# Major Research Project

on

# THE CONSUMER PREFERENCE

# TOWARDS PRIVATE CARS OR CABS


**Submitted By**

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# Certificate

This is to certify that Vasu Aggarwal 2K21/DMBA/137 has completed the project report titled "THE CONSUMER PREFERENCE TOWARDS PRIVATE CARS OR CABS" in partial fulfillment of the requirements for the award of the degree of Master of Business Administration (MBA) from Delhi School of Management, Delhi Technological University, New Delhi during the academic year 2022-23.

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# DECLARATION

I, Vasu Aggarwal student of Delhi School of Management, Delhi Technological University hereby declare that the Project Report on "THE CONSUMER PREFERENCE TOWARDS PRIVATE CARS OR CABS" submitted in partial fulfillment of the requirements for the award of the degree of Master of Business Administration (MBA) is the original work conducted by me. I also confirm that neither I nor any other person has submitted this project report to any other institution or university for any other degree or diploma. I further declare that the information collected from various sources has been duly acknowledged in this project.

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## Executive Summary

The purpose of the research study was to determine if people preferred private vehicles or taxis.

It highlights the elements that may affect how clients choose between private automobiles and cabs.

The five chapters in this research study are: Chapter 1, "Introduction to the Study," Chapter 2, "Literature Review," Chapter 3, "Research Methodology," Chapter 4, "Data Analysis," and Chapter 5, "Findings and Suggestions."

In this study, which compared clients' preferences for private automobiles versus taxis, I employed the questionnaire approach, and the replies I got were then used to analyze the data.

Both private vehicles and cabs are used by the respondents, but they regard private cars to be more alluring, practical, and useful, according to my findings after analyzing the responses.

The majority of respondents found cabs more convenient while travelling to offices or schools and in heavy traffic, whereas private automobiles were most frequently utilized when travelling in luxury with family and friends. The respondents also reported greater satisfaction with private cars than with cabs.

Therefore, I was able to conclude from these detailed analyses that consumers chose cabs over private cars.

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# CHAPTER-1

# INTRODUCTION

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## 1.1 BACKGROUND

Urban transportation infrastructure has seen significant alterations over the last ten years. In India's metropolitan and urban centers, private cars such as cabs have emerged as one of the most crucial ways of transportation. Private automobiles are ones in which people use their own car for transportation; they are comfortable to travel in and save time, but in some places, they are only available to those who can afford their own car. Because it costs money to maintain an automobile, this is a constant struggle. Cabs are those vehicles where the passenger is required to tip the driver in order to get from one location to another. With the aid of technology, the structured automobile rental market is constantly expanding. Customers today use mobile apps to reserve cabs at any time and from any location in urban areas. Customers were booking cabs rather than traditional modes of transportation like automobiles and local buses, among other options, thanks to the pricing strategy employed by taxi drivers. The car rental industry, like the majority of other industries, had undergone significant change thanks to internet technology. Due to fierce competition among organized taxi operators, customers can book cabs at reasonable prices.

## 1.2 A Recent Shift in the industry:

**1.2.1 Mobility on one's own:** In 2022, sales of cars and SUVs experienced their largest decline in more than two decades, making it one of the most challenging years for the auto industry even after the pandemic took hold. Despite substantial discounts, buyers stayed away due to the economic downturn, difficult financing, and rising uncertainties. In recent years, there has been a shift toward mobility in small format. In India, two-wheeler ownership is expected to reach 60% by 2022, up from 39%-40% in 2010. In contrast to the slowdown in the market for new cars, the used car market in India has grown over the years because of a variety of factors, such as people's reluctance to invest in a new car during a downturn in the economy, their awareness of value, the higher quality of vehicles entering the used car market, and the increased penetration of organized players. In India, where there are only 22 cars for every 1,000 people, there is still a lot of room for personal

mobility to expand.

