

**FACTORS INFLUENCING PREFERENCE OF KOCHI METRO AS
A MODE OF PUBLIC TRANSPORTATION**

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Submitted by

AROMAL SAJEEVAN (REG NO. 200021072277)

ANUSHA E S (REG NO. 200021072311)

CEO SUNNY (REG NO. 200021072317)

UNDER THE SUPERVISION OF

DR. TESSY THOMAS

(Asst. Professor)



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THRIKKAKARA P.O., COCHIN 682 021

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C E R T I F I C A T E

This is to certify that this Dissertation entitled “**FACTORS AFFECTING PREFERENCE OF KOCHI METRO AS A MODE OF PUBLIC TRANSPORTATION**” has been prepared by AROMAL SAJEEVAN, ANUSHA E S and CEO SUNNY under my supervision and guidance in partial fulfilment of the requirements for the award of the Degree of Bachelor of Commerce of the Mahatma Gandhi University. It has not previously formed the basis for the award of any Degree, Fellowship, Associateship etc.

They are allowed to submit this Project Report.

Ms. Ponny Joseph
Head of the Department
P. G Dept of Commerce &
Research Centre
Bharata Mata College,
Thrikkakara, Kochi

Dr. Tessy Thomas
Assistant Professor
P. G Dept of Commerce &
Research Centre
Bharata Mata College,
Thrikkakara, Kochi

DECLARATION

We hereby declare that the project **“FACTORS AFFECTING PREFERENCE OF KOCHI METRO AS A MODE OF PUBLIC TRANSPORTATION”** is our original work and has not been submitted earlier to MG University or to any other Universities. We have undertaken this project work in partial fulfilment of the requirements of B. Com 2020-2023 in Bharata Mata College, Thrikkakara, Ernakulam affiliated to MG University, Kottayam.

AROMAL SAJEEVAN

ANUSHA E S

CEO SUNNY

Thrikkakara

31-03-2023

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AROMAL SAJEEVAN

ANUSHA E S

CEO SUNNY

Thrikkakara

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

In India, Kochi is regarded as one of the metropolises with the fastest population growth. The population of the city and the adjacent metropolitan area is over 8 million, according to estimates. This results in nearly 6 million car trips among the roughly 11 million commuting trips made every day. The city has a strong demand for an efficient transportation system, and the people of Kochi have long thought that a reliable, cost-effective rail system is vital. It could complement and expand the existing public transportation options.

As a result, the Kerala government decided to move on with the Kochi Metro Railway Project. This project is intended to provide the people of Kochi with a secure and safe, environmentally friendly, on time, polite mode of public transportation services that is widely integrated with other forms of private and public transportation, including MRTS, suburban trains, and buses. It is also designed to be transparent, environmentally sustainable, reliable, creative, revolutionary, rapid, easy-to-use, effective, inexpensive, and modern.

The Kochi Metro Railway Scheme is being carried out by an SPV, or Special Purpose Vehicle, established by the Kerala government. Following the Companies Act, the SPV known as the Kochi Metro Railway system was formed. It becomes a joint venture between the governments of India and Kerala with an equal equity stake. It features modern communication, air-conditioned cars, and a train management system. Train services are also offered with a frequency of 4-5 m for passengers using the Kochi metro. Underground station entrances and exits are made through the flap doors.

Traveller convenience is guaranteed by using the numerous escalators that have been installed at numerous metro stations, which are controlled with the aid of contactless tokens and smart cards. Travelers may easily move throughout the city thanks to Kochi Metro Railway System's assistance at intersections with other modes of transportation. The metro in Kochi is both necessary and advantageous for city visitors.

One of the key elements influencing the transportation sector, particularly metro railway services, is now customer satisfaction. Therefore, providing the highest level of client satisfaction through a high calibre of services will be of utmost importance for any transportation company. To deliver better client satisfaction, the company must continuously assess and improve the quality of services. Both the satisfaction of commuters and the quality of services are influenced by people and diplomatic factors.

1.2 RELEVANCE OF STUDY

The study "Factors Affecting Preference of Kochi Metro as a Mode of Public Transportation" is relevant in several ways. Firstly, the study examines the factors that influence people's preference for using the Kochi Metro as a mode of public transportation. This information can be helpful for policymakers, transport planners, and other stakeholders in making decisions about the development and improvement of public transport systems. Secondly, the study focuses on the Kochi Metro, which is a relatively new mode of public transport in India. The study can help to promote sustainable transportation by identifying the factors that influence people's preference for using Kochi Metro as a mode of public transportation. This can help to reduce traffic congestion, air pollution, and carbon emissions.

1.3 STATEMENT OF PROBLEM

The research is being carried out on the subject "Factors Affecting Preference of Kochi Metro as a Mode of Public Transportation". It is done to determine the use of metro in a city like Kochi. This highlights the city's potential for economic growth, tourism, and general development. The Metro is anticipated to raise people's standards of living. It is crucial for the metro to expedite passenger origin since it faces intense competition from other forms of transportation. The opinions offered regarding the facilities are biased. The current study focuses on how satisfied the commuters are with the services they use.

What are the factors influencing preference of Kochi metro as a mode of public transportation.

What are the problems faced by the commuters while using Kochi metro

1.4 OBJECTIVE OF STUDY

- To analyse the factors influencing preference of Kochi Metro as a mode of public transportation
- To identify the problems faced by the commuters while using Kochi Metro

- To understand whether the schemes offered by the Kochi Metro Railway System is highly effective or not.

1.5 OPERATIONAL DEFINITIONS

- Trip - A single movement from origin to destination for a particular purpose is called a trip.
- Origin - The starting point of the trip.
- Destination - The place where the person wants to reach, the end of the trip.
- Commuter – A person who travels some distance to work on a regular basis.
- Metro user – A person who rides the metro more than 3 times a week for travel within the city. These trips should have been every week for the last one month.

1.6 SIGNIFICANCE OF THE STUDY

This study focuses on how the Kochi Metro Rail Project impacted the life of people of Kochi by contributing to the reduction of traffic congestions and improving the standard of living of the passengers. The project has been structured in such a way as to provide key suggestions for the improvements in the various services provided by Kochi Metro Rail project and to make aware public about the various facilities offered by them.

1.7 SCOPE OF THE STUDY

The study's focus is on how satisfied Kochi Metro Rail Ltd.'s customers are with its services. Every facet of metro service, including ticket accessibility, trip quality, employee behaviour, safety, and punctuality, is investigated at various levels of the study. The users of the Kochi Metro are taken as the sample population. The main goal of the research is to evaluate the standard of metro services.

1.8 RESEARCH METHODOLOGY

Research methodology is a manner of outlining how a researcher intends to carry out their research. It is a rational, methodical approach to a study issue. A methodology explains how a researcher will conduct the study in order to produce accurate, legitimate data that meet their goals and objectives. It includes the data they will gather, where they will get it, how they will gather it, and how they will analyse it.

SAMPLE: The sample unit of the study comprises of the people who are Metro users.

SAMPLING DESIGN: The sampling design used in this study is convenience sampling where the sample units are selected conveniently by the researcher.

SAMPLE SIZE: The study is conducted based on the responses of 100 sample units who are Metro users in Ernakulam region.

SOURCE OF DATA:

- Primary data – The primary data was collected with the help of structured questionnaire developed through google form which were sent to the respondents.
- Secondary data – The secondary data was collected through books, published journals and websites to substantiate the findings of primary data.

1.9 TOOLS OF ANALYSIS

The collected primary data was statistically processed, classified, tabulated and analysed by using mathematical tools and techniques like percentages, frequencies, pie diagrams, etc.

1.10 LIMITATIONS OF STUDY

- The information may contain personal bias.
- Lack of previous research studies on the topic.
- Time allotted for the study was limited.
- As the sample size is small, it might affect the generalisation of ideas.

1.10 CHAPTERISATION

CHAPTER 1 INTRODUCTION

CHAPTER 2 THEORETICAL FRAMEWORK AND REVIEW OF LITERATURE

CHAPTER 3 DATA ANALYSIS AND INTERPRETATION

CHAPTER 4 FINDINGS, SUGGESTIONS AND CONCLUSIONS

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CHAPTER 2

THEORETICAL FRAMEWORK AND REVIEW OF LITERATURE

A. THEORETICAL FRAMEWORK

The Kochi Metro Rail Project is the first metro in the country that connect rail, road and water transport facilities. Rapid transit is provided by the Kochi Metro in the Indian state of Kerala. It was one of India's quickest finished metro projects when it was opened to the public four years after work began. The Kochi metro project is the first metro in the nation to link transportation hubs for train, road, and water. A first phase construction budget of 51.81 billion yen (US\$650 million) is being used. During the annual Urban Mobility India (UMI) international conference, which the Urban Development Ministry hosts, Kochi Metro was selected the Best Urban Mobility Project in India in October 2017.

A 13.4 kilometers (8.3 mi) portion of the line from Aluva to Palarivattom was officially opened to passengers on June 17, 2017, by India's Prime Minister Narendra Modi. Construction on the project began in June 2013.

On October 3, 2017, a second 5 kilometers (3.1 mi) stretch from Palarivattom to the Maharaja's College metro station was opened. On September 3, 2019, Chief Minister Pinarayi Vijayan and Union Minister for Housing and Urban Affairs, Hardeep Singh Puri, officially opened a new 5.65 km (3.51 mi) segment from Maharaja's College Stadium to Thaikoodam. The Kochi Metro also has driverless train technology and plans to use it in the near future.

The Kochi Metro was praised for its choice to hire transgender people as well as Kudumbashree employees. It is the first rapid transit system in the world where all managerial functions are carried

out by women. A vertical garden is installed on every sixth metro pillar, solar electricity is installed, and non-motorized transportation routes are all part of the system's sustainability objectives. In addition to the standard tickets, it now uses a single card, timetable, and command and control system.

This debit card, used in conjunction with the Kochi One Mobile App, will give users access to all forms of public transportation, as well as the ability to make purchases and conduct online transactions. In the near future, the 'click and collect' feature will be introduced, allowing users to pick up items they have ordered online from metro stations. Every metro station in Kochi has a unique theme based on the history and geography of Kerala.

2.1 INDUSTRY DETAILS

The Metro-Rail segment in India is growing at a frantic pace with positive long-term prospects, supported by the government by way of business-friendly policies and financial support. The introduction of an extremely modern and effective Metro-Rail transportation system in India will be made possible by the use of cutting-edge technology and digitization.

In fifteen locations in India, there are currently 15 active rapid transit (often referred to as "metro" systems), with Delhi Metro being the largest. India had 15 systems and 806.26 kilometers of operating metro lines as of December 2022. Additional 568.15 km of lines are being built.

These rapid transit metro lines, with the exception of Kolkata (which operates in its own zone under Indian Railways), are not run by Indian Railways but rather by a different group of municipal authorities. The cities of Chennai and Hyderabad also have mass transport systems run by the Indian Railways, known as the Chennai MRTS and the Hyderabad MMTS, respectively. These systems are in addition to their metro systems. The Kolkata Metro began operations in 1984 and was India's first rapid transit system. Delhi Metro has the largest network in the entire country.

Due to metropolitan India's growing population, increased automotive traffic, and environmental pollution, the Metro Rail Mass Rapid Transportation Systems (MRTS) has gained widespread acceptance as an alternative to mass transportation. Construction projects for MRTS and Metro train are being carried out all throughout the nation, and the government has set up \$23,500 crore for them.

The fact that significant infrastructure investments will accelerate India's post-pandemic economic recovery is becoming increasingly clear. The infrastructure industry is anticipated to receive a major boost as a result of the numerous high-profile metro rail projects. Given the situation, the government has given the metro rail industry a sizable amount of funding.

According to the budgetary allotments, Chennai Metro Railway Phase 2 will receive 63,246 crores in investment, and Kochi Metro Railway Phase 2 will receive 11.5 km of central counterpart funding for a cost of 1,957.05 crores. The Nagpur Metro Project Phase 2 and the Nashik Metro Project will receive

money in the amounts of 5,976 crores and 2,092 crores, respectively, while the Bengaluru Metro Project- Phase 2A and 2B of 58.19 kilometers would receive funding of 14,788 crores.

With the beginning of new metro rail development in cities like Surat, Indore, Kanpur, Bhopal, Patna, etc., the focus has shifted to Tier 2 cities. Others are adding new train lines to their current railway network, while some are new construction projects. In Tier 2 cities and the outskirts of Tier 1 cities, two new cutting-edge transportation systems called MetroLite and MetroNeo are also set to deliver a metro rail network at a far lower cost.

The building of elevated viaducts and stations for the Indore and Bhopal Metros has recently been put out to tender by MPMRCL in an effort to improve the metro connection in Madhya Pradesh.

Within the next ten years, it is predicted that more than 600 million Indians would reside in cities and contribute 34% of India's GDP. More and more cities will need to build effective Metro-Rail networks with low construction costs, optimized operations and maintenance costs, and maximum income generation. Clean, non-polluting urban transportation will be essential.

Metro-Neo is a promising example of a money- and energy-efficient system in Tier 2 and Tier 3 cities, decreasing the necessity for more expensive metro rail systems. Innovations like this will be important for the nation. The Metro-Neo articulated buses would have rubber tyres, run on a designated path on roadways, and even on higher gradients and sharper turns, all of which make them an excellent alternative to the traditional metro rail. They don't even require a viaduct and are substantially lighter than metro trains.

Government programmes like Make in India and Atma-Nirbhar Bharat have a big impact on metro rail projects. Rapid development of indigenized metro rail projects is taking place in a large number of Indian cities. Maha Metro has taken care to use more than 70% domestic content in the whole project. With the exception of imported Head Hardened Rail and Fasteners, which are not made in India, indigenisation in the civil portion is 95% rather than the 80% in the policy mandate. Both the Nagpur and Pune Metro Rail projects have used this.

With the debut of i-ATS, a crucial sub-system of the signalling system, DMRC made a significant stride toward the Make in India programme by producing an indigenously constructed CBTC (Communication Based Train Control) based signalling technology for Metro railway.

2.2 FOUNDERS AND CEO

Elattuvalapil Sreedharan who served as the managing director of Delhi Metro also led the formation of Kochi Metro.

2.3 HISTORY AND CONCEPTION

The initiative was conceived in 1999 by the E.K. Nayanar-led administration. The feasibility study for a metro rapid transport system in Kochi was given to Rail India Technological and Economic Services (RITES) at the cabinet meeting of the former Left Democratic Front (Kerala) administration on July

21, 1999. Rail India Technological and Economic Services started the techno-economic feasibility assessment for a Metro Rapid Transit System in Kochi in 1998, and it was finished in 1999. The state government received the techno-feasibility study results in 1999.

The administration under E.K. Nayanar came up with the idea in 1999. On July 21, 1999, during the cabinet meeting of the previous Left Democratic Front (Kerala) administration, Rail India Technological and Economic Services (RITES) received the feasibility study for a metro fast transport system in Kochi. The techno-economic feasibility study for a metro rapid transit system in Kochi was initiated in 1998 by Rail India Technological and Economic Services and completed in 1999. (RITES). The findings of the techno-feasibility study were delivered to the state government in 1999.

In accordance with directives from the Planning Commission and the Union Government for the implementation, operation, and maintenance of the metro project, the Cabinet decided to establish a special purpose vehicle (SPV) called Kochi Metro Rail Limited (KMRL).

The project was approved by the Public Investment Board (PIB) on March 22, 2012, pending final Cabinet approval.

The cost-sharing contribution from the Union Government would be 20.26%, or 1,002.23 crore (US\$130 million). At a KMRL board meeting on March 28, 2012, it was decided to give Delhi Metro Rail Corporation the task of working on the Kochi Metro rail project (DMRC). The route was designed with 22 metro stops.

The Union Government finalised its approval of the project on July 3, 2012. Then KMRL's managing director, Tom Jose, said: "We will now sit down with our cherished partner, DMRC, and map out the best course of action while consulting with the former DMRC Chief, E Sreedharan. Within a period of three to four years, we hope to finish the project."

The Board of Directors of KMRL was reformed by the state government on August 14, 2012. Tom Jose was replaced as the Managing Director by Power Secretary Elias George. Jose and Sreedharan's disagreements are thought to be what motivated the choice. Oommen Chandi, who was the chief minister at the time, said that it was a result of a managerial choice.

The Chief Secretary, Finance Secretary, and Principal Secretary would make up the remaining members of the board (Water Resources).

As recommended by DEA, the Director Board of Kochi Metro Rail Limited entrusted MD, KMRL with finding other finance sources for the project (Department of Economic Affairs). On March 18–19, 2013, as part of their pre-appraisal mission, officials of the French Development Agency (AFD) met with the KMRL team.

With the help of other senior officials, including KMRL MD Elias George, the agency had in-depth conversations. To better comprehend the project, they also went to the alignment from Aluva to Pettah. The team included Mrs. Aude Flogny, Regional Director for South Asia, and Mr. Gautier Kohler, Project Coordinator for India. A formal detailed-appraisal mission team visited Kochi from April 25–27, 2013, based on the inputs from the AFD's pre-appraisal mission team. Mr. Xavier Hoang, Senior

Transport Expert for AFD, Aude Flogny, Regional Director for AFD in South Asia, and Gautier Kohler, Project Coordinator, made up the team.

The crew looked over the construction site and had conversations on funding the Kochi Metro Rail project. By the end of December 2013, Kochi Metro Rail Limited hopes to receive a formal commitment from the French financial institution Agence Française de Développement (AFD). According to AFD, they might offer a loan up to 130 million Euros, or roughly Rs. 10 billion.

A contract was signed between the DMRC and the Director Board of KMRL on April 4, 2013.

The State Cabinet authorised the 22 proposed stations for the Kochi Metro on June 19, 2013.

On September 13, 2012, the project's foundation stone was laid by the late Prime Minister Manmohan Singh. Following an official launch ceremony at the Jawaharlal Nehru Stadium at 10:30 am on June 7, 2013, piling construction for the viaducts at Changampuzha Park commenced as part of the Kochi Metro rail project. The State Government announced at the opening ceremony that the metro would be extended by 1.5 kilometers from Pettah to Tripunithura, On September 30, 2013, Soma Constructions started piling for the construction of Kaloor, the first station of the Metro. Aluva was the next station where piling work was done.

Stations and viaducts were built by a number of businesses, including Era Infra Engineering, Larsen & Toubro, Cherian Varkey Construction Company-RDS, SP Singla Constructions, and Soma Constructions. The contract to build the viaduct and 6 stations on the Kalamassery-Stadium route was given to Larsen and Toubro (L&T) in April 2013 at an estimated price of 4 billion (US\$50 million). The contract for the demolition of the current ROB and reconstruction of the north overbridge into a four-lane road with metro viaducts was given to Cherian Varkey Constructions-RDS (CVCC-RDS JV).

