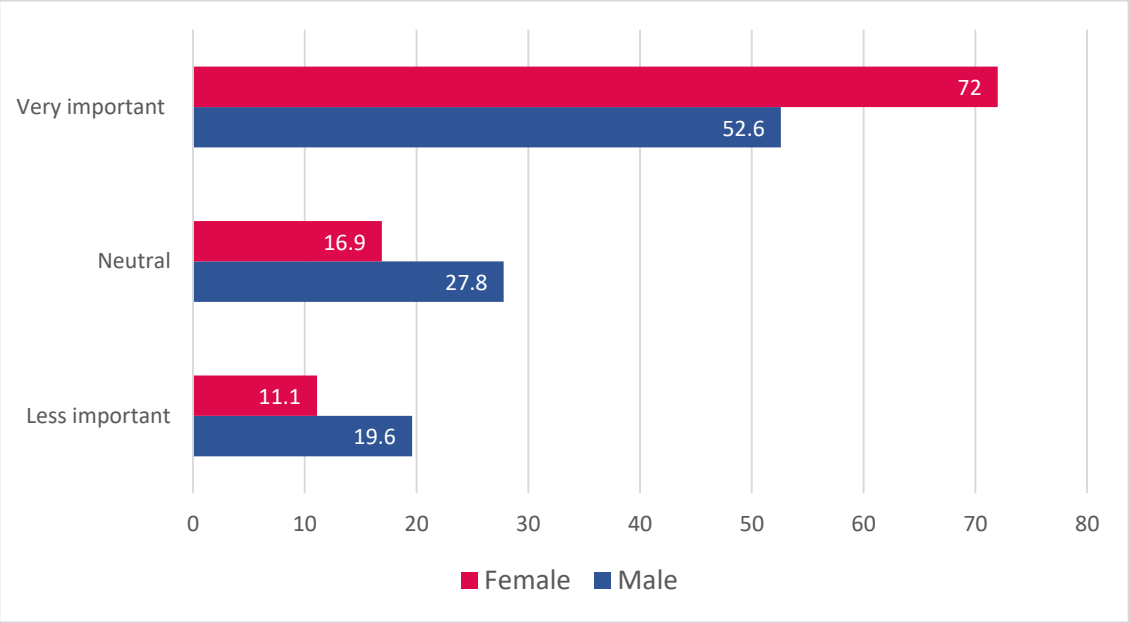
4.1.4 Cleanliness in public transport and related infrastructure is an important factor for using public transport. Both the genders voted for cleanliness as an important factor. **(Fig 4)**

Figure 4: Genderwise preference of cleanliness



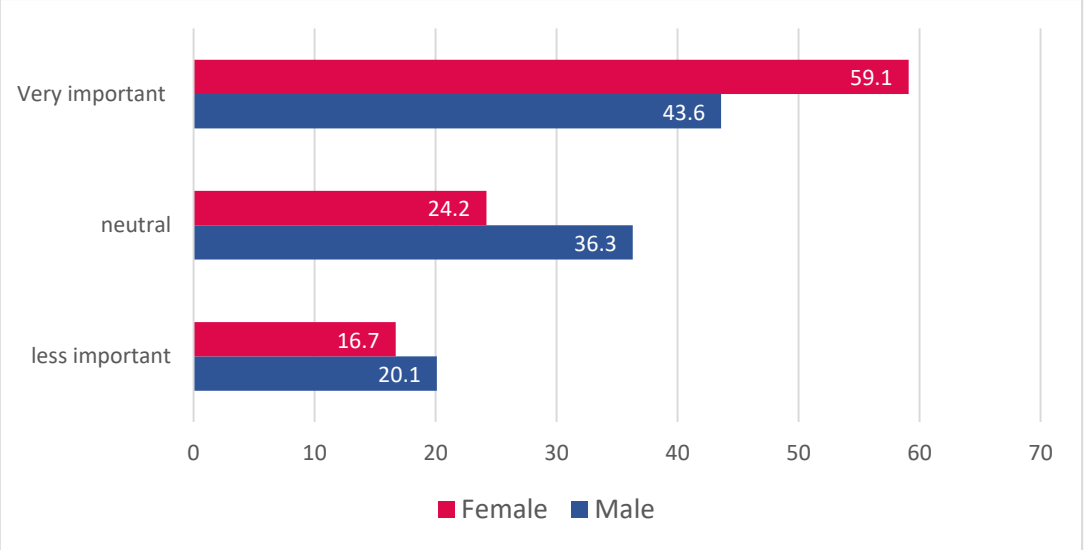
4.1.5 A service that is direct and conveniently scheduled is an important factor. 72 per cent of the women surveyed consider availability of direct services as very important factor while choosing public transport. **(Fig 5)**