### 1.2.2 Mobility shared:

A robust shared mobility ecosystem has emerged as a result of rapid urbanization and growing urban congestion. India has everything necessary to become a world leader in shared mobility. India's opportunity to meet transportation demand with shared mobility solutions is supported by a number of factors, including a young demographic, improved digital infrastructure, familiarity with shared services, and a vibrant entrepreneurial culture. A number of potential advantages can be derived from shared mobility, which increases system efficiency through improved connectivity and increased asset utilization. The "per km" cost of shared mobility is comparable to that of three-wheelers and lower than that of private automobiles. As a result, the move to shared mobility is taking off. In light of the expansion of taxi-hailing apps across the country in recent years, ride hailing has emerged as one of the most popular shared mobility models in India among the models depicted in the graphic preceding this section. Major taxi aggregators operate in over 100 cities, but they concentrate primarily on metropolitan areas. The top seven metropolises account for more than 75% of the business for shared mobility providers.

**1.2.3 Subscription based model:** Indian millennials, who are looking for more flexibility and convenience, are rapidly adopting leasing and subscription models. The demand for such models is being driven by the trend toward "asset-light" lifestyles. In light of the global economic downturn brought on by the COVID-19 pandemic, leasing a vehicle may be seen as a better option than purchasing one. The subscription models are more flexible for customers and cost significantly less than car EMI and insurance premium payments.

## 1.3 CONCEPTUAL FRAMEWORK

### 1.3.1 Discussing the parameters involved in traveling via a cab or a private car:

1. **Costing of owning a car:**

Which car you choose totally depends on you, but for the sake of the calculation, let's go a little conservative and assume it costs Rs 8.5 lakh. A diesel car would give you a mileage of around 12 km and cost you roughly Rs 96 per liter. This mean that per km cost is approx. Rs8. Keeping in mind traveling to and from office, occasional rounds to the market, meeting friends etc. you'd easily travel about 1500 km in a month. This, over a period of 5 years, would come around to Rs.7,20,000. Now let's look at our next cost - maintenance. If you are a safe driver, the total cost should not be more than Rs 30,000 in a year. So, over the run of 5 years, that would come around to Rs 1,50,000.

Moreover, a basic car insurance will cost you around 25000/ year. Over a span of 5 years, you will probably spend Rs. 1,25,000 over insurance.

Adding all of them:

cost of owning a car for 5 years = cost of the car + insurance + cost of fuel + cost of maintenance

Rs 8,50,000 + Rs 1,25,000 + Rs 7,20,000 + Rs 1,50,000 = Rs 18,45,000

1. **Cost of taking a cab:**

This is a simple case where we can calculate total expense on cabs by taking an average cab cost ride.

On an average the cab ride costs Rs.20/km. Assuming someone traveled 1500 Kms in a month, the cost for this would come down to Rs. 30,000/ month. Let's extrapolate the same data over 5 years, here the cost would come out to be Rs. 18,00,000.

Taking into consideration late night charges, expensive rides on special occasions etc., the amount can fluctuate between Rs 18,00,000 - Rs 18,25,000.

This still looks cheaper than buying a car.

2. **Comfort**

Comfort is a personal preference. A person's definition of a comfortable level can vary widely. Each level has its own parameters. The general consensus is that private cars are more comfortable in terms of experience, adaptability, use, distance traveled, etc.

3. **Advantages & Disadvantages:**

Travel, in any form, is glorious. Some people like to travel by car, while others like to take the train, bus, bike, auto rickshaw, and other modes of transportation. If you want to make the best choice, you should weigh the good things against the bad things in everything.

**Advantages & Disadvantages of Private Car:**

**Flexibility**

The ability to be flexible is one of the most significant advantages of driving. You can stop anywhere, take any street, or take any shortcut that works for your commute. The majority of people prefer to travel at their own pace and arrive at their destination promptly and without haste. While others prefer to hurry along with their coworkers and speed through the streets.

You can also bring your partner, children, or other family members along when you travel by car. You

can also drop them off on the way and have fun with them while you're moving. A little fun hurt one, but just make sure everyone is safe.