Sand in the amount of 4.5 to 500,000 cubic meters was needed to build the metro. On each of the sixth pillars of the metro rail line, KMRL has installed a vertical garden.

On July 12, 2014, early in the morning, the first concrete "U" girder for the Kochi Metro Rail was successfully placed. The girder was put in in Pulinchode, which is close to Aluva. The Metro Casting Yard in Kalamassery is where the "U-shaped" girder was cast. Around 7 o'clock on Friday night, it was moved out of the yard with the aid of two enormous cranes and specialised trailers brought in from Mumbai.

The girder arrived at the location at midnight and was placed with the aid of 350-ton and 400-ton cranes.

On January 23, 2016, Chief Minister Oommen Chandy signalled the start of the first test run. The trial run of the three-car train set was successful. [109] On February 27, 2016, the Kochi metro's maiden test run, which covered a distance of 1 km (0.62 mi) between Muttom Yard depot and Kalamassery, was done (6.2 mph).

On December 8, 2016, the Research Designs and Standards Organization (RDSO) authorised the metro to run at a top speed of 80 km/h (50 mph). The Kochi Metro received the go-ahead to launch on May 8th, 2017.

A consortium made up of Cherian Varkey Construction Company and Vijay Nirman Constructions was given the go-ahead to build the Kochi Metro from Maharaja's College to Ernakulam South and from Kunnara Park to Pettah in July 2017.

Thripunithura extension

On January 27, 2014, KMRL authorised the extension of the metro to Tripunithura. The 2 km (1.2 mi) extension will cost an additional 3.23 billion (US\$40 million), according to Union Urban Development Secretary and KMRL Chairman Sudhir Krishna, who spoke to the media following the meeting. The route will have two extra stops close to SN Junction and Vadakkekotta as a result of the extension. [114] The Aluva-Pettah segment will be finished after the extension. [115] Based on the preliminary RITES report, the State Cabinet approved the Tripunithura extension on March 5, 2014. [116]

Phase II: Expansion of Kakkanad Infopark

KMRL started the land acquisition procedure in November 2016 in preparation for extending the metro up to Infopark. The Kakkanad-Airport corridor will be made 22 meters wide by KMRL, and metro pillars will be built in its middle. Additionally, the junctions at Palarivattom, Palarivattom Bypass, and Collectorate will be enlarged. The 11.2 km (7.0 mi) project, which is expected to cost 2,024 crore (US\$250 million), will connect Infopark to Jawaharlal Nehru International Stadium via Kakkanad. In March 2017, Ernakulam District Collector K. Mohammed Y. Safirulla declared that the project's land review procedure was complete.

On May 17, 2017, the State Cabinet authorised the Kochi Metro's Phase II. It will probably cost 2,577 crore (320 million US dollars). In contrast to Phase I, the KMRL will carry out Phase II on its own without the help of the DMRC. Phase II includes an 11.2 kilometer (7.0 mi) line that runs via Kakkanad and the Jawaharlal Nehru International Stadium to reach Infopark. Palarivattom Junction, Palarivattom Signal, Chembumukku, Vazhakkala, Kunnumpuram, Kakkanad Junction, Kochi Special Economic Zone, Chittethukara, Rajagiri, InfoPark I, and InfoPark II are the 11 stations that will be on the route.

Phase III: Extension of the airport

The extension of the line from Aluva to the Cochin International Airport at Nedumbassery is one of the metro's third phase's planned improvements. The State Government was asked by the airport authority to construct the metro link in the second phase, but the government chose to do so in the third phase.

2.4 NAME AND LOGO

The name 'Kochi Metro Rail Project' is abbreviated to KMRL and is commonly referred to as the 'Kochi metro'.

Figure 2.1 Kochi Metro Logo



Chief Minister Oommen Chandy presented the new Kochi Metro logo and coach design.

According to KMRL sources, the "interim" logo, which was modelled by the Malayalam letter "Ka" (which stood for Kochi), opened the way for the updated logo featuring the acronym "KM," which stands for the Kochi metro and its integration with all means of public transportation. The "K" will be turquoise, while the "M" will adopt a varied tint based on interaction with each form of transportation. Thus, light blue will demonstrate its integration with the water bus, violet with the bus, dark blue with the bicycle, and red with the taxi services. Yellow will be the metro.

2.5 SERVICES

Kochi Metro Lines Routes

All around the city, Kochi Metro Rail services are now accessible. Given that the entire network of connecting lines, which consists of many phases, is above ground, it is a totally elevated metro system (I, IA IB, II). Currently, there are two lines in use by the Kochi Metro:

Blue line: Aluva -Petta

Pink line: JLN Stadium – Infopark II

Blue Line: Phase I of the Kochi Metro Route

Phase I of Kochi Metro has a single line that went live on June 17, 2017. The line often travels in a northeast-southwest direction before turning east, forming a semicircle. 22 stations are currently open along the 23.8 km-long line. Each stop along the route includes a different theme centred on the culture and tradition of the lush green metropolis of Kerala, ranging from the wildlife in the Western Ghats to the local cuisine of Kochi.

Blue Line: Phase IA of the Kochi Metro Route (Under Construction)

Petta and SN Junction are connected by 1.78 km of Phase 1A of the Kochi Metro. Two stations, Vadakkekotta and SN Junction, as well as the cutting-edge Panamkuttu Bridge are being built as part of Phase 1A.

Blue Line: Phase IB of the Kochi Metro Route (Under Construction)

Phase 1B of the metro network's extension will be 1.16 km long and connect SN Junction to Tripunithura Terminal. The total cost of building this Kochi Metro route will be INR 162.98 crore.

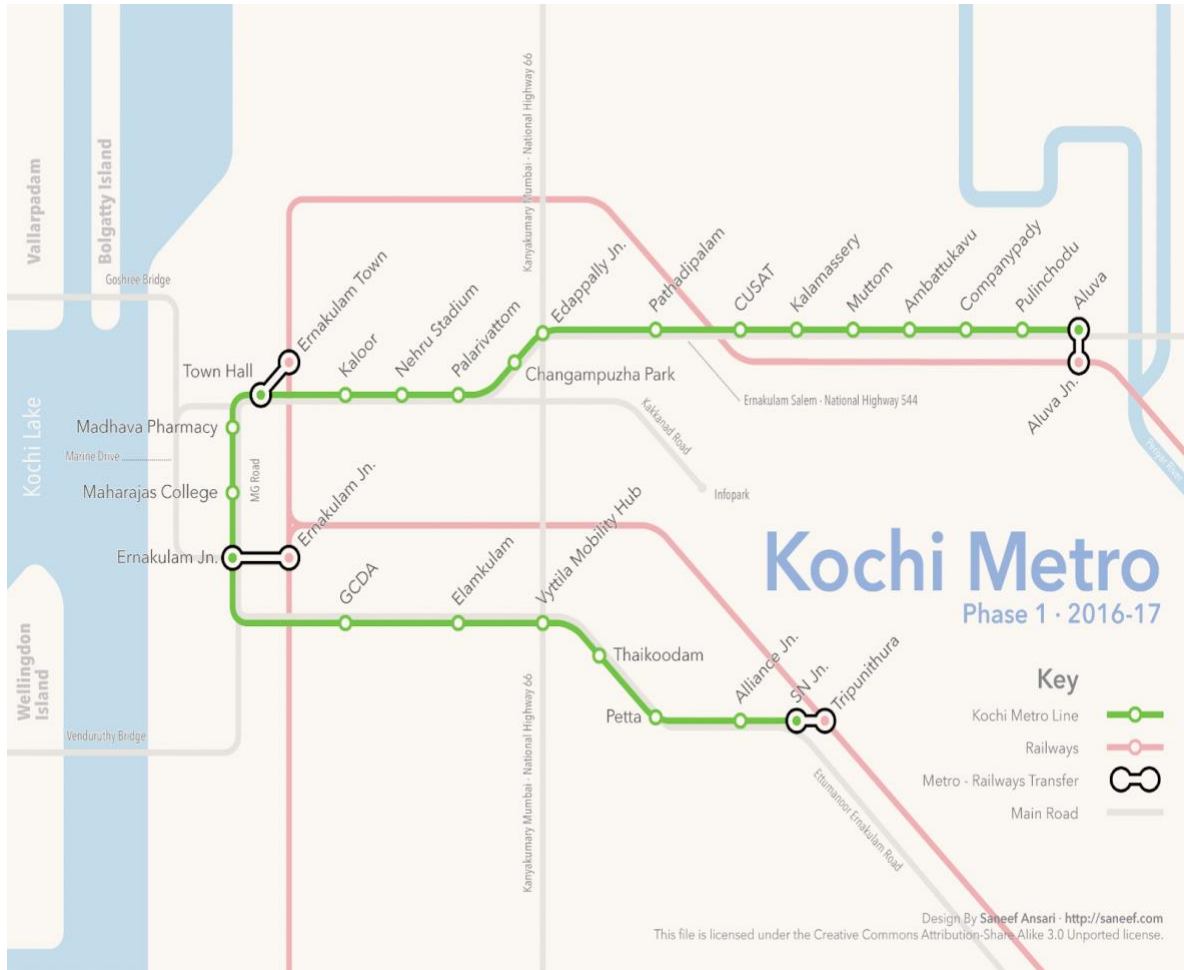
Pink Line: Phase II of Kochi Metro

The Kochi Metro Phase II project, which comprises a new 11.2-km Pink Line and 11 stops, was approved by the Kerala government in July 2018. This phase includes building a spur line that connects Kakkanad's Infopark II and Jawaharlal Nehru Stadium.

Kochi Metro Route Map

In Kochi, formerly known as Cochin, there is a quick transit system called Kochi Metro. The Kochi community is now only served by one phase, but two further phases are being planned. With trials starting in late April 2022, the Kochi Metro's Petta to SN Junction section is expected to open in June 2022. On the map shown below, you can see the metro routes, stations, and major attractions:

Figure 2.2 Kochi Metro Route Map



Blue Line: Phase I Metro Route

The Blue Line Stations are:

- Aluva
- Pulinchodu
- Companypady
- Ambattukavu
- Muttom
- Kalamassery
- Cochin University
- Pathadipalam
- Edappally
- Changampuzha Park
- Palarivattom
- JLN Stadium
- Kaloor
- Town Hall
- M.G Road
- Maharaja's College
- Ernakulam south
- Kadavanthra

- Elamkulam
- Vyttila
- Thaikoodam
- Petta
- Alliance Junction
- SN Junction
- Thripunithura

Pink Line: Phase II Metro Route

The Pink Line Stations are:

- Jawaharlal Nehru Stadium
- Palarivattom Junction
- Palarivattom Bypass
- Chembumukku
- Vazhakkala
- Padamughal
- Kakkanad Junction
- Cochin SEZ
- Chittethukara
- KINFRA
- InfoPark 1 / Smart City 1
- InfoPark 2 / Smart City 2

Kochi Metro Fare


The Kochi Metro provides a simple, affordable means of getting around this magnificent city. You can purchase a single-entry ticket at the metro station right away for each journey. If you are travelling in a group, group tickets are also an option. At the ticket desk, you can purchase group tickets.

The Blue Line has an INR 10 minimum fee.

The Blue Line's maximum fare is INR 60.

The cost to travel from Aluva Metro Station to Cochin University Metro Station, JLN Stadium Metro Station, and Petta Metro Station is INR 30, INR 40, and INR 60, respectively.

Figure 2.3 Kochi Metro fare



	Aluva	Pulinchodu	Companypady	Ambattukavu	Muttom	Kalamassery	Cochin University	Pathadipalam	Edapally	Changampuzha	Palarivattom	JLN Stadium	Kaloor	Lissie	MG Road	Maharajas	Ernakulam South	Kadavanthra	Elamkulam	Vytilla	Thaikoodam	Petta
Aluva	10	10	20	20	20	30	30	30	40	40	40	40	50	50	50	50	50	60	60	60	60	60
Pulinchodu	10	10	10	20	20	20	30	30	30	40	40	40	40	50	50	50	50	50	60	60	60	60
Companypady	20	10	10	10	20	20	20	30	30	30	40	40	40	40	50	50	50	50	50	60	60	60
Ambattukavu	20	20	10	10	10	20	20	20	30	30	30	40	40	40	40	50	50	50	50	50	60	60
Muttom	20	20	20	10	10	10	20	20	20	30	30	30	40	40	40	40	50	50	50	50	50	60
Kalamassery	30	20	20	20	10	10	10	20	20	20	30	30	30	40	40	40	40	50	50	50	50	50
Cochin University	30	30	20	20	20	10	10	10	20	20	20	30	30	30	40	40	40	40	50	50	50	50
Pathadipalam	30	30	30	20	20	20	10	10	10	20	20	20	30	30	30	40	40	40	40	50	50	50
Edapally	40	30	30	30	20	20	20	10	10	10	20	20	20	30	30	30	40	40	40	40	50	50
Changampuzha	40	40	30	30	30	20	20	20	10	10	10	20	20	20	30	30	30	40	40	40	40	50
Palarivattom	40	40	40	30	30	30	20	20	20	10	10	10	20	20	20	30	30	30	40	40	40	40
JLN Stadium	40	40	40	40	30	30	30	20	20	20	10	10	10	20	20	20	30	30	30	40	40	40
Kaloor	50	40	40	40	40	30	30	30	20	20	20	10	10	10	20	20	20	30	30	30	40	40
Lissie	50	50	40	40	40	40	30	30	30	20	20	20	10	10	10	20	20	20	30	30	30	40
MG Road	50	50	50	40	40	40	40	30	30	30	20	20	20	10	10	10	20	20	20	30	30	30
Maharajas	50	50	50	50	40	40	40	40	30	30	30	20	20	20	10	10	10	20	20	20	30	30
Ernakulam South	50	50	50	50	50	40	40	40	40	30	30	30	20	20	20	10	10	10	20	20	20	30
Kadavanthra	60	50	50	50	50	50	40	40	40	40	30	30	30	20	20	20	10	10	10	20	20	20
Elamkulam	60	60	50	50	50	50	50	40	40	40	40	30	30	30	20	20	20	10	10	10	20	20
Vytilla	60	60	60	50	50	50	50	50	40	40	40	40	30	30	30	20	20	20	10	10	10	20
Thaikoodam	60	60	60	60	50	50	50	50	50	40	40	40	40	30	30	30	20	20	20	10	10	10
Petta	60	60	60	60	60	50	50	50	50	50	40	40	40	40	30	30	30	20	20	20	10	10

Kochi1 Axis Bank Mobile Application

Kochi1 is a mobile app for the Kochi Metro that Axis Bank Ltd. released in January 2022. To enable consumers to manage their Kochi1 Metro Cards, the bank released this mobile application. The list of services that the Kochi1 Metro Card application provides for users is provided below.

QR Ticket: Using the Quick-Book feature in the Kochi1 mobile app, users with or without a Kochi1 Metro Card can purchase a one-way or roundtrip QR ticket. These tickets can be purchased using the customer's selected payment method, such as Net Banking, Credit Cards, Debit Cards, or UPI.

Refunds are simple: With the Kochi1 Metro Card app, users can easily cancel their tickets and receive refunds for them.

Ticket Status: Using the Kochi1 smartphone application, users may also check the status of their tickets before leaving or while on the road.

Recharging a Kochi1 Card is possible using Net Banking, Credit Cards, Debit Cards, or UPI, depending on the user's preferred payment method.

Kochi Metro Information: The Kochi1 mobile app gives consumers quick and simple access to metro information, including fare, timetable, route, and more.

Few major features and benefits of the Kochi1 Axis Bank mobile application:

Onestop Platform: The Kochi1 Axis Bank mobile application serves as a one-stop shop for all services associated with the Kochi Metro. This smartphone application allows users to perform practically everything, including booking tickets and checking their card balance and recharge status.

Simple Navigation: Users can browse the appropriate section and obtain the needed information with only a few clicks using the Kochi1 Axis Bank mobile application's simple navigation function.

Real-time updates are provided by a connection between the Kochi1 Axis Bank mobile application and the Kochi Metro internet portal. Through the smartphone app, you can easily obtain all the details regarding train schedules and other changes.

Feedback and Suggestions: In the Kochi1 Axis Bank mobile application, users have access to an area where they may provide comments and ideas for improving Kochi Metro services.

Kochi Metro Mobile Ticketing System

By using the Kochi1 mobile application on their cell phones, commuters utilising the Kochi Metro can purchase tickets.

Step 1: Commuters can download the software from the App Store or the Google Play Store.

Step 2: An mPIN is produced after you register for an account on the app.

Step 3: Select your boarding and destination stations.

Step 4: After choosing the ticket choice, you can choose the digital payment method.

Step 5: After making a payment, a QR code will be available for scanning at the entrance to the metro platform.

Kochi Metro Timing

The Kochi Metro helps you commute more quickly. In addition to being a less expensive option, Kochi Metro also keeps you from using clogged roads by enabling you to get from one area of the city to another in a short amount of time.

The Kochi Metro is open from 6 AM to 10:30 PM on weekdays and from 8 AM to 10:30 PM on weekends.

The distance between Aluva Metro Station and Petta Metro Station may be travelled in 21 minutes.

Pathadipalam to Petta is covered in 7 minutes, and Aluva to Cochin University is covered in 16 minutes.

Metro Smart Parking

The Kochi Metro modernises the conventional parking method utilised in lots with technology, making parking facilities at metro stations run more effectively.

The objective is to employ technology to make parking at metro stations safe, simple, and convenient. Modern cameras and sensors monitor the security in the Kochi Metro parking lots.

All stations are expected to have free parking, with the exception of Aluva, Edappally, MG Road, Kalamaserry, and Cusat. Aluva, Edappally, MG Road, Kalamaserry, and Cusat station parking lots all charge a small fee when security personnel are needed to manage the parking.

If someone parks their car in the parking lot for more than two hours and does not use the Kochi Metro, they will be fined INR 30.

Kochi Metro Public Bicycle Facility

Kochi Metro Rail Limited (KMRL) launched a Public Bike Sharing (PBS) system from the Jawaharlal Nehru Stadium Metro Station in Kochi to assist commuters in getting to the stations. Travelers can register and utilise bicycles from the docking station using the system's MYBYK app.

Additionally, commuters can rent bicycles from a close-by docking station to get to the following metro station, and then from a departing metro station to get to adjacent areas.

With ambitions to add 700 more cycles and 65+ Hubs in the upcoming months, the firm has placed 300 cycles across 35 MYBYK Hubs located throughout the city. The 35 Hubs now have 21 metro stations.

Kochi Metro Card - the Kochi1Card

In partnership with Axis Bank, Kochi Metro has introduced the Kochi1Card, which can be used for a variety of things, including getting immediate access to Kochi Metro and receiving a 33% discount on the trip passes you buy to use Kochi Metro.

In addition to advantages relating to the metro, Kochi1Card can be used for travel, shopping, and dining. Additionally, you can use this single card in Kochi's retail or internet establishments.