Figure 5: Genderwise preference of availability of direct services



4.1.6 Around 60 per cent women and 44 per cent men surveyed cite availability of information regarding public transport as a very important factor while choosing a mode of public transport. Information such as timetable, routes, number of buses/trains is an important factor. **(Fig 6)**

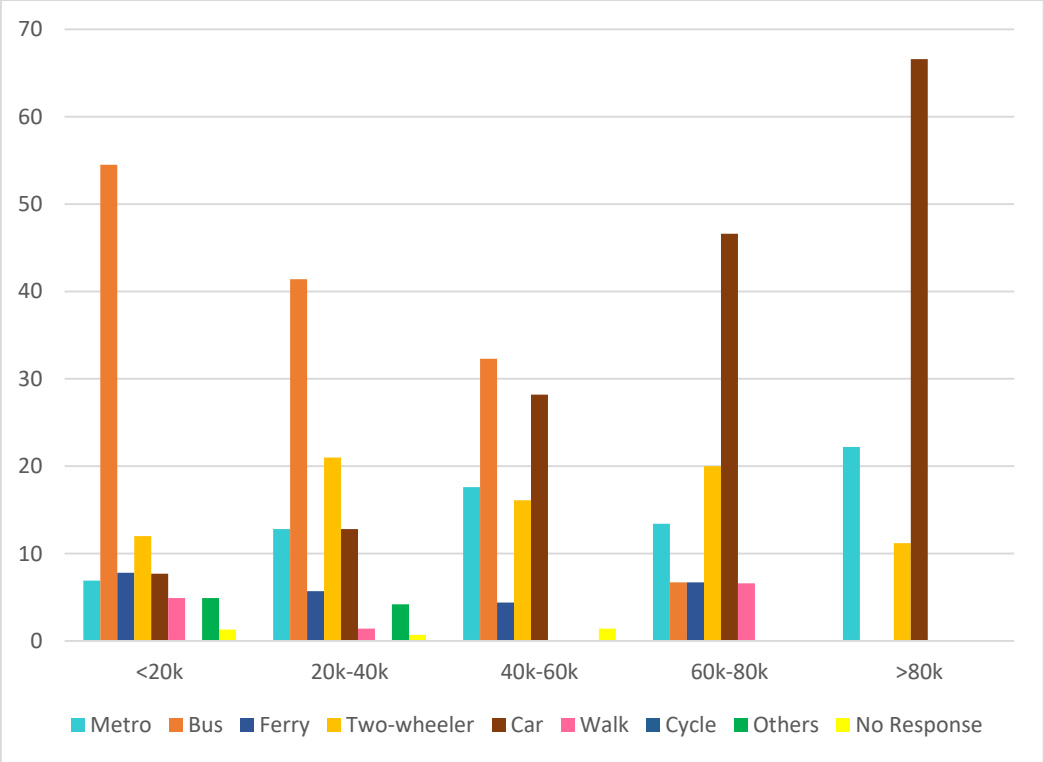
Figure 6: Gender wise preference of availability of Information