**Better Views**

Another advantage of driving is the opportunity to take in spectacular views. When you travel by public transportation, you are constantly surrounded by people and the bustle they bring with them. On the other hand, you get to enjoy your commute to work while humming along to your favorite songs without having to worry about the loud noise.

**Carpooling & Money Saving**

You can now pool your car with your friends and colleagues and save a significant amount of money on fuel costs by carpooling. By doing this, you not only save money but also help the environment and have a great time with other people. The best conversations are lengthy ones with the right group of people!

*Disadvantages of Travelling by Car*

**Distances**

Driving is a great option, especially for short trips. Long journeys, on the other hand, are extremely exhausting and time-consuming. The worst part is when there are long lines of cars, reckless drivers, and careless pedestrians on the streets. It becomes difficult to maintain concentration while driving for hours while surrounded by both pollution and people.

**Bad Weather**

Bad weather is another significant drawback because it can have a significant impact on your journey. If you don't want to ruin our entire day, you should be attentive and travel prepared. In the monsoon, potholes and slick roads are your enemies. They damage and destroy the tires on your vehicle. In addition to being risky, it is challenging. We are all aware that driving in rain, storm, or snow can have a significant impact on your skills and conditions.

**Hidden Costs**

Driving is not the cheapest method of transportation. What if your vehicle breaks down in the middle of your journey and you need to get to a business meeting right away? You will lose the deal and a significant amount of money on the cost of the repair. You should only drive when it's safe to do so.

Last but not least, parking is a major issue in India. If you don't check to see if there are parking spaces in your office building, it will be difficult to drive to work.

Ensure that your vehicle has comprehensive coverage and is in excellent condition. Theft, natural disasters, and other perils are all covered by car insurance. To drive worry-free, purchase or renew your automobile insurance.

**Advantages & Disadvantages of Cabs:**

**Offers**

One of the main benefits of using online taxi services is that passengers can get offers for their rides at random. Before searching for a ride online, you can take advantage of these deals by entering the appropriate promo code.

**Choice on type of ride**

The customers can choose how they want to drive the vehicle. You can choose to rent a single car or join a carpool with other people. One can also choose the kind of car they want to ride in. They can choose how much they want to pay.

**Service that is available around the clock**

People can use online taxi services at any time of day, whether it is early in the morning or late at night. People can use these cab services any time of day or in an emergency when there might not be another way to get to work.

**Time Efficient**

Booking a cab online takes very little time. It connects you to nearby taxis so that they can quickly and easily get to the pick-up location. Customers no longer need to travel on the roads to request a ride.

**Easier for the drivers to find their customer**

Drivers are notified via their app whenever a customer in their vicinity wishes to hail a ride, saving them the time and effort of searching for customers. The driver can accept the ride and proceed to the designated pickup location if the location and time are convenient to him.

**Easy access for customers**

Refusal to be taken to one's desired location by a cab after another is extremely inconvenient and occasionally irritating. The driver accepts the ride to the location on his own for online taxi services. As a result, rejection is almost nonexistent.

**Cashless payments**

Online taxi services give customers the option to pay in cash or online. He can choose to pay online if he does not have enough change. The customer and the driver don't have to worry about carrying the right change because of this.

### 1.4 India's Leading Automotive Companies:

These are India's top ten Automobiles companies:

1. Maruti Suzuki
2. Hyundai India
3. Tata Motors
4. Mahindra & Mahindra
5. General Motors India
6. Honda Motor Company
7. Hero MotoCorp
8. TVS Motor Company
9. Bajaj Auto Limited
10. Ashok Leyland

### 1.5 CABS

In order to gain a deeper comprehension of the dynamics of the cabs service industry on a company-by-company basis, this section examines two significant businesses in the sector. There are numerous reasons to conduct this study in India, primarily in states like Bengaluru, Mumbai, and New Delhi, among others. In India, platform economy taxi service providers and users are disproportionately concentrated in Bengaluru.