Other Facilities at Kochi Metro Stations

The metro stations are equipped with solar power, an uninterruptible power supply (UPS) system, CCTV cameras, and a manually operated ticket office machine that issues paper tickets and smart cards to passengers.

Smart cards and tickets with RFID or QR codes are used in conjunction with an automatic fare collection system to collect fares. Additionally, each station has amenities specifically designed for travellers with disabilities, such as tactile tiles and engraved walkways for the blind, restrooms that can be used by wheelchairs, and elevators with Braille and auditory signalling.

For enhanced signalling and communication, the Kochi Metro also makes use of the Computer Based Interlocking (CBI) technology. A protection and warning mechanism is included into the automatic

signalling system. The telecommunications infrastructure includes public address (PA) systems, SCADA, railway radio, and fiber-optic connections.

A new electric bus service called Pavan Doot was introduced by KMRL in February 2020. It travels every 40 minutes from Aluva Metro Station to Cochin International Airport.

2.6 BUSINESS MODEL

Kochi Metro Rail Project is a fast transit metro system primarily focused on quick and convenient public transportation between key locations in Kochi city. These major locations are connected by 25 metro trains providing passenger service 16.5 hours a day except on Sundays it works 14.5 hours.

2.7 REVENUE MODEL

The company's revenue streams include the collecting of passenger fare, the licensing or leasing of real estate and ad spots, and the provision of consulting services to other organisations.

2.7.1 Ticketing revenue

This is the major source of revenue of KMRL. It includes basic ticket charges starting from Rs.10 to Rs.60 besides special pass for students at a concessional rate. It also comprises of overstay charges and other fines and penalties.

2.7.2 Non-ticketing revenue

The Kochi Metro is figuring out creative ways to win people over while also increasing income. One such endeavour is the recent decision to allow wedding photography in metro stations and on trains. The Kochi Metro has also unveiled fresh marketing strategies that would help local companies.

A new draw for couples is the Kochi Metro opening its doors for wedding photo shoots and "save-the-date" videos. A Kochi Metro official claimed that both stationary and moving trains can be used for picture shoots. The prices range from Rs 5,000 to Rs 17,500 and depend on the time and coaches chosen. The official indicated that security deposits are required in order to obtain approval and that they will be reimbursed after the shoot is finished.

Wedding photo shoots and promotional events have also been mentioned as potential future endeavours, along with consulting services and water metro tourism. With an increase in everyday travellers, it is intended to produce income. The daily commuter population even reaches 73,000 on some days.

The Kochi Metro has also unveiled fresh marketing strategies by providing tempting discounts to companies operating within a 3 km radius of the metro path. Shop owners and business organisations have a wide range of promotional alternatives on the Metro at their disposal to market their goods and services. Station and train announcements, poster displays, LCD displays, and car displays with logos

printed on them are all promotional choices. The prices per square foot range from 50 to 25,000 rupees.

2.8 REVENUE AND TURNOVER

According to KMRL's annual report, the Kochi Metro Rail Limited (KMRL) lost Rs. 339.55 crore for the fiscal year 2021–2022. In the preceding year, KMRL recorded a loss of Rs. 334.89 crore.

The good news is that KMRL's operating costs have significantly decreased during the past fiscal year. From Rs 61 crore in the 2020–21 fiscal year to Rs 37 crore in the 2021–22 fiscal year, the operational expense decreased.

The second wave of the Covid-19 pandemic had a negative impact on the company's operations, both in terms of ridership and alternative sources of income. On May 8, 2021, metro services were terminated till June 30, 2021, in accordance with government regulations. In the fiscal year 2021–2022, 96,94,014 passengers travelled, resulting in fare box sales of Rs 30.78 crore.

In order to combat the unfavourable situation during this difficult time, KMRL had implemented a number of proactive measures, including offering discounts during off-peak hours, introducing a feeder bus service using pollution-free e-buses for the first and last mile connectivity, and providing free Wi-Fi services to commuters on the chosen Metro train.

2.9 FUNDING AND INVESTORS

KfW funding totals Rs. 908,76 lakhs, while the GoK's contribution is Rs. 156,07 lakhs. The new financing request has not yet been approved by KfW.

In 2021–2022, the GoK released Rs. 57,30 lakhs (Rs. 82,00 lakhs the year before), and the KfW released Rs. 38,86.16 lakhs (Previous year - Rs.30,10 lakhs). Up till 31.3.2022, a total of Rs. 295,62,84 lakhs have been released (of which, Rs. 159,30 lakhs came from the GoK and Rs. 136,32,84 lakhs from KfW).

The overall spending up to March 31, 2022, is Rs. 210,76,34 lakhs (compared to Rs. 102,75,20 lakhs up to the prior year). Up until 31.3.2022, contractors received an advance payment of Rs. 87,24,32 Lakh (previous year Rs.79,50.20 lakhs).

GoK asked for the KfW loan drawdown time to be extended until December 2023.

Upon payment of compensation costs totaling Euro 290005, KfW consented to extending the distribution term until December 30, 2023.

For the purpose of operating and maintaining the Kochi Water Metro Project, GoK approved the formation of an SPV (Special Purpose Vehicle) with 74% GoK equity and 26% KMRL sweat equity and an allowed share capital of Rs. 4,90 lakhs. In accordance with this, M/s Kochi Water Metro Limited (KWML) was established on July 14, 2021. The firm and GoK also signed a Memorandum of Understanding (MOU) outlining their respective commitments.

Table 2.1 Funding pattern approved by GOI & GOK

Sl. No	Particulars	GOI		GOK		TOTAL	
		%	RS/Crore	%	RS/Crore	%	RS/Crore
1	Equity by GOI & GOK	15.24%	753.73	15.24%	753.73	30.48%	1507.46
2	SD for land cost by GOK	0.00%	0.00	13.59%	672.00	13.59%	672.00
3	Additional SD for Central taxes by GOI (50%) & GOK (50%)	5.02%	248.50	5.02%	248.50	10.04%	497.00
4	Property Development	0.00%	0.00	1.98%	98.00	1.98%	98.00
	Sub Total	20.26%	1002.23	35.83%	1772.23	56.09%	2774.46
5	JICA loan @ 1.4% PA/Market borrowing @12 % PA	43.88%	2170.00	0.00%	0.00	43.88%	2170.00
	Total cost	64.14%	3172.23	35.83%	1772.23	100.00%	4944.46
6	Add: State taxes borne by GOK				237.33		237.33
	Grand Total cost including State taxes		3172.23		2009.56		5181.79

2.10 MARKETING AND BRANDING

KMRL aims to connect Kochi. They realise that in order for prosperity to happen, connection is very necessary. It involves establishing a flow that stimulates growth. linking all points of the metropolis. establishing direct and indirect links among individuals, locations, and opportunities. By harmoniously integrating with the environment, KMRL works to maintain Kochi's green status.

A world-class transportation system that is accessible to all, demonstrates what Kochi genuinely stands for, and acts as an icon for the distinctive city it serves is something that KMRL is fiercely devoted to providing. In addition to redefining Kochi's transportation, KMRL is paving the way for a better future for the entire city.

This goal gave rise to the concept of "Connect to Prosper," which encourages relationships among individuals, between people and the city, and between people and opportunities.

Tata Elxsi conducted research to establish the traveller personas, categorising metro passengers, and identifying their requirements and goals in order to translate Kochi Metro's vision, "Connect to Prosper," and to develop an integrated passenger experience.

The investigations produced a number of themes, which Tata Elxsi then translated into improved traveller experiences and a number of beneficial and distinctive signature offerings for the Kochi metro brand.

This involved creating a brand identity; to create this updated Brand Identity, Tata Elxsi collaborated with Brash Brands. The touch points that permeate every passenger opportunity. To entice users to use the Metro, a variety of digital elements including the Kochi Metro mobile application, the user interface of the ticket vending machine, the sub-branding of smart cards, and digital signage were created.

To capture the essence of Kochi, intuitive built space experiences, appealing station interiors, relevant information design, station furniture, train livery, and brand identity and collaterals were also designed.

The Kochi Metro was intended to be a more seamless transportation experience and expand beyond mere utility.

2.11 SOCIAL MEDIA PRESENCE

Over the years, KMRL has significantly increased its social media presence. They have 461K followers on Facebook, over 11 thousand Twitter followers, and over 30 thousand Instagram followers. They display amazing social media management; they frequently interact with their audience and keep them updated.

2.12 CHALLENGES

Once the construction began in 2012, disputes cropped up one after another. The city's crowded highways were clogged with construction, and the problem got worse during the monsoon.

There was no land acquisition act during its development for over a year and a half. The Center modified the 120-year-old Land Acquisition Act in 2013, but the state didn't create the necessary guidelines until 2015. According to Elias George, managing director of Kochi Metro Rail Ltd (KMRL), the organisation tasked with building the metro, as a result, the district collector had to interact with each land owner whose land had to be bought for the metro and bargain. Furthermore, Kerala is renowned for being strict with large projects; even government projects struggle to get single-window clearances and timely approval.

A segment of the article attacked the premise of having a metro, noting that the majority of metros around the world are merely losing money.

2.13 ACHIEVEMENTS

- 50K+ App downloads.
- The number of passengers travelled during the year was 96,94,014.
- During the year 62,311 trips were run, clocking 14,75,721 kilometers with an average punctuality of 99.96%.
- Invited Expression of Interest (EoI) for the Bliss City project envisaged on 31 acres at Kakkanad to raise alternative revenue for the Kochi Metro's operation and maintenance.

2.14 AWARDS

- Ministry of Housing and Urban Affairs Ministry's Award of excellence in the category of Best Non-Motorised Transport project in India for it's 'Edappally Junction improvement and pedestrian safety project'.
- Central Government Award for Seamless Transport Connectivity.
- Kochi1 Anthem for the promotion of Kochi1 card won the Best Branded Content Award by Brand Wagon.
- Major contributor to Kerala winning the award for 'City With Most Sustainable Transportation System'.
- Kochi Water Metro won the Global Electric Boat Award.

2.15 FUTURE PLANS

Phase II of the Kochi Metro Rail Project : Phase II of the Kochi Metro Rail Project was approved by the Union Cabinet Meeting, which was held on September 8, 2022 and presided over by Prime Minister Narendra Modi. According to latest sources, the project will include 11 stations totaling more than 11.2 kilometers in length. The Kochi Metro Rail Project would cost a total of Rs. 1,957 crore. The building work for this phase, including the widening of the Seaport Airport route, is progressing well, according to the after-cabinet meeting. Other railway development projects in various significant Indian cities have received cabinet approval. Non-Motorized Transport (NMT) : The Kochi Non-Motorized Transport (NMIT) Master Plan, created by KMRI, includes the designation of historic NMT corridors within a 2-kilometer buffer zone on either side of the metro corridor. This initiative seeks to improve cycling conditions, bicycle parking facilities, and urban rawl through place-making by creating safe, comfortable walkways. Additionally, this will serve as the station's final male connection. Following numerous talks with bus owners and operators, 7 bus companies made up of 1000 private buses have been formed.

As a trial project for this endeavour, KMRL built a 350-meter-long walkway and cycle track on Shahab Thangal Road in Panampilly Nagar.

Feeder buses and taxis : At some metro stations, KMRL has begun operating feeder buses, taxis, and rickshaws—preferably electric or CNG—to operate an environmentally friendly transportation system for the city. In a pilot project, Kochi Metro has also proposed a Public Bike Sharing (PBS) programme with 10 docking stations and seven cycles each.

Metro Terminals: Kochi Metro Rail Limited has constructed three water metro terminals in Kochi's three areas, namely Kakkanad, Vyttila, and Eloor (KMRL). These terminals are prepared for usage and completely furnished. All of the city's terminals, including Vypeen, Bolgatty, High Court, South Chittoor, and Cheranalloor, will be finished by June 2022.

Water Metro Service: On the busy Vypeen-Bolgatty-High Court line, the KMRL plans to introduce its first water metro service. Cochin Shipyard Limited (CSL) gave KMRL one of the 23 boats for the service.

2.16 SWOT ANALYSIS

Strengths

- It is a monopoly and acts as a pro-active government
- It helps reducing traffic and pollution
- Numerous discount offers
- Kochi1 card is a major speciality

Weaknesses

- It had too much cost
- It costs more than bus travelling
- Lot of difficulties like various government norms while acquiring land
- Low connectivity across Kochi city

Opportunities

- The growing demand for public transport
- Attracting both domestic as well as international tourists
- It has no close substitutes

Threats

- Lack of adequate infrastructure in city
- It has a threat of security

- Less ridership than that what estimated can affect further estimated revenue which can affect adversely in future plans

2.17 ADVANTAGES OF KMRL

- Reduce traffic congestion
- Provide safe and rapid transportation to commuters
- Reduce pollution and noise levels
- Create employment opportunities for local people
- Secure transportation for ladies during late hours
- Assured transportation during frequent hartals in the state
- Reliable transportation in terms of reaching a destination on time
- Substitute for private vehicles usage, therefore saving fuel and vehicle maintenance

2.18 DISADVANTAGES OF KMRL

- High initial cost
- Blockage to the skyline
- Road blockages during construction period
- Environmental Impact
- Electricity consumption
- High fares in comparison to other public transportation
- Time for construction
- Destruction of nature for construction of metro

B. LITERATURE REVIEW

2.19 Govind V, Lijo K Thomas and Dr. A.S. Ambily conducted a study on the topic the Kochi metro opportunities, challenges and impact on public: a study at Ernakulam district. In the modern scenario infrastructure development plays an important role. Infrastructure development contributes to the GDP of the country. With the upcoming Metro all sections of society are benefited. Employment opportunities pollution reduction and reduce in traffic block etc. are some of the benefits. This paper intent to show the impact that will be created among the common public and also the challenges that will be faced by both the authority and common public.

2.20 C. Prem Sankar, R. Vidyaraj, V. Midhun Raj and K. Satheesh Kumar have done a research on a strategic analysis of road network of the buffer area of Kochi metro rail using tools of social network analysis. In this paper we use tools of social network analysis to study the road network of

Kochi in the backdrop of the Kochi Metro Rail project for designing optimal public transportation networks. This study shows how the road transport system can be restructured to act as an efficient feeder mechanism for the metro rail transport system. We visualized clusters and computed various network characteristics such as centrality, density etc. and also have verified the existence of small world behaviour. This will help to eliminate the future bottlenecks in the existing road network by supporting traffic density reduction and enhancing connectivity to Kochi Metro rail stations.

2.21 Aswathi P and Anju Wilson have studied on Critical Performance Factors Affecting Kochi Metro Rail Project. We are living in a fast-developing society. Every day we are exposing to new technology and development in our locality. The communication system and transportation mechanism connect people around the world so easily with utility of less time, cost and comfort. This kind of development also increases the standard of living of people. Rapid urbanization and intense commercial developments in the recent past have resulted in steep rise in travel demand, putting Kochi's transport infrastructure to stress. Experience has shown that, in cities like Kochi where roads do not have adequate width and which cater to mixed traffic conditions comprising slow- and fast-moving vehicles, road transport can optimally carry 8,000 persons per hour per direction (PHPDT). There is an urgent need to introduce a light Metro system in the city to provide fast, safe, economic, and environment-friendly mode for mass movement of passengers. With growing population and mega development plans coming up for this port city, the travel demand is expected to grow steeply. With inadequate public transport services, passengers will shift to private modes, which is already evident from the high ownership trends in the region. This will not only aggravate the congestion on the city roads but will also increase the pollution level. Here is the study focusing on the factors affecting the performance of the Kochi Metro Construction Project.

2.22 Yash Kumar mittal and Virendra kumar paul (2018) studied on Identification of critical factors for delay in metro rail projects in India. Infrastructure improvements for public transportation are made possible by metro rail projects. Time and expense overruns are a common feature of these undertakings. In this study, the topic of time overrun is being investigated. A metro rail project's progress is frequently hampered by a number of obstacles. These obstacles may include a result of elements relating to the owner, contractor, consultant, labour concerns, material issues, technological aspects, and outside agencies.

2.23 Sonia John Markose studied on the topic exploring and experiencing kochi metro: an analysis of the persuasive development strategies implemented by kmrl. The Kochi Metro, the new transit system of Cochin City made a tremendous impact on the life and rhythm of the entire Keralites. Since its inception it wooed not only Kochiites but the entire nation and they were curious to know the developmental status of this new mobility pattern. This paper discusses the different development strategies employed by KMRL to make Kochi Metro a prominent transit brand. This is basically an analysis of the Communication, revenue generation, aesthetic and branding strategies developed by the metro authorities to make Kochi metro a unique service. Through this paper you will explore and experience the developmental tactics of Kochi Metro.

2.24 Anu Tressa Jose and Sherin Cyriac has done a Study on the Customer Satisfaction on the Services of Kochi Metro. Transport sector of Kerala has undergone various changes during the previous years. One such advancement was the introduction of Metro trains, also called light rail in the Kerala's digital capital, Kochi. Services quality and customer satisfaction have been two important topics for the academic world as well as for the researches in the field of marketing. The attention directed to these two concepts services quality and customer satisfaction is mainly due to the competition in the market. The pressure of political factors and the population over organizations in the field of public administration is the reason for the competition. To what extend the plan of government to introduce metro trains is beneficial to people, particularly passengers? How far are the passengers of Kochi Metro satisfied on the services provided? How far has Kochi Metro improved the socio economic efficiency of people there? What are the problems faced by them? The study throws light on the above questions.

2.25 Dr. N. K. BABU has conducted a study of satisfaction level of passenger in Kochi Metro Train.

A considerable stakeholder for a company is Customer. All small-and large-scale company should satisfy the customer's satisfaction, which additionally defines the market share, customer loyalty, customer repurchase, income generation, productivity, and also perform a significant role in sustainable development. The company's attempts are now focused on their own as customer-oriented and are consequently, assessing the levels of client fulfilment and attempting to detect the fields for the improvement. Initially, the research is concentrated to recognize the level of satisfaction of passengers towards the Kochi Metro Railway System, Utilizing the questionnaire technique. Then, to recognize the several factors affecting Passenger fulfilment towards Kochi Metro Rail Limited. The specimen includes 50 respondents who have been utilizing the services of Kochi Metro Trains.

2.26 Elangovan, Senthil Kumar CB, and Nallusamy's (2017) research focused on the Chennai Metro Rail Limited's future development. This study also provided the region with the ground-breaking expansion of how closely nearby regions are feeling the effects of those designs by comprehending the full outcome of the design. The design's expansion is also given with the necessary growth ingredients that support the population's way of life.

2.27 Pilaka N., & Nallathiga (2020) described the most important technical characteristics of the HMRP to focus on the transportation and traffic of the Hyderabad city. Technical analysis covers details such as the layout of a metro railway line, vertical, horizontal, and cross-sectional details of a building or project, construction processes and techniques, operational procedures, etc. These qualities elevate the HMRL to maybe one of the best-designed projects ever produced, one that was executed to the highest standard.