4.2 Key findings

4.2.1 Around 54.5 per cent belonging to the income group <20k used bus as their main mode of travel, while 12 per cent use two wheelers as the main mode. As income increases, main mode shifts to car; 66.6 per cent of those who use car as their main mode belong to the income category of >80k **(Fig 7)**

Figure 7: Percentage distribution of main modes based on their monthly income



4.2.2 The percentage distribution of first mile connectivity shows that 46.1 per cent of income level <20k use walk as their first mile connectivity. As the income level increases, the first mile connectivity shifts to car i.e. 66.7 per cent use car in the income level >80k. The same interpretation goes for last mile connectivity, people shift to private vehicles with increase in their income level.**(Fig 8.1,8.2)**

Figure 8.1: Percentage distribution of first-mile connectivity based on monthly income of families

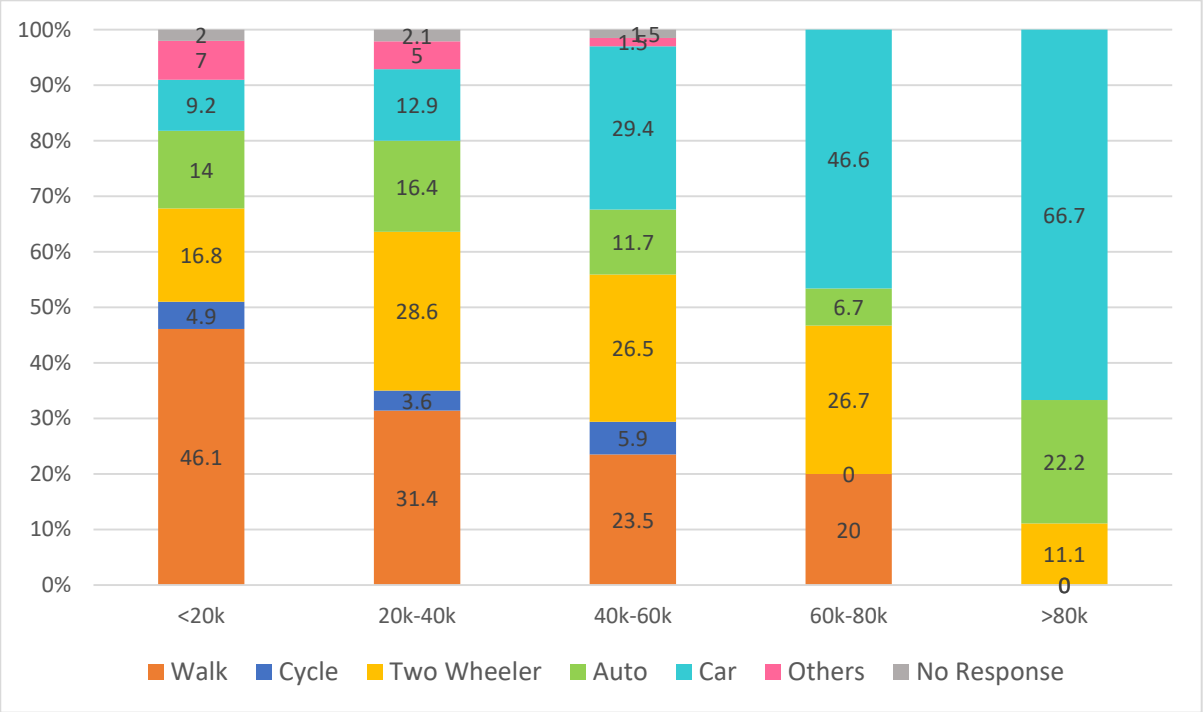
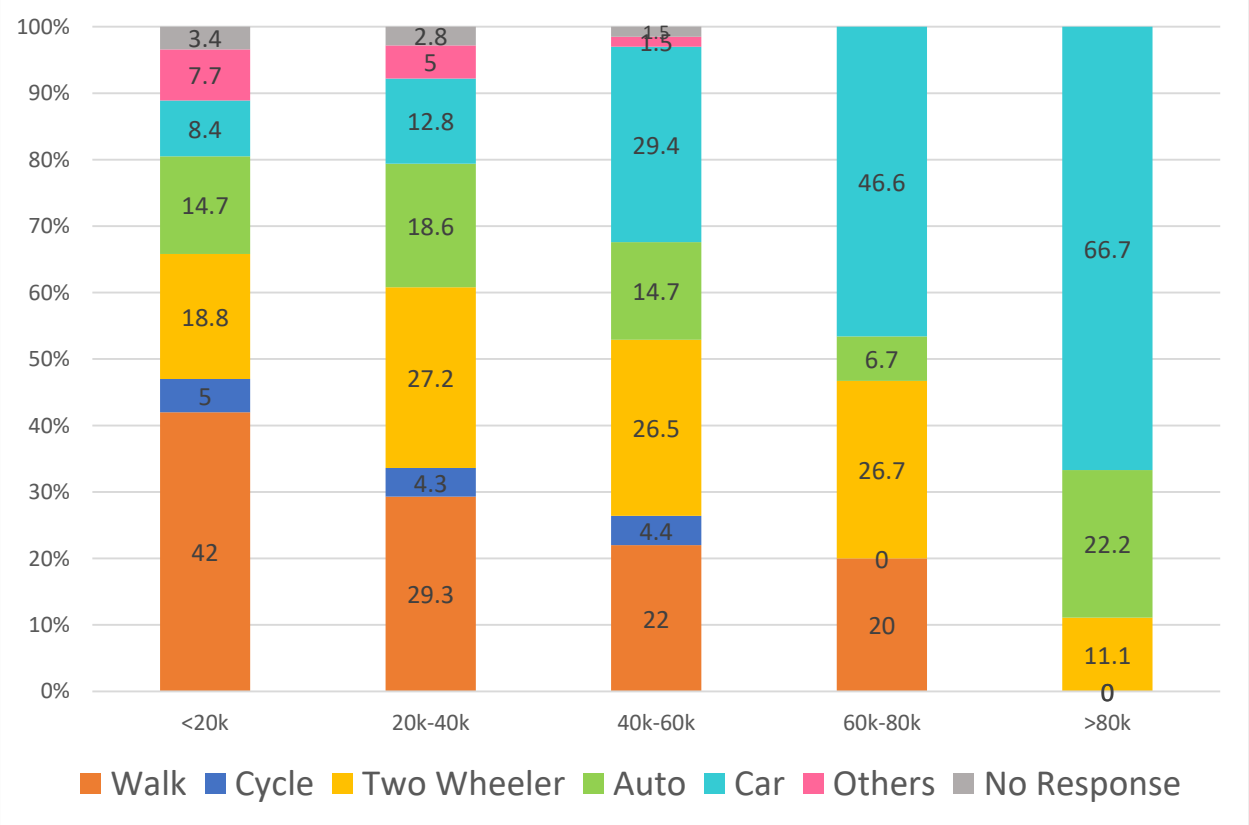
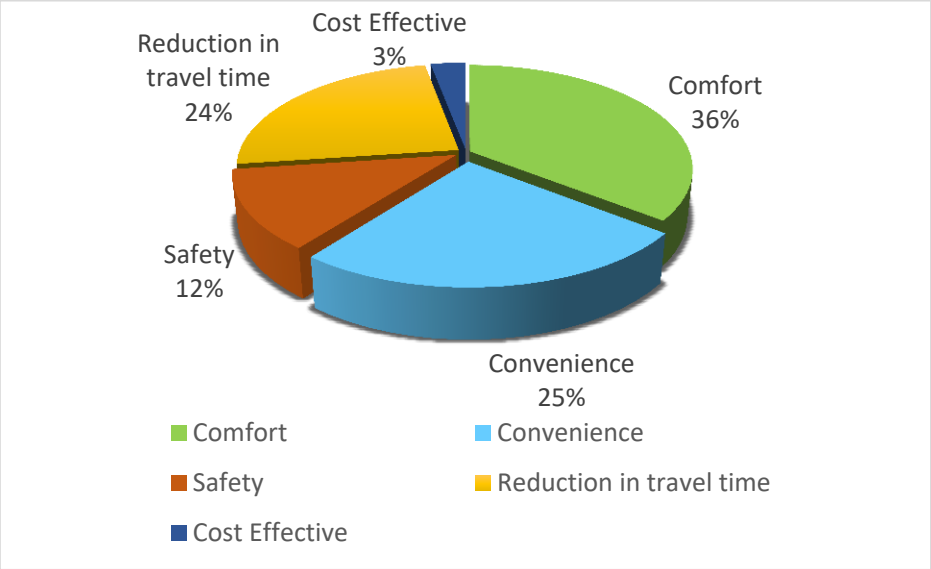