The city of Bengaluru also serves as a regional economy, with unique economic and labor

characteristics that can be applied to other cities.

Although Ola's headquarters are in Bengaluru, Uber thrives in the city. The presence of city-based taxis in Indian cities demonstrates a great deal of diversity. Public hail taxis for intra-city travel are regulated by a city taxi scheme and strong worker organization in cities like Mumbai and New Delhi.

### 1.5.1 OLA

**Ola Cabs** (stylized as **OLA**), is an Indian ridesharing company (TNC) that provides taxi, food delivery, ridesharing, and ride service booking services. Bengaluru, Karnataka, India, is the location of the business. Ola Electric, India's leading EV manufacturer, announced on January 24, 2022, that it had raised over $200 million from Tekne Private Ventures, Alpine Opportunity Fund, Edelweiss, and other investors. In the most recent round, the business is worth $5 billion. The business is owned by a number of venture capitalists, including Softbank. Ola expanded into its first international market, Australia, in January 2018, and into New Zealand in September 2018. Ola launched its UK operations in March 2019, introducing auto rickshaws to the UK. Before it launches in London, more than 10,000 drivers have applied both online and offline.

**SALES REVENUE**

In FY21, ANI Technologies, the parent company of Ola, declared a standalone operating profit of Rs 89.82 crore (profit before finance cost, depreciation, amortization, and tax, or EBITDA), compared to a loss of Rs 610.18 crore the previous fiscal year.

The majority of the company's consolidated revenue, which it intends to make public through an IPO, came from ride hailing (IPO). According to reports, Ola plans to raise more than $1 billion through an IPO in the next months.

Additionally, ANI Technologies offers banking services and food delivery. In FY21, it achieved a reduction in its operational deficit to Rs 429.20 crore while, on a consolidated basis, revenue fell 63% to Rs 983.15 crore.

### 1.5.2 UBER

**Uber Technologies, Inc.**, more commonly referred to as Uber, is a multinational ride-hailing company based in the United States that provides services such as food delivery, ridesharing, and a

micro mobility system that includes electric bikes and scooters. The business is headquartered in San Francisco and operates in over 785 global metropolitan areas.

It is anticipated that Uber will have more than 131 million monthly users worldwide by 2021. a market share of 67% for ride-sharing in the beginning of 2019 and a market share of 24% for food delivery in 2018 in the United States. Uber's dominance of the sharing economy has resulted in industry shifts known as "uberisation," and numerous startups have referred to their offerings as "Uber for X." Uber has been criticized for treating drivers unfairly, disrupting the taxicab industry, and increasing traffic congestion, just like other transportation network companies. Additionally, the business has been criticized for a number of illegal practices and its aggressive approach to dealing with regulators.

**SALES REVENUE**

- Ube Uber's India division reported a 7.1% increase in operating revenue to Rs 396.95 crore for the fiscal year that ended in March 2022.
- Its total loss decreased significantly over the same period, from Rs 333.89 crore in the pandemic-hit FY21 to Rs 216.42 crore.
- The ride-hailing sector contributed Rs 388.23 crore of the company's operational revenue during the year ending March 2022, up 30% from Rs 299.76 crore in FY21.
- Uber India Systems reported a 44% year-over-year decrease in employee benefit expense for FY22 to Rs 150.96 crore, according to regulatory filings obtained via business intelligence platform Tofler.
- In comparison to FY21, the company's advertising and promotion costs decreased by over a third in FY22.

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## 1.6 OBJECTIVES

1. To understand attitude of people towards cabs and private cars.
2. To understand reasons for people opting between cars and cabs.
3. To analyze factors influencing the choice of selection between cars and cabs.

## 1.7 SCOPE OF THE STUDY

1. The scope of the study is limited to a minimum of 50 respondents.
2. The scope of the study is open to people of different age groups
3. The data was collected from a set of working and non-working classes.