2.28 Vipin Mathew Thomas, Sangeeth K conducted an analysis on the Impact of Kochi Metro Rail on Traffic Environment. Transportation infrastructure development plays an important role in city growth. Prime objective of introducing a mass rapid transport system (MRTS) such as metro rail is to reduce the number of motor vehicles on road, thereby reducing traffic congestion & air pollution. It also ensures that all people living or working within the transit influence area has equal access to the transit. Some of the major issues with Kochi city traffic are the ever increasing traffic congestion on

major roads within the city centre and the downward trend of average daily metro passengers. This research aims to evaluate the effect of Kochi metro rail on traffic environment. The study is motivated by the following hypotheses: The introduction of metro rail is likely to reduce city's traffic congestion.

2.29 Anshamol N. Rahim, Jomy Thomas & Vishnu Baburajan studied on the topic Investigating the Intention to Use Metro Services: A Behavioral Approach. Cities in developing countries are implementing metro rail as a solution to the steep increase in travel demand, leading to traffic congestion. Kochi metro rail was started in the city to attract commuters to public transport. We investigate the intention to use the proposed second phase of Kochi metro between Jawahar Lal Nehru (JLN) Stadium and Infopark for commute. We also analyze the role of attitudes of the individual, subjective norms and a conducive environment in the intention to use the proposed service. Data were collected using a questionnaire based on the theory of planned behavior (TPB). Considering the ordinal nature of the dependent variable, the ordered probit model is used. The three constructs of TPB were found to influence the intention to use metro. Estimation results highlight the need to include attitudes in predicting travel choice behavior. Educational qualification, travel cost and travel time were other influencing variables.

CHAPTER 3

DATA ANALYSIS AND INTERPRETATION

DATA ANALYSIS AND INTERPRETATION

Data analysis is a process of inspecting, cleansing, transforming, and modeling data with the goal of discovering useful information, informing conclusions, and supporting decision-making. Here it is divided as:

- Demographic analysis
- Descriptive analysis

A. DEMOGRAPHIC ANALYSIS

The study of a population based on characteristics like age, race, and sex is known as demographic analysis. Socioeconomic information expressed statistically, such as employment, education, income, marriage rates, birth and death rates, and more, is referred to as demographic data. The demographic factors used in this study are:

- Gender wise distribution
- Age wise distribution
- Occupational status of respondents
- Income wise distribution
- Frequency of using Kochi Metro
- Purpose of using Kochi Metro

3.1 GENDER WISE DISTRIBUTION

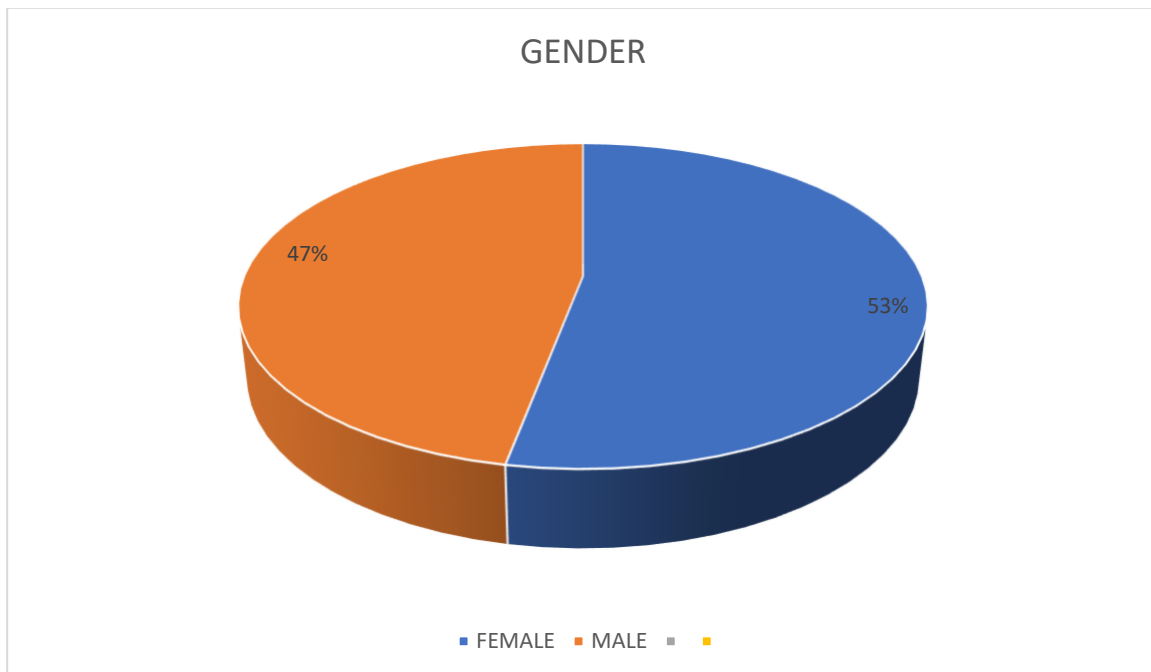
The respondents are classified on the basis of gender as male and female.

Table 3.1 Gender wise distribution

GENDER	NO. OF RESPONDENTS	PERCENTAGE
Male	47	47
Female	53	53
Total	100	100

Source: Primary data

Figure 3.1 Gender wise distribution



INFERENCE:

Out of 100 respondents, 53 are female and 47 are male users. That is 53% of users are female and 47% of the users are male. Majority of the respondents are female.

3.2 AGE WISE DISTRIBUTION

The respondents are categorised on the basis of age group. The different categories are less than 20, 20-30, 31-40, 41-60 and above 60.

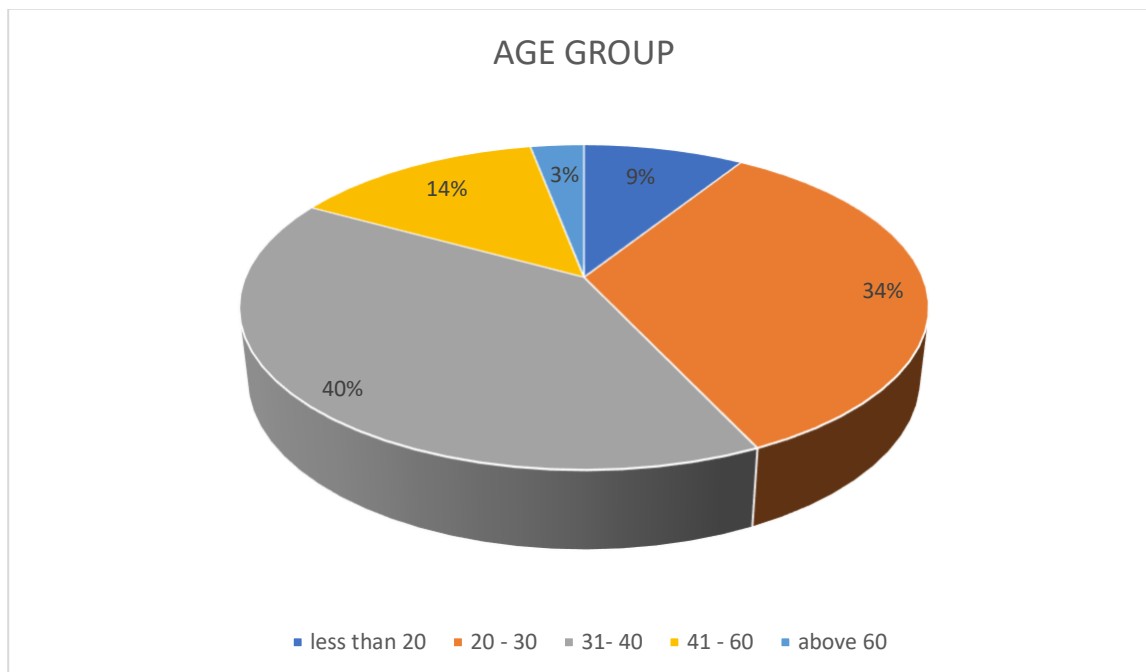
Table 3.2 Age wise distribution

AGE GROUP	NO. OF RESPONDENTS	PERCENTAGE
Less than 20	9	9
20-30	34	34
31-40	40	40

41-60	14	14
Above 60	3	3
Total	100	100

Source: Primary data

Figure 3.2 Age wise distribution



INFERENCE:

This table reveals that out of the different age groups, majority who use Kochi Metro are between the age group of 31 – 40 (40%) . 34% of the respondents under this study came in between the age group of 20 – 30 years, 14 % of the respondents came in between 41 – 60, 9% came in between the age group less than 20, while the remaining 3% of respondents are between the age group of above 60 years.

3.3 OCCUPATIONAL STATUS OF RESPONDENTS

On the basis of the occupational status, the respondents are categorised under the heads student, Government employee, private sector employee, self-employed, retired, homemaker and others.

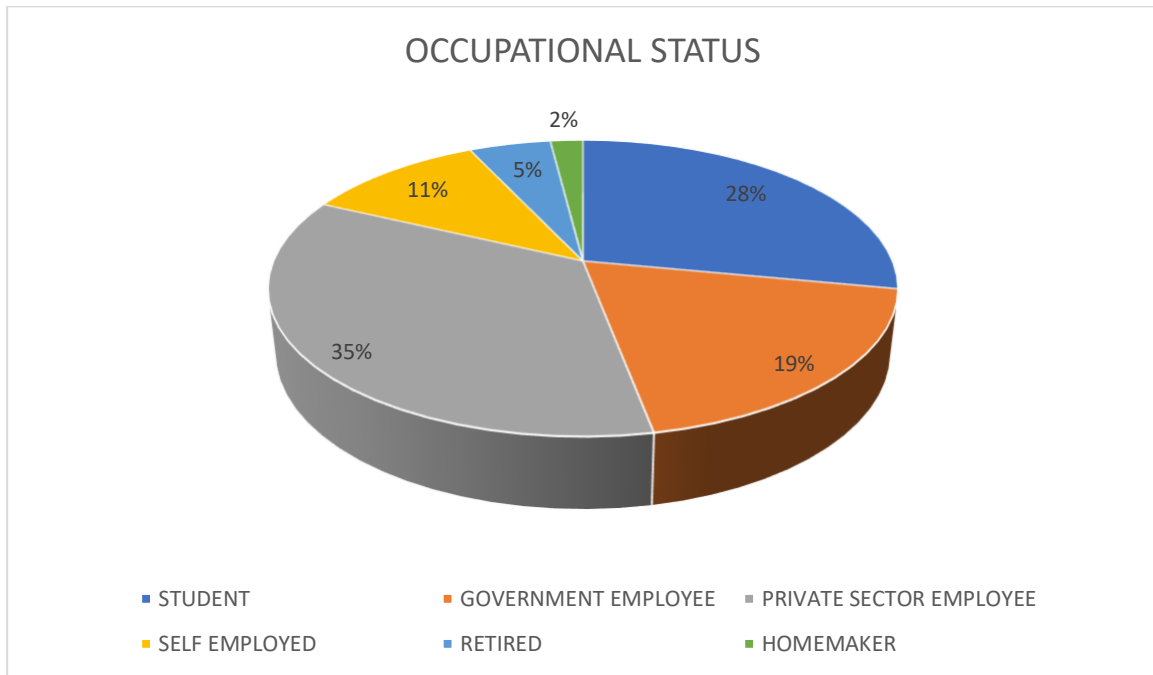
Table 3.3 Occupational status

OCCUPATIONAL STATUS	NO. OF RESPONDENTS	PERCENTAGE
Student	28	28
Government employee	19	19

Private sector employee	35	35
Self-employed	11	11
Retired	5	5
Homemaker	2	2
Others	-	-
Total	100	100

Source: Primary data

Figure 3.3 Occupational status



INFERENCE:

Among the 100 respondents, 35 are private sector employee, 28 are students, 19 are government employee, 11 are self-employed, 5 are retired and 2 are homemakers.

3.4 INCOME WISE DISTRIBUTION

The respondents are divided on the basis of their monthly income as less than 6000, 6000-20000, 20000-60000, 60000-100000 and above 100000.

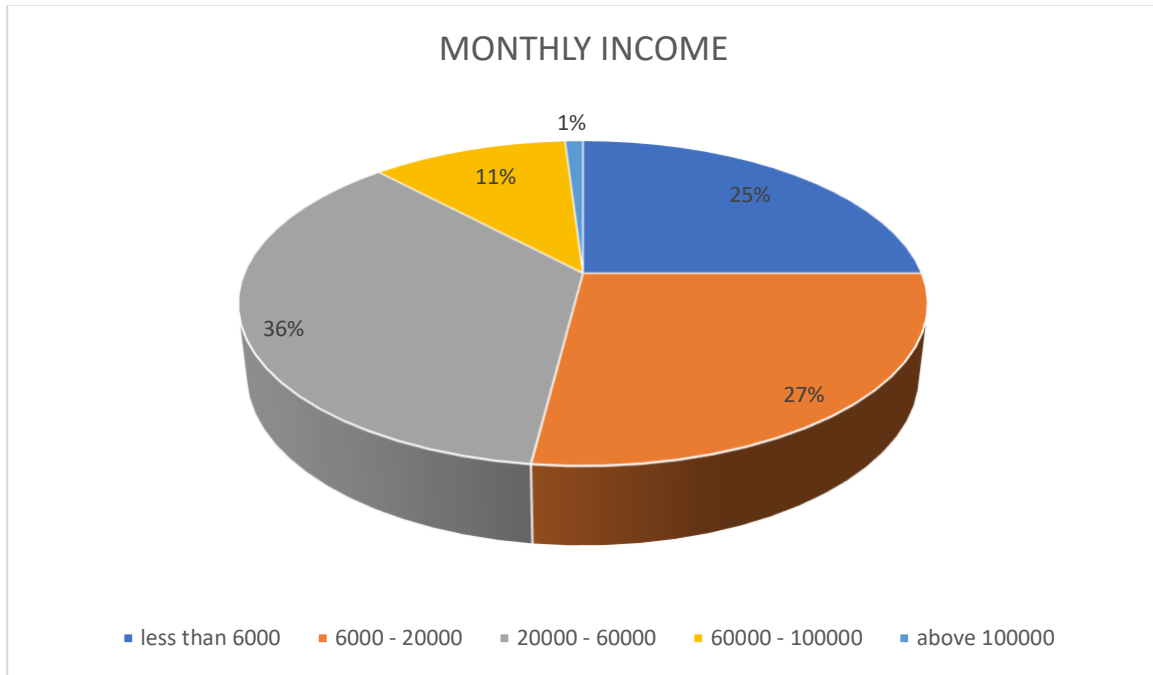
Table 3.4 Income wise distribution

MONTHLY INCOME	NO. OF RESPONDENTS	PERCENTAGE
Less than 6,000	25	25
6,000 – 20,000	27	27
20,000 – 60,000	36	36
60,000 – 1,00,000	11	11

Above 1,00,000	1	1
Total	100	100

Source: Primary data

Figure 3.4 Income wise distribution



INFERENCE:

The above statistics show that the people having a monthly income between 20,000 – 60,000 are using Kochi Metro more frequently. About 27% of the commuters under study have an income between 6,000 – 20,000. Around 25% of the commuters have an income less than 6,000. 11% of the commuters under study have an income between 60,000 – 1,00,000 and the remaining have an income above 1,00,000.

3.5 FREQUENCY OF USING KOCHI METRO

The respondents are divided as per their number of trips on Kochi Metro in a week. The different categories are less than 3 trips, 3 – 5 trips, 6-10 trips and more than 10 trips.

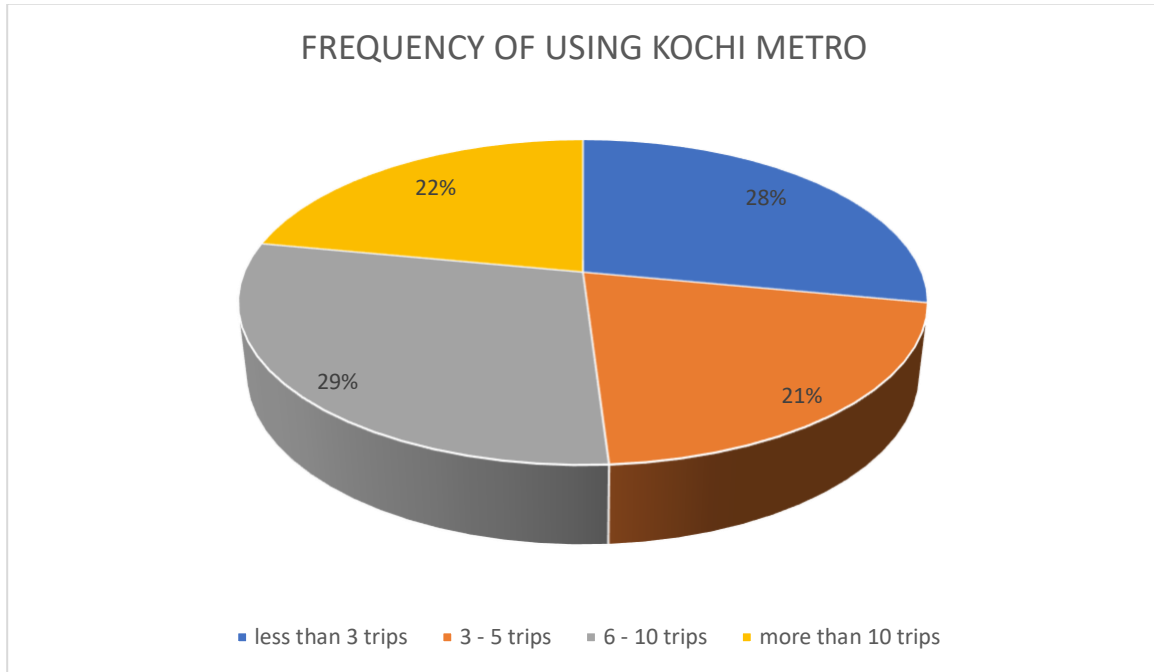
Table 3.5 Frequency of using Kochi Metro

NO. OF TRIPS (in a week)	NO. OF RESPONDENTS	PERCENTAGE
Less than 3 trips	28	28
3 – 5 trips	21	21

6 – 10 trips	29	29
More than 10 trips	22	22
Total	100	100

Source: Primary data

Figure 3.5 Frequency of using Kochi Metro



INFERENCE:

Majority of the sample use Kochi Metro as a mode of transport for 6 – 10 trips a week and around 28% of the respondents use Metro for less than 3 trips in a week. Around 22% use Metro for more than 10 trips a week and the remaining 21% use Metro for 3 – 5 trips a week.

3.6 PURPOSE OF USING KOCHI METRO

The respondents are classified based on the purpose for which they use Kochi Metro. The various categories are work, education, shopping, recreation and others.