Figure 8.2: Percentage distribution of last mile connectivity based on monthly income of families



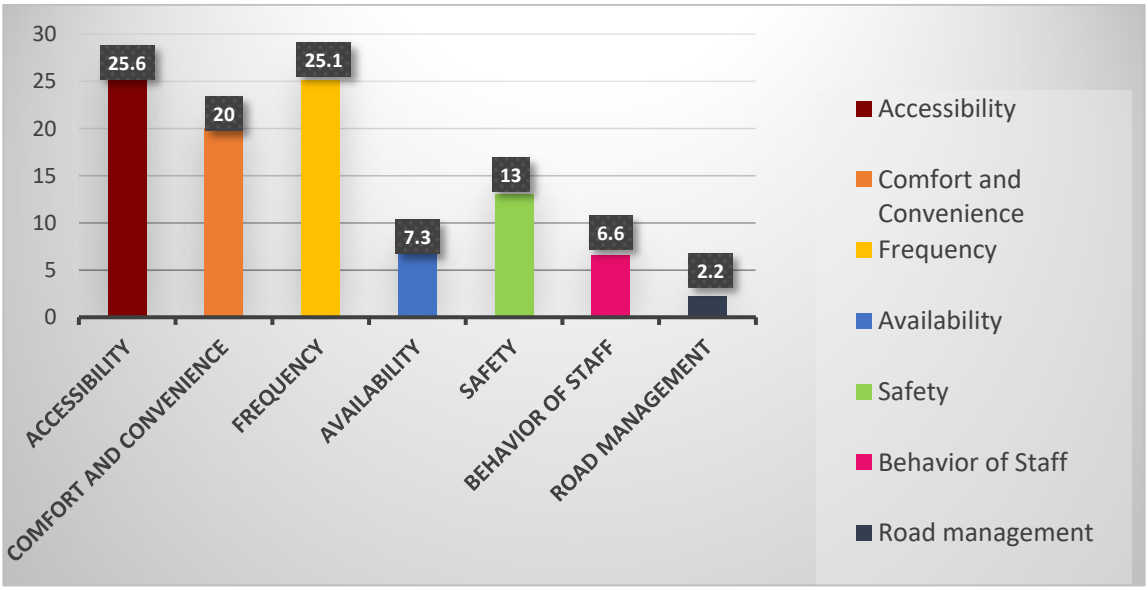
4.2.3 The respondents were asked why they would choose private vehicle over public transport; the majority cited comfort as the main reason. Convenience, safety, reduction in travel time and cost effectiveness were other reasons stated.