# CHAPTER-2
# LITERATURE REVIEW

## 2.1 Identifying Public Preferences

A good way to address the energy and environmental issues related to the transportation industry is to encourage urban commuters to use public transportation. Public expectations and requirements should be at the forefront of the policy-making process in order to improve public transportation and make it the mode of choice for urban commuters. This study employs the pairwise weighting approach (also known as the Analytical Hierarchy Process) to determine the relative importance of several variables for convincing urban commuters to use public transportation. The initial poll was carried out to gather information on public preferences for four parent criteria—reliability, comfort, safety, and cost—that were determined through literature analysis and expert opinion. The initial poll was carried out to gather information on public preferences for four parent criteria—reliability, comfort, safety, and cost—that were determined through literature analysis and expert opinion. This data was gathered between January 2013 and July 2013 utilizing questionnaire-based surveys from roughly 50 locations using a stratified random sample technique from nine districts of Delhi. Our findings indicate that the most crucial factor in persuading urban commuters to switch from private automobiles to public transportation is safety, followed by dependability (27%), affordability (21%) and comfort (16%). Due to greater regularity, schedule adherence, shorter travel times, comfort, and safety, commuters were found to prefer Delhi Metro services over buses and other forms of public transportation based on the aforementioned four criteria. Since the cost of the trip was not seen as a key factor, commuters were willing to pay extra for improved public transportation services. The findings also revealed that 96% of commuters are eager to switch to public transportation if the aforementioned factors or services are taken into account in order to provide an effective public transportation system. These findings can help transport planners balance public desires with the available technical options for the efficient use of the resources at hand.

## 2.2 Emerging smart urban para-transit solutions

Hanif and Sagar (2016), a cutting-edge research team, discovered that taxi services in Mumbai have a huge potential for expansion given the growing demands of the business community worldwide and the growing wealth and middle class. Many Mumbai residents prefer to hire a taxi rather than drive to a shopping center, special event, or even a late-night party because of the city's severe parking issues. When it takes time to locate a parking space for one's own vehicle or to negotiate difficulties on a quiet weekend, this service receives higher marks. According to the study, customer

satisfaction is extremely high. Positive for expansion and growth is this. Sarvepalli and Prakash (2016) made an effort in their paper to precisely cover the taxi aggregation industry in India because technology-based innovators have provided the solution. It also discusses the current situation and customer and business issues.

The industry has been transformed by Ola and Uber. In a nutshell, it has affected the industry's sluggish consolidation, and only the analysis of businesses that place an emphasis on providing the highest possible level of service will continue to do so in the future. For the benefit of future research, the RIDE model explains why ongoing research is necessary to comprehend the client and how innovation gaps can be innovatively bridged through the use of technology. Companies that maintain their position in the market are those that respond to shifting trends as quickly as possible. According to Venkatesh and Easaw (2015), the taxi aggregator business model's success is sufficient evidence of the growing influence of technology on a company's success.

### 2.3 Travel Behavior

A lot of countries now have policies that encourage people to use public transportation, bike, and walk instead of driving their own cars. It is believed that the development of compact urban forms and the design of urban communities that encourage walking are particularly efficient methods for decreasing automobile dependence. As a result of the incomplete understanding of the factors that influence travel behavior, it is challenging to formulate efficient travel policy. Personal characteristics and circumstances, in addition to urban design, influence mode selection and travel distances. Compared to low-income households, people with higher incomes are more likely to own and use a private vehicle. Car use is more common in families with children than in single-person households. The mode of travel and the distance traveled are also affected by the trip's purpose—work, shopping, or leisure. We went deeper into some of these connections by utilizing the OVG, the Netherlands National Travel Survey. As determinants of mode selection and travel distance, the relative importance of personal characteristics and residential environment characteristics was investigated. In multivariate models of travel behavior, both sets of factors maintain a clear and strong relationship with travel behavior.