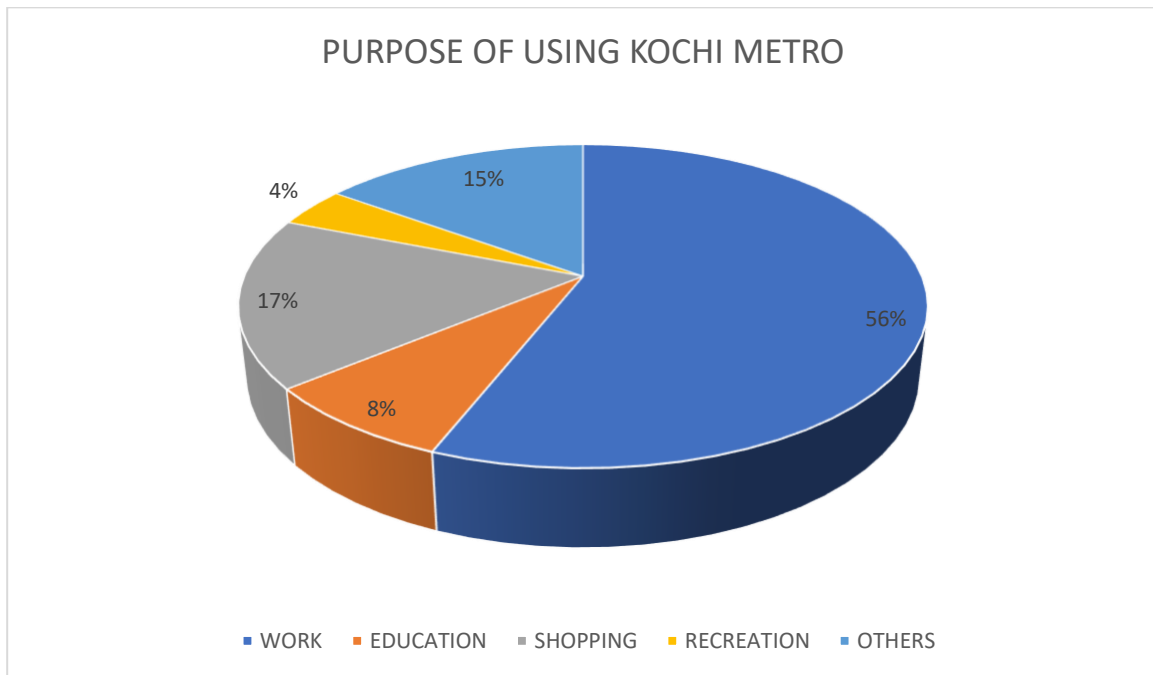
Table 3.6 Purpose of using Kochi Metro

PURPOSE	NO. OF RESPONDENTS	PERCENTAGE
Work	56	56

Education	8	8
Shopping	17	17
Recreation	4	4
Others	15	15
Total	100	100

Source: Primary data

Figure 3.6 Purpose of using Kochi Metro



INFERENCE: Among the 100 respondents, 56% use Metro for work, 17% use Metro for shopping, 8% for education, 4% for recreation and the remaining 15% for other purposes.

B. DESCRIPTIVE ANALYSIS

3.7 TIMING\SCHEDULE OF TRAINS

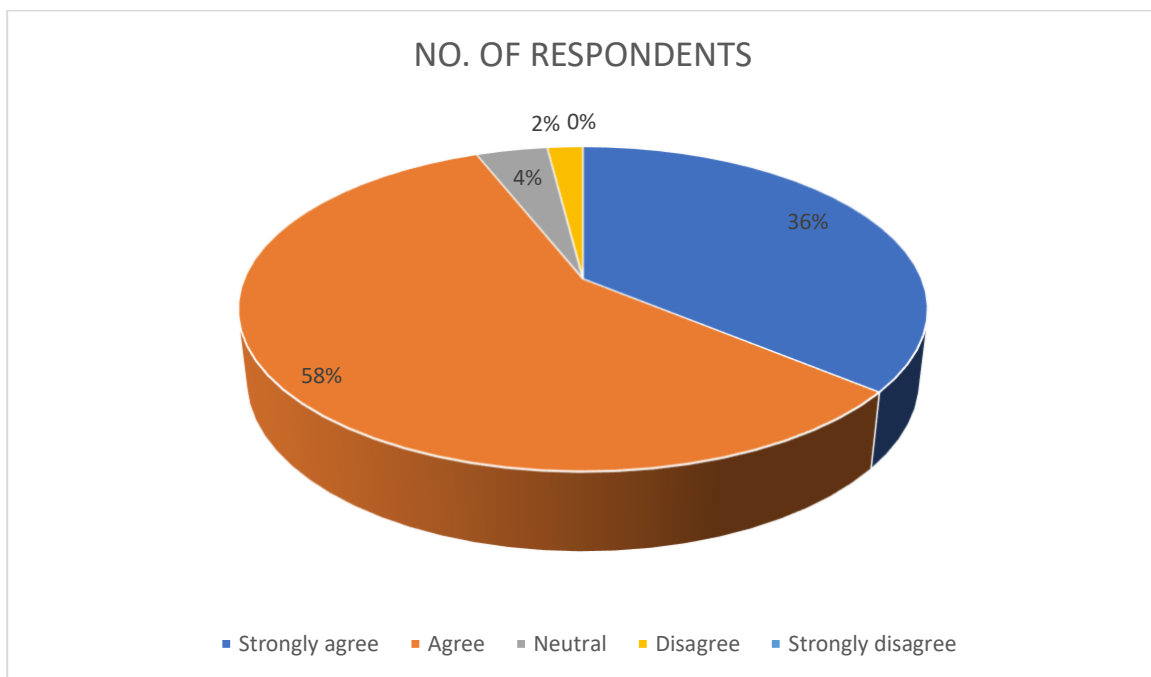
3.7.1 The trains arrive on time

Table 3.7.1 Time of arrival

SCALE	NO. OF RESPONDENTS	PERCENTAGE
Strongly agree	36	36
Agree	58	58
Neutral	4	4
Disagree	2	2
Strongly disagree	-	-
Total	100	100

Source: Primary data

Figure 3.7.1 Time of arrival



INFERENCE: The above table shows that 94% of the respondents agree that the Metro trains arrive on time and 4% shows neutral attitude. The remaining 2% disagree to this statement. Total response infers that the Metro trains usually arrive on time.

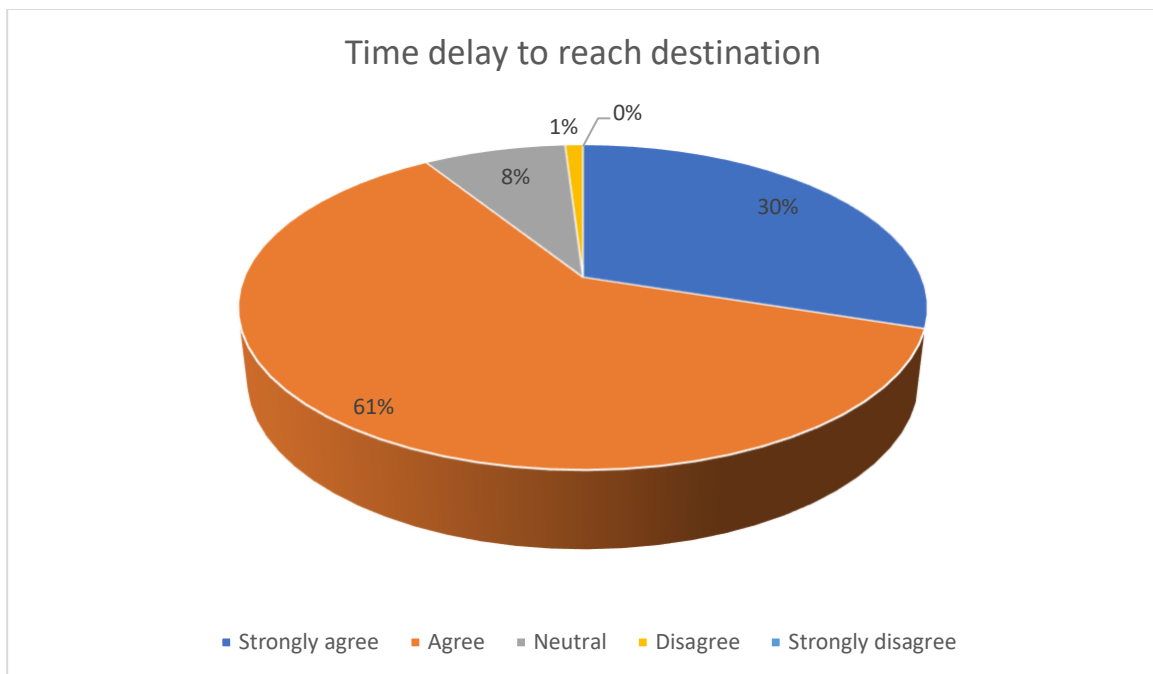
3.7.2 The frequency of metro trains is satisfactory

Table 3.7.2 Frequency of trains

SCALE	NO. OF RESPONDENTS	PERCENTAGE
Strongly agree	30	30
Agree	61	61
Neutral	8	8
Disagree	1	1
Strongly disagree	-	-
Total	100	100

Source: Primary data

Figure 3.7.2 Frequency of trains



INFERENCE: Among the 100 respondents, 91% of them agree that the frequency of Metro trains is satisfactory and 8% of the total respondents shows their neutral attitude. None of the respondents disagree with this statement. This shows that the frequency of metro trains is satisfactory for the commuters.

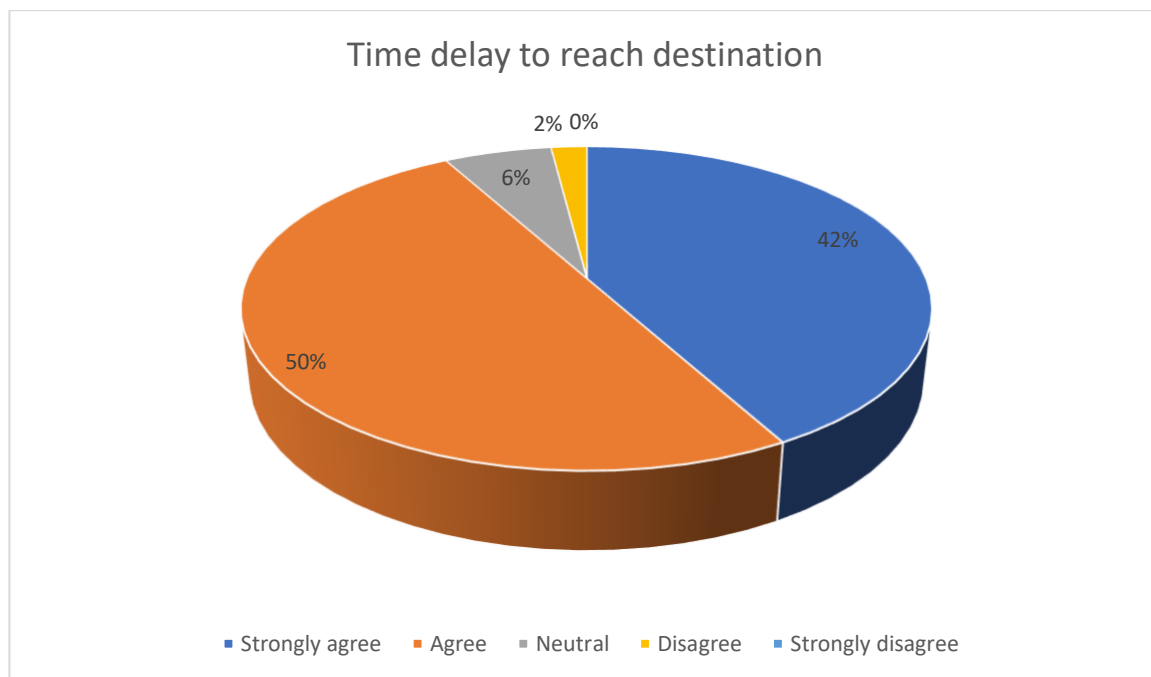
3.7.3 Metro helps to reach destination on time without any delays

Table 3.7.3 Time delay to reach destination

SCALE	NO. OF RESPONDENTS	PERCENTAGE
Strongly agree	42	42
Agree	50	50
Neutral	6	6
Disagree	2	2
Strongly disagree	-	-
Total	100	100

Source: Primary data

Figure 3.7.3 Time delay to reach destination



INFERENCE: 50% of the respondents strongly agree that Metro helps to reach destination on time without any delays, 42% agrees, 6% have a neutral opinion whereas 6% disagree on the factor. Hence it is inferred that majority of the sample agree to the statement.

3.8 TICKETING

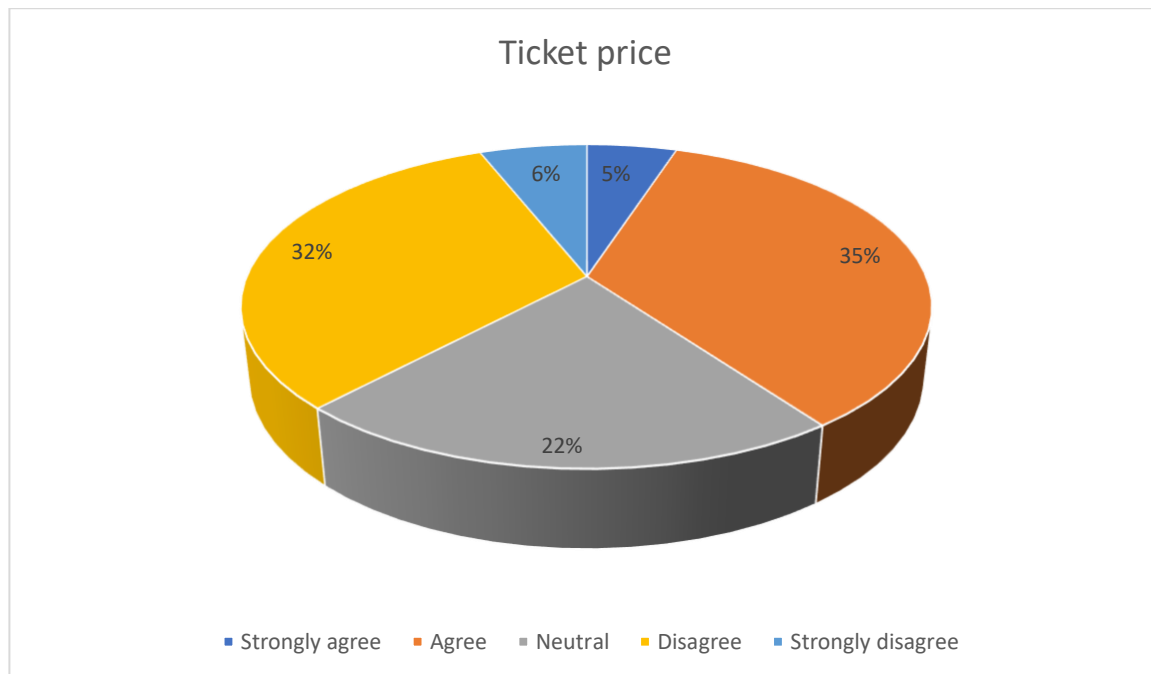
3.8.1 The ticket prices are reasonable

Table 3.8.1 Ticket price

SCALE	NO. OF RESPONDENTS	PERCENTAGE
Strongly agree	5	5
Agree	35	35
Neutral	22	22
Disagree	32	32
Strongly disagree	6	6
Total	100	100

Source: Primary data

Figure 3.8.1 Ticket price



INFERENCE:The above table shows that 40% of the respondents agree that the ticket prices of Kochi Metro are reasonable and 22% shows their neutral attitude towards the statement. 38% of the total sample disagrees with the statement and it shows that the prices are not reasonable for them.

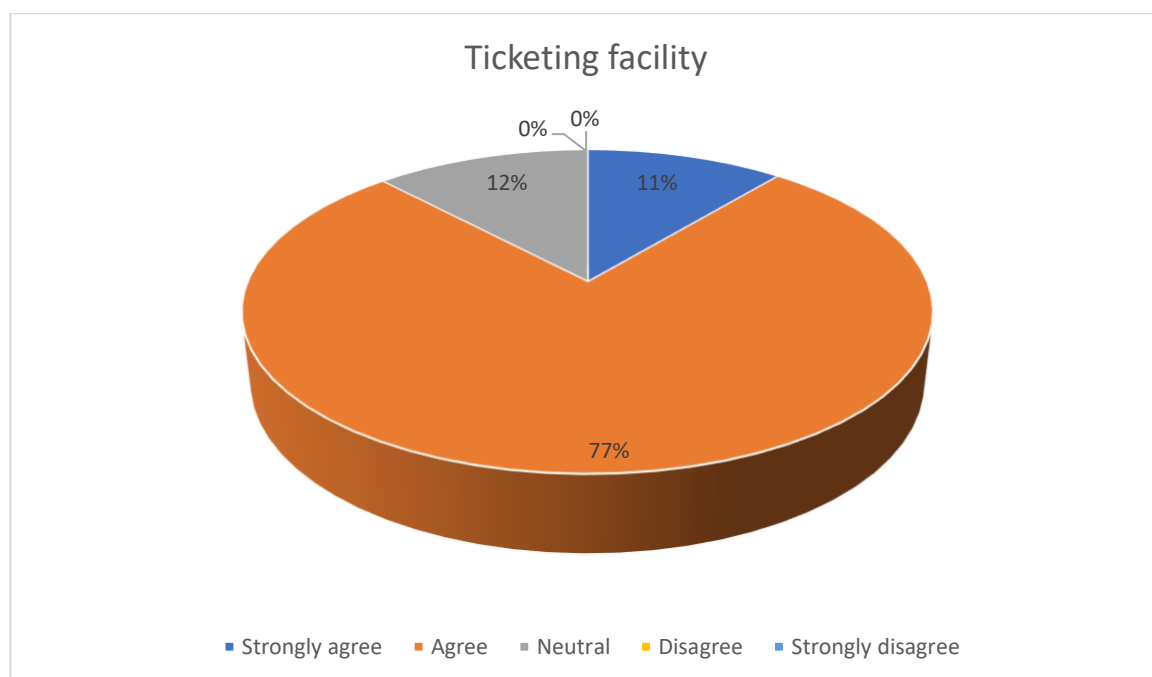
3.8.2 The ticketing facility is convenient

Table 3.8.2 Ticketing facility

SCALE	NO. OF RESPONDENTS	PERCENTAGE
Strongly agree	11	11
Agree	77	77
Neutral	12	12
Disagree	-	-
Strongly disagree	-	-
Total	100	100

Source: Primary data

Figure 3.8.2 Ticketing facility



INFERENCE: From the above table, it is inferred that 11% of the sample strongly agrees that the ticketing facility is convenient and 77% agrees to it and 12% neither agree nor disagree with the statement.