Figure 9: Reasons for shifting from public transport to private vehicle



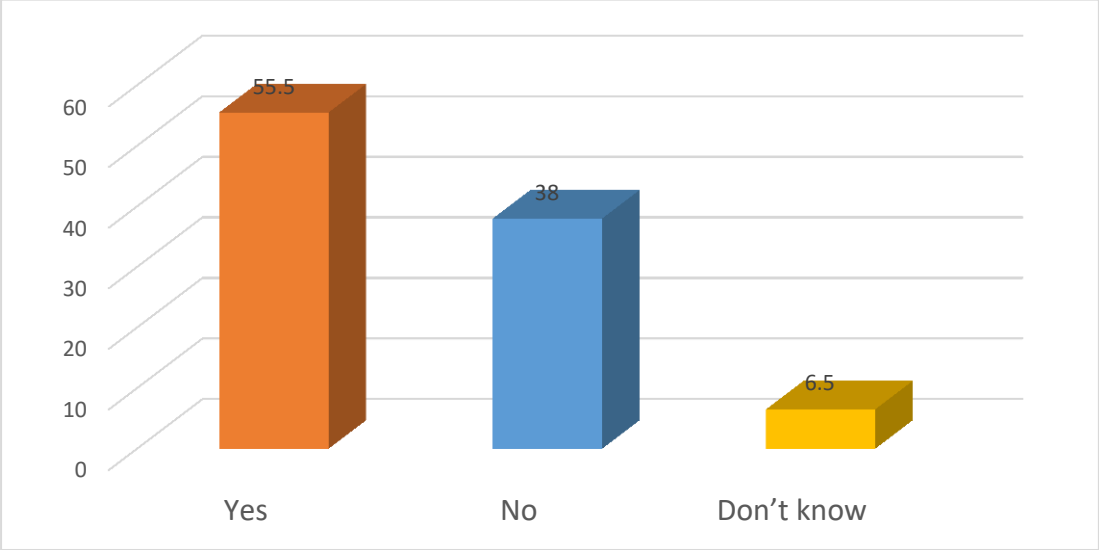
4.2.4 The respondents were asked to suggest measures to improve the public transport system in Kochi. The figure shows the various measures suggested to improve public transport: 25 per cent of the respondents say accessibility and frequency are the main improvements needed in public transport services; comfort and convenience are also a major concern, while safety is another issue while taking any mode of public transport. **(Fig 10)**

Figure 10: Suggested measures to improve public transport.



4.2.5 Around 55.5 per cent people voted 'Yes' agreeing that using cars for commuting is the main reason for traffic congestion, while 38 per cent respondents said 'No'; less than seven per cent are not sure.

Figure 11: Are cars the main reason for traffic congestion?



5. CONCLUSION-WAY FORWARD

Kochi is widely known as the commercial and economic capital of Kerala and thus good transport infrastructure is critical for the city's economy. There are many modes of transport to get in and around the city, but Kochi faces numerous problems due to the seasonality of transport demand. Such problems are congestion in the major transport routes, damage of transport infrastructure, increased travel time and low quality services provided to residents and visitors.

This study aims to contribute to the existing knowledge of unobserved factors that influence transit use. The study shows the major gaps within public transport and the first and last mile connectivity issue. Majority of the population depends on bus for their daily travel, while first and last mile connectivity is not adequate or sufficient. More than 50 per cent of the population's first and last mile mode is walking. There is a need for better connectivity and direct services. The availability of information such as timetable, bus routes etc. is very important.

The study also shows why people prefer cars over public transport; comfort and convenience while choosing any mode of transport is well appreciated, hence people need efficient public transport to travel. 55.5 per cent of the people agreed that cars are the main reason for congestion; this shows that people are aware about the increasing use of private vehicles and the congestion it creates for other modes of transport. The road infrastructure in Kochi has not been able to meet the growing traffic demand and hence traffic congestion is a major problem in the city.

According to the analysis, the most significant factor when choosing a mode of public transport is the availability of information regarding routes, timings etc. Commuters also focus on qualitative aspects such as comfort, safety and availability of services. Respondents would shift to public transport if services are efficient and provided regularly. Better road management and staff behaviour would also enable a shift. With the sharply increasing number of vehicles on the road, there is demand for creating new efficient public transport services and good infrastructure.