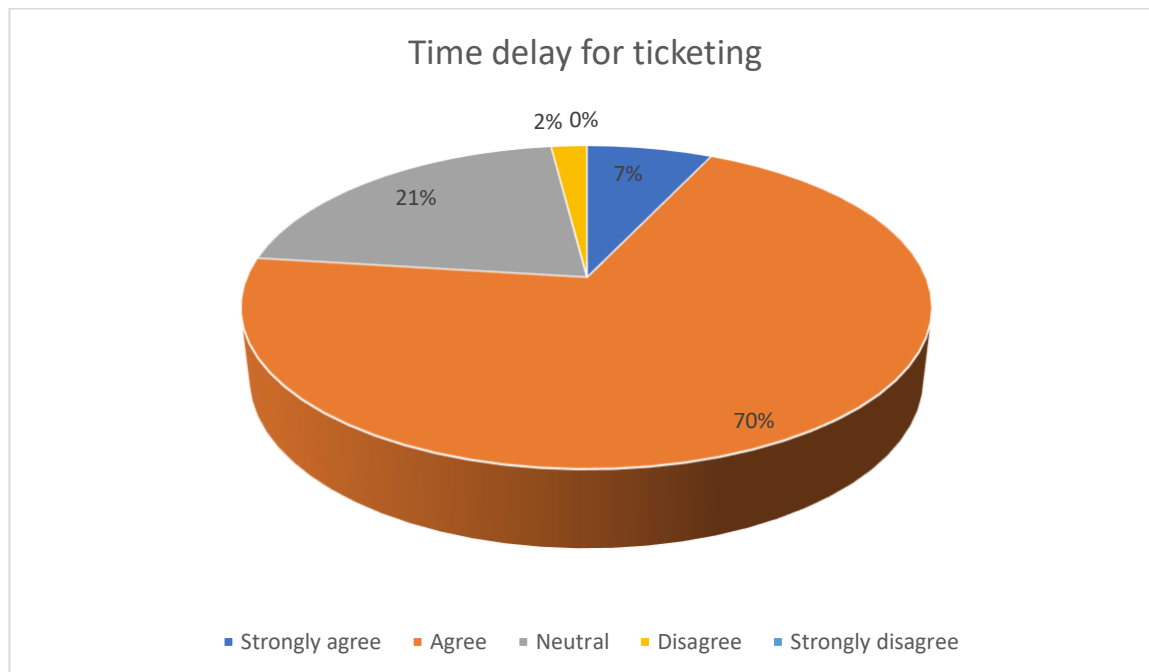
3.8.3 Time delay for ticketing is very less

Table 3.8.3 Time delay for ticketing

SCALE	NO. OF RESPONDENTS	PERCENTAGE
Strongly agree	7	7
Agree	70	70
Neutral	21	21
Disagree	2	2
Strongly disagree	-	-
Total	100	100

Source: Primary data

Figure 3.8.3 Time delay for ticketing



INFERENCE: Among the 100 respondents taken for the study, 70% agrees and 7% strongly agree that the time for ticketing is very less. 21% of the respondents neither agree nor disagree with the statement and the remaining 2% disagree. Hence, it can be inferred that the time delay for ticketing in Kochi Metro is very less.

3.9 COMFORT DURING COMMUTE

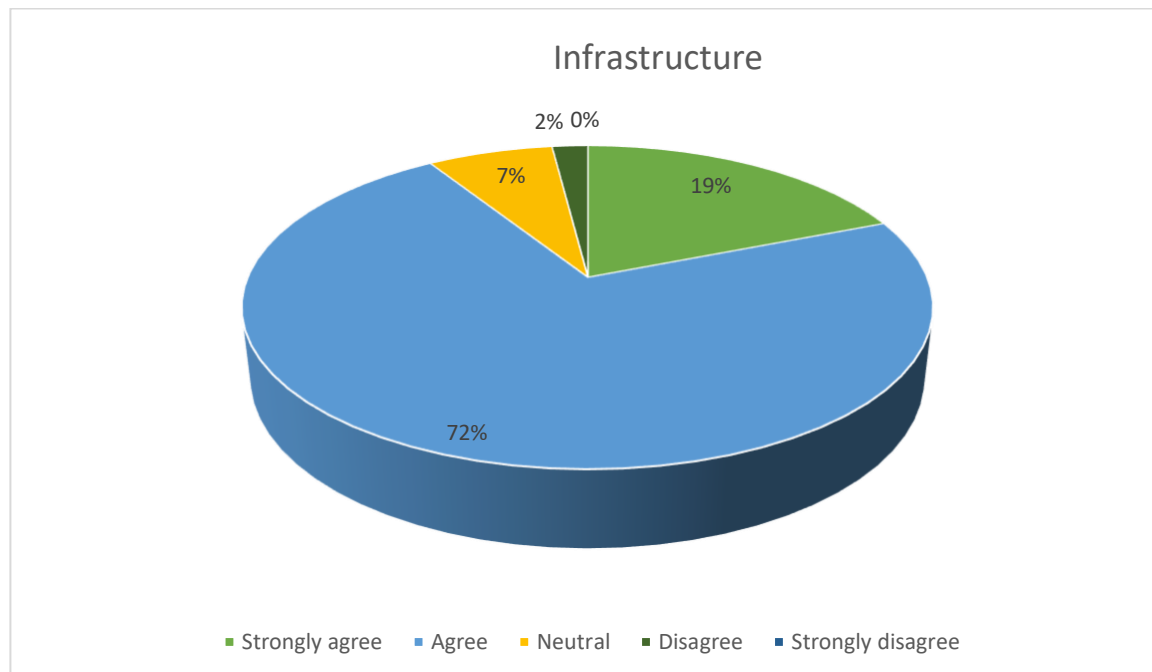
3.9.1 The infrastructure/seats in metro trains are comfortable

Table 3.9.1 Infrastructure

SCALE	NO. OF RESPONDENTS	PERCENTAGE
Strongly agree	19	19
Agree	72	72
Neutral	7	7
Disagree	2	2
Strongly disagree	-	-
Total	100	100

Source: Primary data

Figure 3.9.1 Infrastructure



INFERENCE: 91% of the respondents choose Kochi metro as their mode of transportation because the infrastructure / seats in metro trains are comfortable for them. 7% showed their neutral attitude and the remaining 2% showed disagreement.

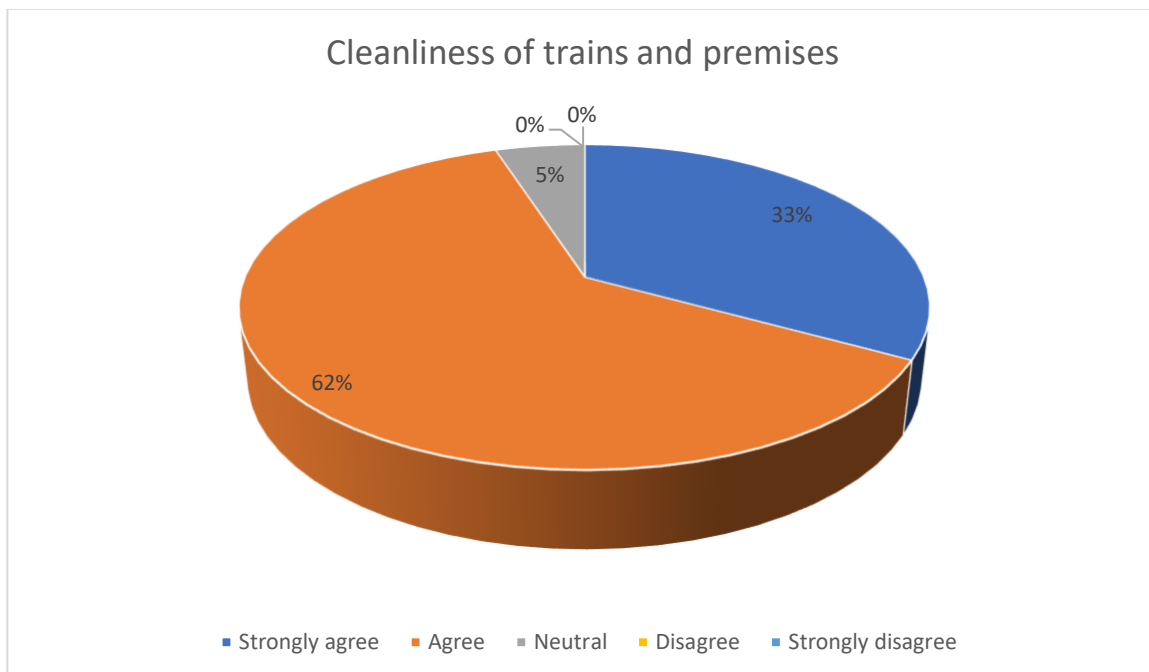
3.9.2 Metro trains and premises are kept clean

Table 3.9.2 Cleanliness of trains and premises

SCALE	NO. OF RESPONDENTS	PERCENTAGE
Strongly agree	33	33
Agree	62	62
Neutral	5	5
Disagree	-	-
Strongly disagree	-	-
Total	100	100

Source: Primary data

Figure 3.9.2 Cleanliness of trains and premises



INFERENCE: 95% of the respondents choose Kochi metro as their mode of transportation because Metro trains and premises are kept clean. 5% showed their neutral attitude and none of them showed disagreement. This shows that the Metro trains and premises are kept clean.

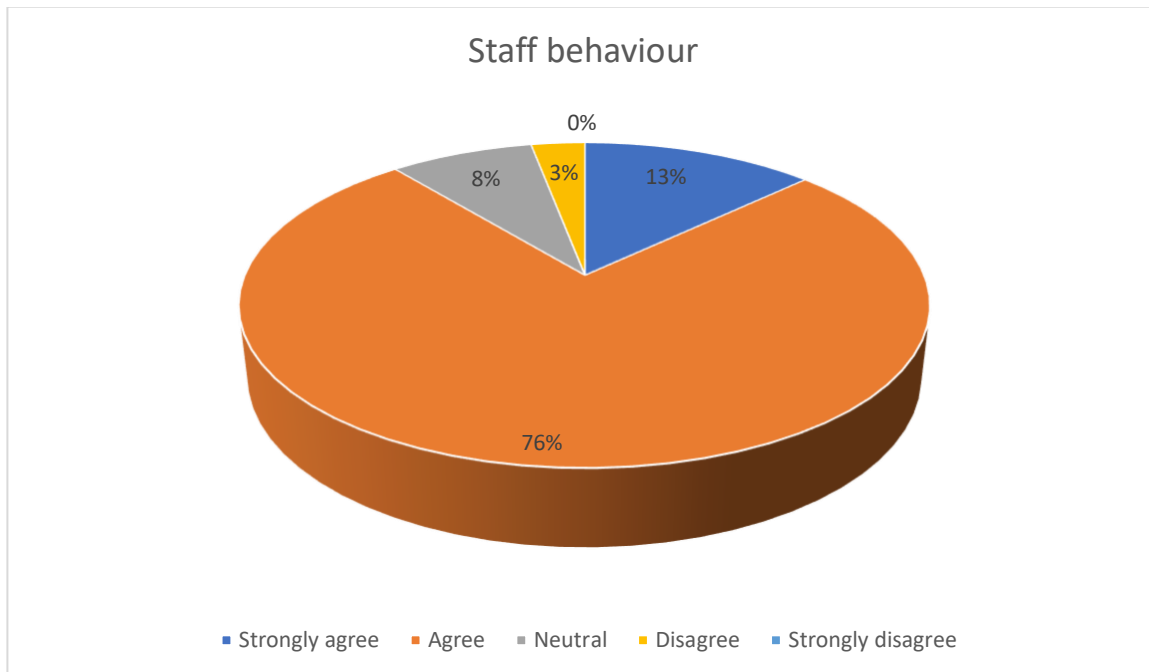
3.9.3 Behaviour of staff is pleasant

Table 3.9.3 Staff behaviour

SCALE	NO. OF RESPONDENTS	PERCENTAGE
Strongly agree	13	13
Agree	76	76
Neutral	8	8
Disagree	3	3
Strongly disagree	-	-
Total	100	100

Source: Primary data

Figure 3.9.3 Staff behaviour



INFERENCE: 89% of the respondents choose Kochi metro as their mode of transportation because the behaviour of staff is pleasant. 8% showed their neutral attitude and the remaining 3% showed disagreement.

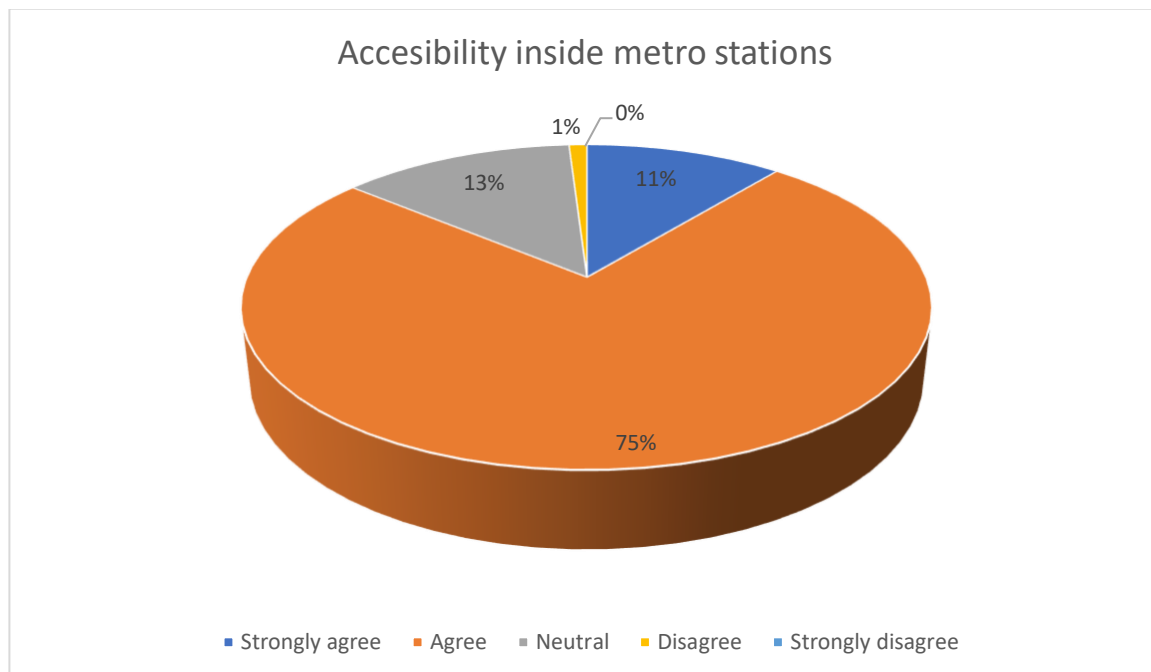
3.9.4 Have easy accessibility inside metro stations

Table 3.9.4 Accessibility inside metro stations

SCALE	NO. OF RESPONDENTS	PERCENTAGE
Strongly agree	11	11
Agree	75	75
Neutral	13	13
Disagree	1	1
Strongly disagree	-	-
Total	100	100

Source: Primary data

Figure 3.9.4 Accessibility inside metro stations



INFERENCE:

86% of the respondents choose Kochi metro as their mode of transportation because of having easy accessibility inside metro stations. 13% showed their neutral attitude and the remaining 1% showed disagreement.

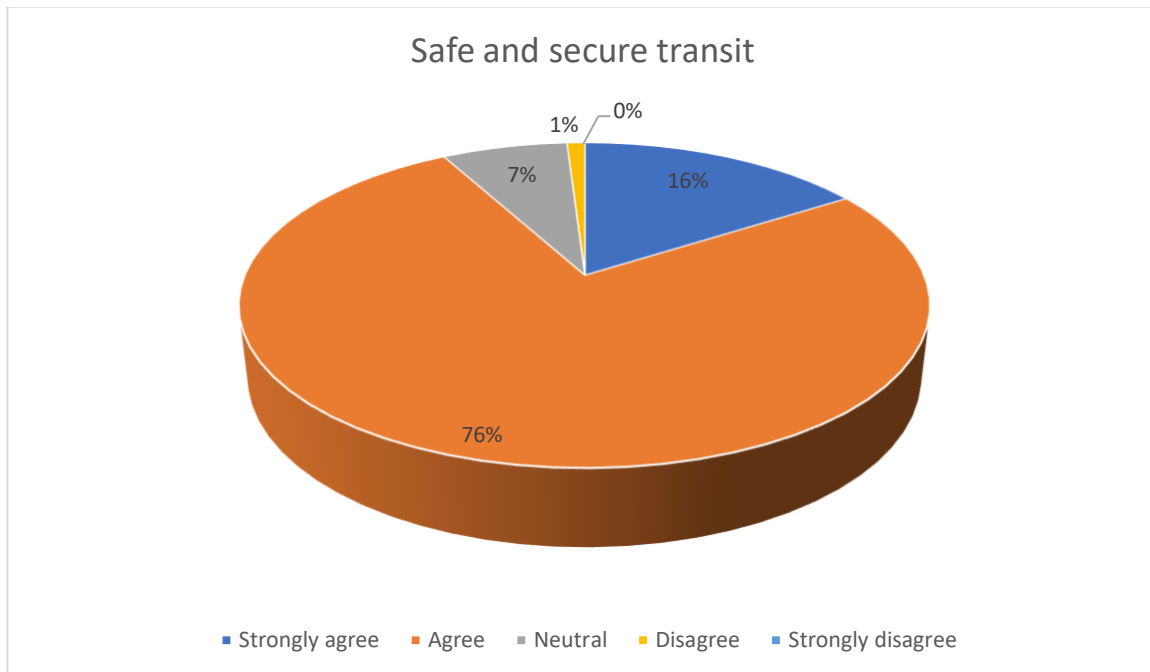
3.9.5 Kochi Metro ensures a safe and secure transit

Table 3.9.5 Safe and secure transit

SCALE	NO. OF RESPONDENTS	PERCENTAGE
Strongly agree	16	16
Agree	76	76
Neutral	7	7
Disagree	1	1
Strongly disagree	-	-
Total	100	100

Source: Primary data

Figure 3.9.5 Safe and secure transit



INFERENCE: 82% of the respondents choose Kochi metro as their mode of transportation because it ensures a safe and secure transit. 7% showed their neutral attitude and the remaining 1% showed disagreement.