Appendix 1

Locations

Fort Kochi – Fort Kochi Beach, EVM cinemas, RDO, Edakochi main road

Ernakulam- Marine drive, Subhash Park, Centre Square Mall, Broadway

Vytilla -Gold Souk Mall, Banks

Thevara, Panampilly Nagar – Banks

Kaloor - EFPO, Keltron

Edapally -Lulu Mall, Changampuzha Park

Kadavanthara -Civil supplies office, PWD

Kathrikadavu- ESIC office

Palarivattom- Post offices, BSNL office

Vaduthala- LIC, KSEB Office, Corporation office

Appendix 2

Questionnaire

Name: _____ Location: _____ Time: _____

Kochi Transport Survey

1. Personal Details

Name: _____ **Age:** 18 -30 ☐ 30 -45 ☐ 45- 60 ☐

Sex: Male ☐ Female ☐ others ☐

Occupation: Govt. Job ☐ Private Job ☐ Business ☐ Other ☐

Are you a resident of Kochi Corporation? Yes ☐ No ☐ Location of Residence: _____

Are you a person with Disability? Yes ☐ No ☐

Monthly Income: < 20k ☐ 20k-40k ☐ 40k-60k ☐ 60k-80k ☐ 80k- 1 lakh ☐ > 1 lakh ☐

Monthly Expenditure on Transport (Average): < 1k ☐ 1k -4k ☐ 4k- 6k ☐ 6k-8k ☐ 8k-10k ☐ 10 k & above ☐

Total Time spent in commuting (to and fro) : <30 m ☐ 30m – 1hr ☐ 1hr -1hr30 m ☐ 1hr 30 m- 2hr ☐ 2hr -3hr ☐

Total distance travelled (to and fro) : <5km ☐ 5-10Km ☐ 10-15Km ☐ 15-20Km ☐ 20-25Km >25 km ☐

Do you/your family own any vehicle? Yes ☐ No ☐ If yes, no. of Bicycle _____Two-wheeler _____ Car_____

2. Trip Characteristics

Purpose of trip: Work ☐ Business ☐ leisure ☐ Shopping ☐ Education ☐ Others ☐

Frequency of trips: Daily ☐ 2 or 3 times a week ☐ once in a week ☐ occasionally in a month ☐

Main Mode of Travel: Metro ☐ Bus ☐ Ferry ☐ Two-Wheeler ☐ Car ☐ Walk ☐ Cycle ☐ Others ☐

First mile connectivity: Walk ☐ Cycle ☐ Two-Wheeler ☐ Auto rickshaw ☐ Car ☐ Others ☐

Last mile connectivity: Walk ☐ Cycle ☐ Two-Wheeler ☐ Auto rickshaw ☐ Car ☐ Others ☐

3. Travel Characteristics (Opinion Survey)

Please rate how important the following factors are in using Public Transport

(1=very Important, 2 =Important 3 =Neutral 4 = Less important 5=Not Important)

Factors	1	2	3	4	5
First and last mile Connectivity	☐	☐	☐	☐	☐
Frequency of Services	☐	☐	☐	☐	☐
Cost of Journey/Trip Fare for Main Mode	☐	☐	☐	☐	☐
Cost of Journey/Trip Fare for Feeder Mode	☐	☐	☐	☐	☐
Availability of information about services	☐	☐	☐	☐	☐
Availability of direct services between start point and end point	☐	☐	☐	☐	☐
Total travel time in Public Transport	☐	☐	☐	☐	☐
Safety Issues	☐	☐	☐	☐	☐
Cleanliness and Aesthetics of the Terminals and bus Service	☐	☐	☐	☐	☐
Comfort of travel like A/C, better seating etc.	☐	☐	☐	☐	☐

4. Opinion Survey

1. If you are a car user what are the reasons for shifting from public transport to private vehicles? (Comfort, Convenience, Safety, reduction in travel time etc.) 1._____ 2. _____
2. Suggest measures to Improve Public Transport in Kochi (Improve Connectivity, frequency, provide A/C buses etc.)

   1: _____ 2: _____
3. Do you think using cars for commute is the main reason for traffic congestion? Yes ☐ No ☐