3.10 CONNECTIVITY

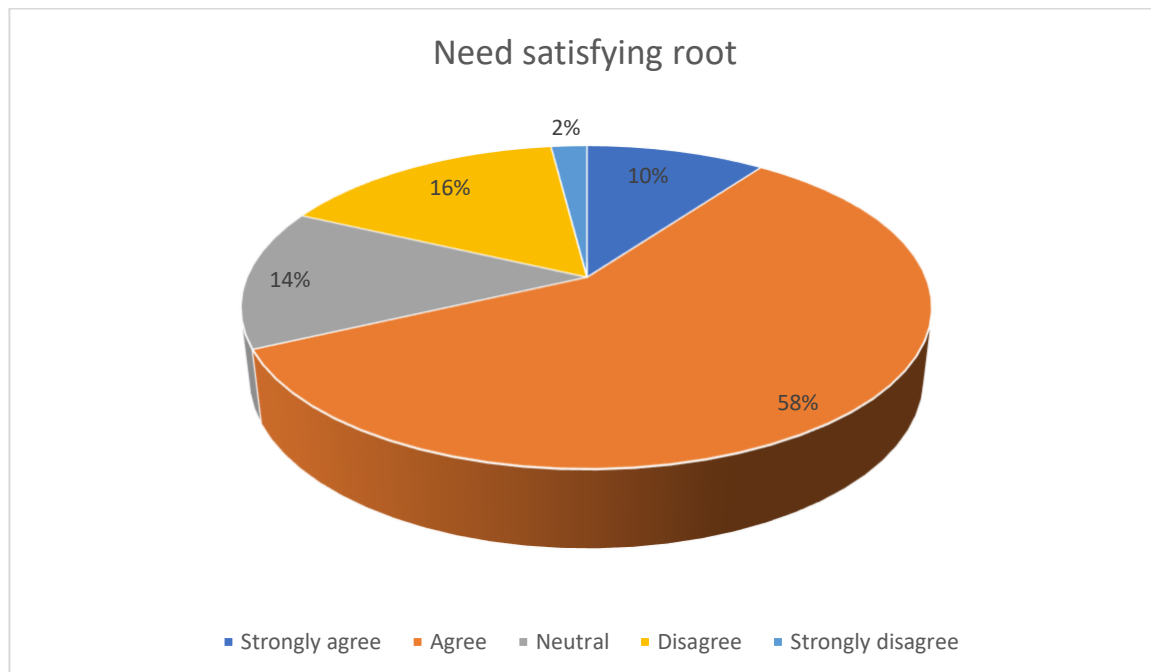
3.10.1 The route of Kochi Metro is comfortable for my needs

Table 3.10.1 Need satisfying route

SCALE	NO. OF RESPONDENTS	PERCENTAGE
Strongly agree	10	10
Agree	58	58
Neutral	14	14
Disagree	16	16
Strongly disagree	2	2
Total	100	100

Source: Primary data

Figure 3.10.1 Need satisfying route



INFERENCE: 68% of the respondents choose Kochi metro as their mode of transportation because the route of Kochi Metro is comfortable for their needs. 14% showed their neutral attitude and the remaining 18% showed disagreement.

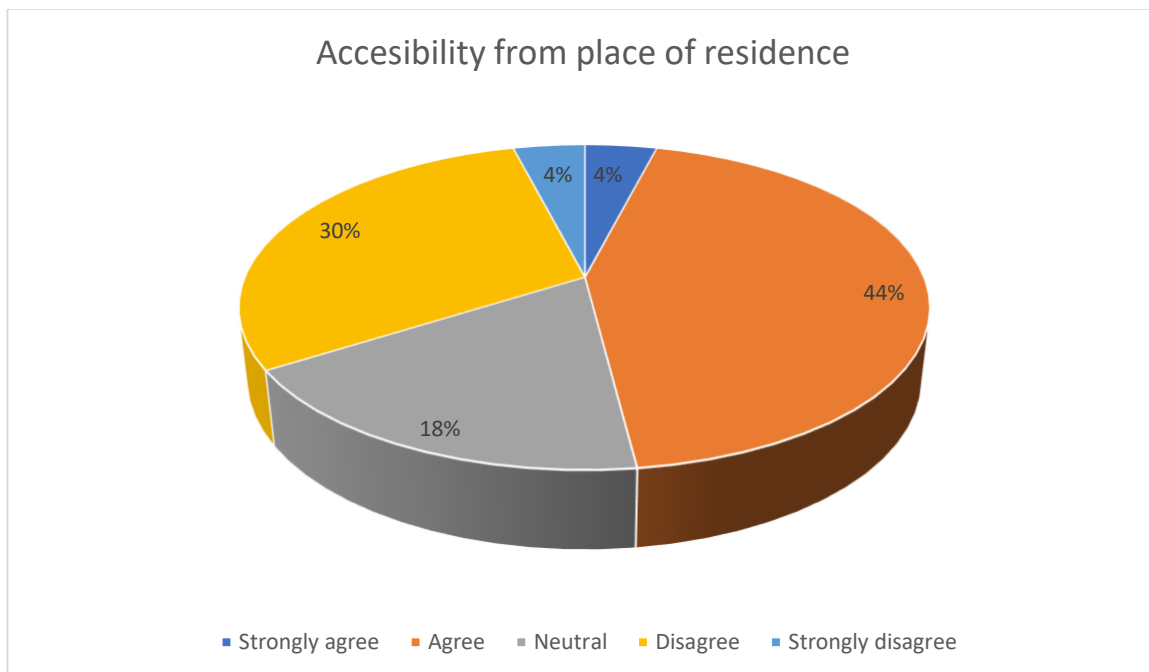
3.10.2 Metro station is easily accessible from my place of residence

Table 3.10.2 Accessibility from place of residence

SCALE	NO. OF RESPONDENTS	PERCENTAGE
Strongly agree	4	4
Agree	44	44
Neutral	18	18
Disagree	30	30
Strongly disagree	4	4
Total	100	100

Source: Primary data

Figure 3.10.2 Accessibility from place of residence



INFERENCE: 48% of the respondents choose Kochi metro as their mode of transportation because Metro station is easily accessible from their place of residence. 18% showed their neutral attitude and the remaining 34% showed disagreement.

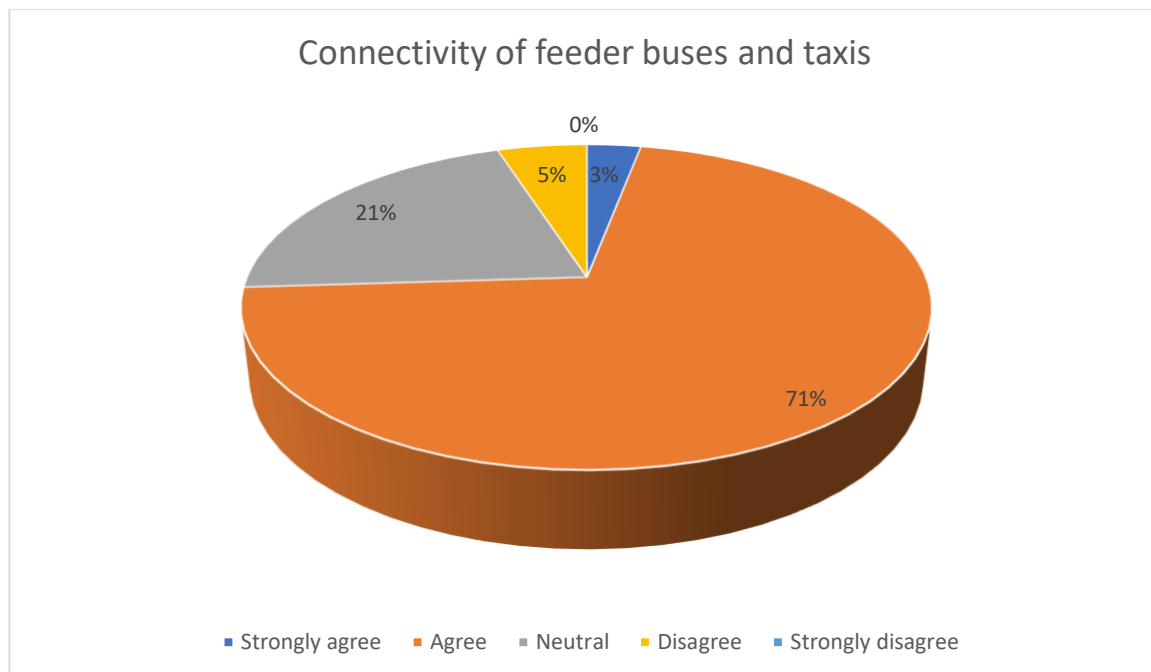
3.10.3 Kochi Metro Feeder buses and taxis provide better connectivity

Table 3.10.3 Connectivity of feeder buses and taxis

SCALE	NO. OF RESPONDENTS	PERCENTAGE
Strongly agree	3	3
Agree	71	71
Neutral	21	21
Disagree	5	5
Strongly disagree	-	-
Total	100	100

Source: Primary data

Figure 3.10.3 Connectivity of feeder buses and taxis



INFERENCE:

74% of the respondents choose Kochi metro as their mode of transportation because Kochi Metro Feeder buses and taxis provide better connectivity. 21% showed their neutral attitude and the remaining 5% showed disagreement.

3.11 OTHER FACILITIES

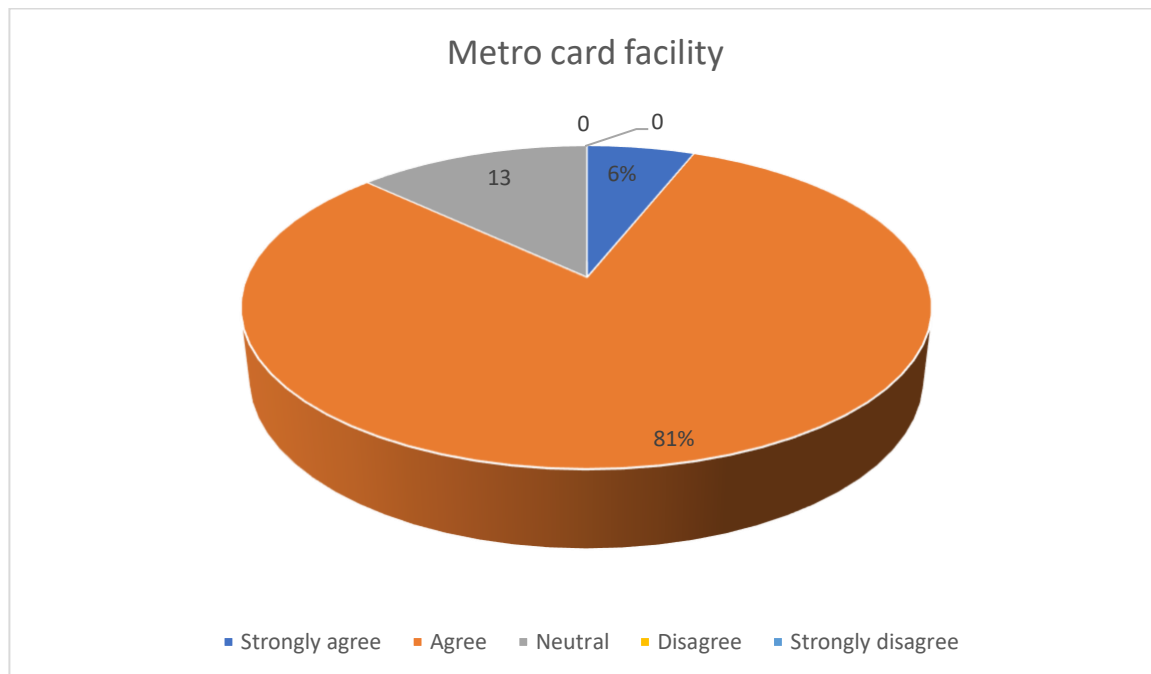
3.11.1 Metro card (Kochi card) facility is easy to use

Table 3.11.1 Metro card facility

SCALE	NO. OF RESPONDENTS	PERCENTAGE
Strongly agree	6	6
Agree	81	81
Neutral	13	13
Disagree	-	-
Strongly disagree	-	-
Total	100	100

Source: Primary data

Figure 3.11.1 Metro card facility



INFERENCE: Majority of the people (87%) have agreed that Kochi Metro Feeder buses and taxis provide better connectivity while 13% of them neither agreed nor disagreed.

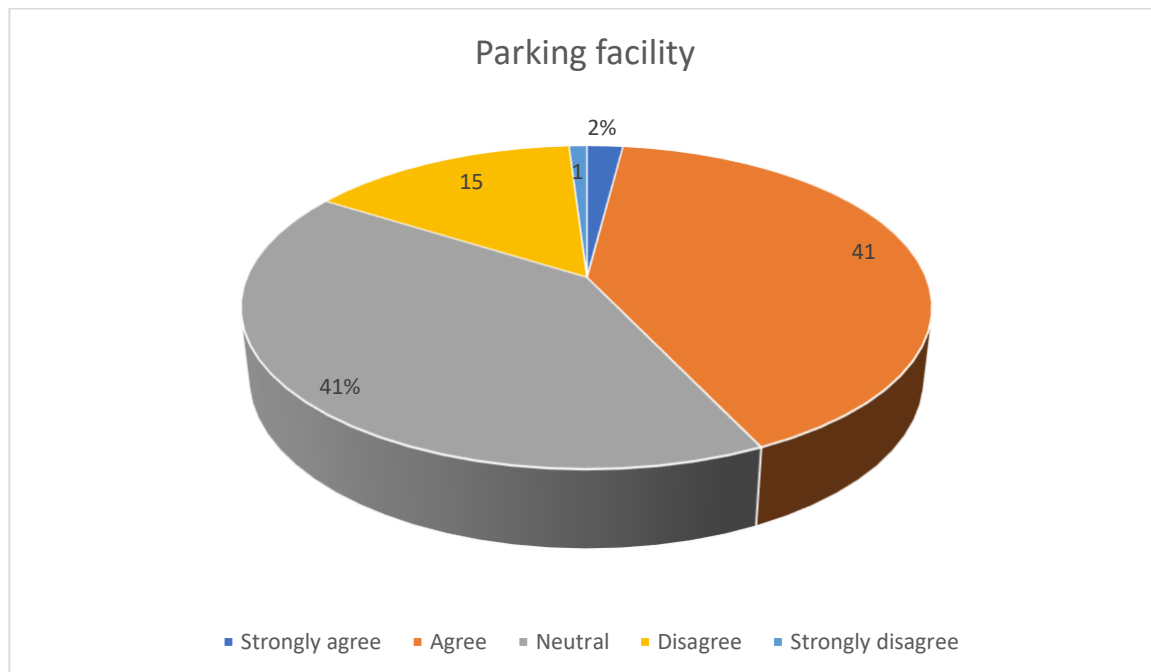
3.11.2 Metro parking facilities is cost effective

Table 3.11.2 Parking facility

SCALE	NO. OF RESPONDENTS	PERCENTAGE
Strongly agree	2	2
Agree	41	41
Neutral	41	41
Disagree	15	15
Strongly disagree	1	1
Total	100	100

Source: Primary data

Figure 3.11.2 Parking facility



INFERENCE:

41% showed their neutral attitude on the statement metro parking facilities is cost effective, 43% strongly agree and the remaining 16% showed disagreement.

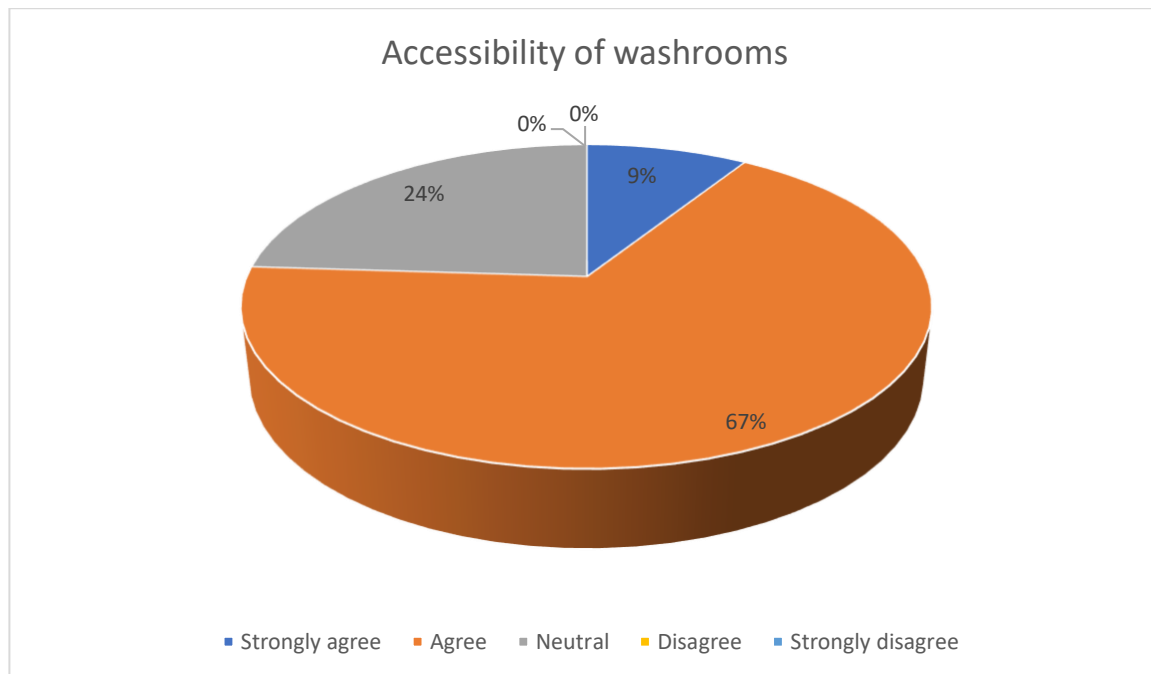
3.11.3 Washrooms are available and have easy accessibility

Table 3.11.3 Accessibility of washrooms

SCALE	NO. OF RESPONDENTS	PERCENTAGE
Strongly agree	9	9
Agree	67	67
Neutral	24	24
Disagree	-	-
Strongly disagree	-	-
Total	100	100

Source: Primary data

Figure 3.11.3 Accessibility of washrooms



INFERENCE:

76% of the respondents choose Kochi metro as their mode of transportation because washrooms are available and have easy accessibility. 24% showed their neutral attitude and none of them showed disagreement.

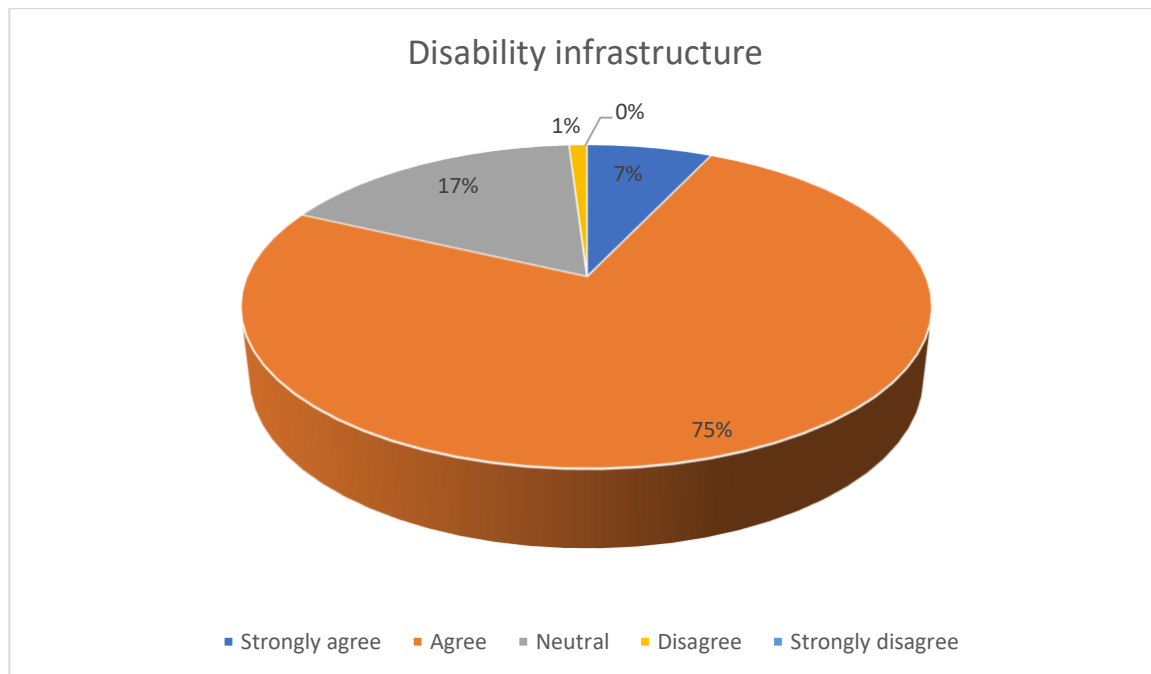
3.11.4 Disability infrastructure is really helpful

Table 3.11.4 Disability infrastructure

SCALE	NO. OF RESPONDENTS	PERCENTAGE
Strongly agree	7	7
Agree	75	75
Neutral	17	17
Disagree	1	1
Strongly disagree	-	-
Total	100	100

Source: Primary data

Figure 3.11.4 Disability infrastructure



INFERENCE:

82% of the respondents prefer Kochi metro as their mode of transportation because the disability infrastructure is helpful. 17% showed their neutral attitude and the remaining 1% showed disagreement.

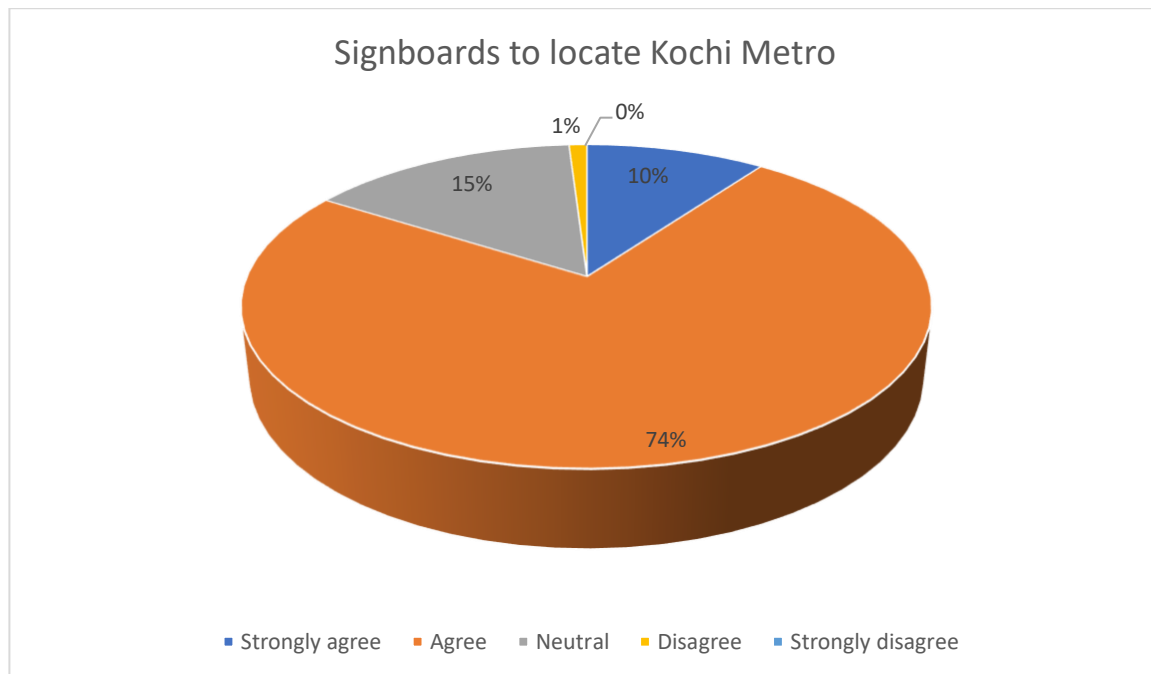
3.11.5 There are enough signboards to locate metro stations

Table 3.11.5 Signboards to locate Kochi Metro

SCALE	NO. OF RESPONDENTS	PERCENTAGE
Strongly agree	10	10
Agree	74	74
Neutral	15	15
Disagree	1	1
Strongly disagree	-	-
Total	100	100

Source: Primary data

Figure 3.11.5 Signboards to locate Kochi Metro



INFERENCE:

84% of the respondents prefer Kochi metro as their mode of transportation because there are enough signboards to locate metro stations. 15% showed their neutral attitude and the remaining 1% showed disagreement.

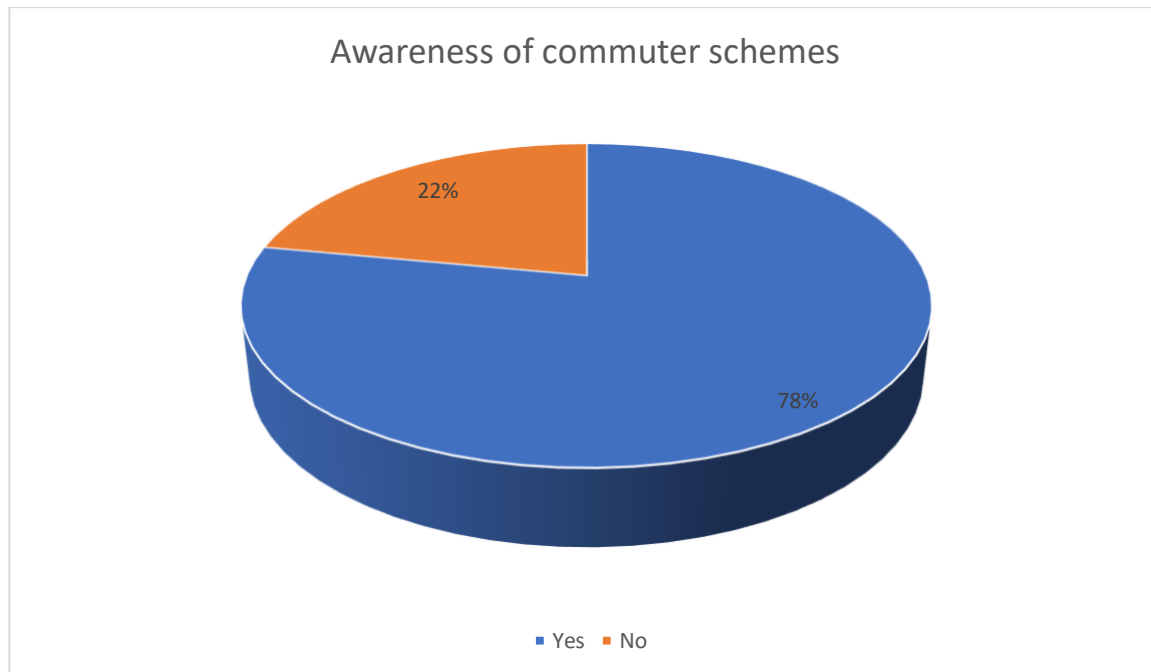
3.11.6 Awareness of commuter schemes

Table 3.11.6 Awareness of commuter schemes

YES/NO	NO. OF RESPONDENTS	PERCENTAGE
Yes	78	78
No	22	22
Total	100	100

Source: Primary data

Figure 3.11.6 Awareness of commuter schemes



INFERENCE:

From the above pie chart we can see that about 78% of the total respondents were aware of the various commuter schemes of Kochi Metro. While the remaining 22% were not aware of the schemes. It may be due to lack of advertisements and public awareness programs.

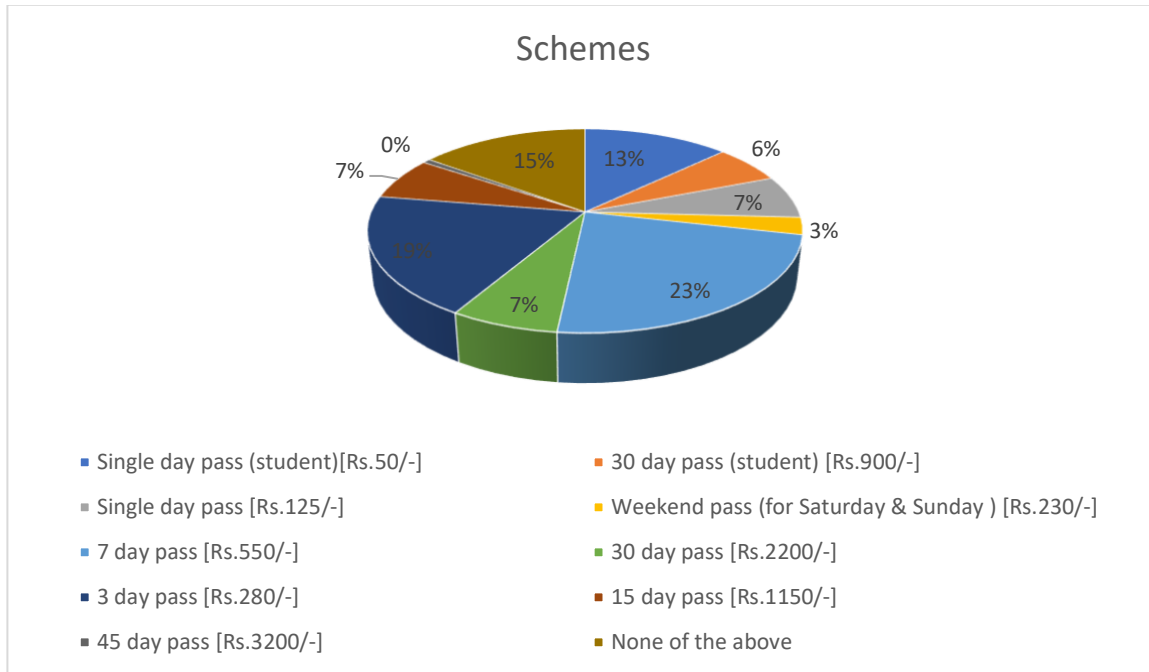
3.11.7 Preference of commuter schemes

Table 3.11.7 Preference of commuter schemes

SCHEMES	NO. OF RESPONDENTS	PERCENTAGES
Single day pass (student)[Rs.50/-]	19	19
30-day pass (student) [Rs.900/-]	9	9
Single day pass [Rs.125/-]	10	10
Weekend pass (for Saturday & Sunday) [Rs.230/-]	4	4
7 day pass [Rs.550/-]	34	34
30 day pass [Rs.2200/-]	10	10
3 day pass [Rs.280/-]	28	28
15 day pass [Rs.1150/-]	10	10
45 day pass [Rs.3200/-]	1	1
None of the above	22	22
Total	147	147

Source: Primary data

Figure 3.11.7 Preference of commuter schemes



INFERENCE:

Single day pass (student) [Rs. 50/-] is most preferred among students (19%) than Single day pass [Rs.125/-] (9%). Among the other schemes, the preference towards 7 day pass [Rs.550/-] is more (34%), 3 day pass [Rs.280/-] is 28%, preference towards 30 day pass [Rs.2200/-] and 15 day pass [Rs.1150/-] are equal (10%). 45 day pass [Rs.3200/-] is the least preferred scheme among the various schemes offered by Kochi Metro. 22% are not aware of the schemes and so they don't prefer any of the schemes of Kochi Metro.

CHAPTER 4

FINDINGS, SUGGESTIONS AND CONCLUSIONS

This chapter presents the major findings of the study and makes some recommendations based on the findings. The chapter also presents the conclusion and scope for future research.

4.1 FINDINGS

- Majority of the respondents are of the age group 31 – 40.
- A higher percentage of respondents who use Kochi Metro are private sector employees and students.
- Majority of the respondents are females.
- Higher percentage of respondents who use Kochi Metro belongs to the
- income group 20,000 – 60,000.
- The study reveals that majority of the respondents take 6 – 10 trips a week.
- Majority of the respondents use Kochi Metro for job/work.
- Most of the respondents show a positive attitude towards the arrival time of
- metro trains.
- The study reveals that 91% of the commuters are satisfied with the frequency of metro trains.
- The ticketing facility of Kochi Metro is fast and convenient for the commuters.
- The Kochi Metro infrastructure/seating is comfortable for commuters and offer adequate washroom facilities and an efficient disability infrastructure.
- Metro trains and premises are always kept clean.
- Kochi Metro staff has pleasant behaviour.
- Majority of the respondents agree that there is easy accessibility inside metro stations.
- Safety and security during transit is a major factor attracting commuters towards Kochi Metro.
- A higher percentage of the respondents agree that the route of Kochi metro is comfortable for their needs.
- Respondents have a mixed opinion as to the accessibility of metro stations from their place of residence.
- Feeder buses and taxis provide better connectivity.

- A lion share of the respondents are of the opinion that Metro card facility is easy to use.
- Respondents have conflicting views as to the cost effectiveness of metro parking facility.
- Adequate signboard helps commuters to locate Kochi Metro stations easily.
- Most of the respondents are aware of the various commuter schemes offered by Kochi Metro.
- The most preferred commuter schemes are 7 day pass [Rs. 550/-], 3 day pass [Rs. 280/-] and students mostly prefer single day pass (student) [Rs. 50/-].

4.2 SUGGESTIONS

- Reduction in the ticket price will help to increase the number of commuters
- Since connectivity to various locations is a prominent factor which attracts the commuters towards the use of Kochi Metro, major focus should be given to expansion to more areas.
- Reduction in the parking fee will be more convenient to the users.
- Due to the slow progression of Kochi Metro project, there is lack of connectivity to major areas. Hence increasing the speed of the project will increase the number of passengers and thereby leading more revenue.
- Increase in advertisement will be helpful to create more awareness among the general public regarding the various facilities provided by Kochi metro.
- Inclusion of entertainment activities in the Metro stations will be a good way to catch attention of public.
- Provide additional facilities like ATMs, restrooms, medical emergency staff and amenities.

4.3 CONCLUSION

The basis of the research was the variables influencing people's preference for the Kochi Metro as a form of public transportation. The study concentrated on the public's preferences and attitudes towards Kochi Metro's numerous programmes and services. The study's goal was to comprehend the reasons Kochi Metro is preferred as a form of public transit as well as the issues its users encounter. A sample of 100 respondents from various age groups in and around Ernakulam was chosen for the study. Responses were gathered between November 2023 and March 2023.

The researchers examined a number of variables, including train schedules and timing, ease of purchasing tickets, comfort during commutes, connectedness of Metro lines, and other amenities. High admission prices, poor connectivity to more regions, and parking costs were some of the issues users reported.

In two distinct phases, the demographic analysis and the descriptive analysis, the information gathered from the respondents was thoroughly examined. The demographic research gave a clear picture of Kochi Metro users' gender, age group, occupation, monthly income, and frequency and purpose. The researchers were also able to determine the effects of each element on people's choice for the Kochi Metro as a means of public transportation thanks to the descriptive analysis.

According to the study's conclusions, Kochi Metro is preferred mostly because of its convenience and superior infrastructure, while its users most frequently complain about the high cost of tickets and poor connectivity. The study's conclusions have led to recommendations that have allowed Kochi Metro officials to better understand the elements that its users value and to enhance various features in order to increase the number of commuters and ultimately its revenue.

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APPENDIX

QUESTIONNAIRE

1. Name:

2. Gender:

- Male
- Female
- Others
- Prefer not to say

3. Age group:

- Less than 20
- 20 – 30
- 31 – 40

- 41 – 60
- Above 60

4. Occupational status:

- Student
- Government employee
- Private sector employee
- Self-employed
- Retired
- Homemaker
- Others

5. Monthly income:

- Less than 6000
- 6000 – 20000
- 20000 – 60000
- 60000 – 100000
- Above 100000

6. How many times a week do you use Kochi Metro?

- Less than 3 trips
- 3 – 5 trips
- 6 – 10 trips
- More than 10 trips

7. For what purpose do you use kochi metro?

- Work
- Education
- Shopping
- Recreation
- Others

Timing / Schedule of trains

8. The trains arrive on time

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

9. The frequency of metro trains is satisfactory

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

10. Metro trains helps to reach destination on time without any delays

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Ticketing

11. The ticket prices are reasonable

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

12. The ticketing facility is convinient

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

13. Time delay for ticketing is very less

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Comfort during commute

14. The infrastructure / seats in metro trains are comfortable

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

15. Metro trains and premises are kept clean

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

16. Behaviour of staff is pleasant

- Strongly agree

- Agree
- Neutral
- Disagree
- Strongly disagree

17. Have easy accessibility inside metro stations

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

18. Kochi Metro ensures a safe and secure transit

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Connectivity

19. The route of Kochi Metro is comfortable for my needs

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

20. Metro station is easily accessible from my place of residence

- Strongly agree
- Agree

- Neutral
- Disagree
- Strongly disagree

21. Kochi Metro Feeder buses and taxis provide better connectivity

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Other facilities

22. Metro card (Kochi1 card) facility is easy to use

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

23. Metro parking facility is cost effective

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

24. Washrooms are available and have easy accessibility

- Strongly agree
- Agree
- Neutral

- Disagree
- Strongly disagree

25. Disability infrastructure is really helpful

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

26. There are enough signboards to locate metro stations

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

27. Are you aware of the commuter schemes of metro?

- Yes
- No

28. Which among the following schemes do you prefer?

- Single day pass (student) [Rs.50/-]
- 30 day pass (student) [Rs.900/-]
- Single day pass [Rs.125/-]
- Weekend pass (for Saturday & Sunday) [Rs.230/-]
- 7 day pass [Rs.550/-]
- 30 day pass [Rs.2200/-]
- 3 day pass [Rs.280/-]
- 15 day pass [Rs.1150/-]
- 45 day pass [Rs.3200/-]

None of the above

29. What are your suggestions to improve Kochi Metro (if any)?