### 2.4 Urban mobility at a tipping point.

M Access to work and a sense of personal freedom are two major advantages of mobility. However, the current state of affairs comes with a number of ongoing issues, such as costs and congestion. New mobility offerings are still in their infancy. When it comes to weighing costs, convenience, service, and time, consumers are learning to make compromises. Behavior can be altered by new

technologies, and this may be the case with transportation. Smartphones are already widely used in developed nations, and many middle- and lower-income nations are catching up quickly. That has made it possible for businesses like Uber and Didi Dache in China to offer on-demand mobility through apps. In developed nations, there are subtle hints that consumer preferences and behaviors are changing. Other apps allow travelers to plan the quickest and cheapest way to get from point A to point B in real time (see sidebar "Startups that are reimagining personal mobility"). Ownership rates are falling and fewer people are driving, even in the United States, a nation with a deep love for automobiles.

**2.5 Evaluating the potential rise in travel by non-driving, elderly, and people with medical conditions that prevent them from traveling.**

V The mobility of currently underserved populations can be improved by vehicle automation: seniors, non-drivers, and those with restricted medical conditions We use U.S. travel survey data from the NHTS to estimate limits on how VMT from these demand wedges could change with autonomous vehicles and characterize each of these populations as a demand wedge in this paper. Despite the fact that both age groups in the United States rely heavily on automobiles for daily transportation, their travel habits are very different. The proportion of overall VMT decreases with age in proportion to the population size of each cohort, and older adults typically drive less than their younger cohorts. VMT decreases significantly in older women, particularly at a much earlier age than in men. This is especially evident in the young senior cohort, where women start driving about 6000 miles per year and men drive close to 11,000 miles per year. By 2030, the United States' senior population is expected to grow by about 60%, according to the United States Census Bureau (U.S. Census Bureau, 2014). The United States had approximately 43 million senior citizens in 2013 (U.S. Census Bureau, 2013); The senior population would rise to approximately 74 million by 2030 if this increase occurred. The largest difference in travel behavior exists between drivers and non-drivers, who, due to their inability to drive, travel far less than their counterparts within all age groups. If we assume that senior drivers in 2030 continue to travel as much as senior drivers do today, the population increase alone would result in a 201 billion mile or a 9.4% increase in light-duty VMT relative to 2013. According to the 2009 NHTS, approximately 9 million of the 22 million adult non-drivers have a medical condition that makes it difficult to travel, and approximately 8 million have reduced their daily travel as a result. In contrast, the United States has approximately 200 million adult drivers. About 14.7 million of these drivers report having a medical condition that makes it difficult to travel, and 11.7 million of them have reduced their daily travel as a result. Only about 6% of drivers, compared to 37% of non-drivers, have reduced their daily travel due to a

medical condition in proportion to their total populations. The total annual light-duty VMT of people aged 19 and older in the United States would rise by approximately 14%, or 295 billion miles, if all three of the demand wedges we looked at were taken together and assumed to occur simultaneously. The majority of this increase would be female, and the oldest senior cohort would see the greatest percentage increase in VMT. Adults of working age (19–64)

**2.6 Consumer behavior wrt E-cab**

In this paper, we attempted to investigate consumer behavior regarding e-cab hailing. Customers' decisions are influenced by a variety of factors, including price, discounts offered, brand of cab aggregators, ride-sharing option, environmental consciousness, service quality in terms of driver performance (Smartness, Punctuality, and Good Driving Skills), physical safety, privacy, and other factors. E-wallets have replaced taxi meters in this digital era, resulting in a win-win situation for customers, drivers, and cab aggregators. According to the study, e-cab hailing and ride-sharing services are popular with younger people due to their point-to-point service, lack of parking hassles, and shorter wait times. It makes it easier for people living in cities to move around. It appears that ride-sharing services complement public transportation. In addition, while traveling, Rider may experience sexual harassment, among other issues. cases of drivers acting inappropriately issues with navigation as a result of poor GPS connectivity. India's transition to a digital economy necessitates reducing data fees and improving internet connectivity to make it more accessible to all potential customers. On this basis, you should not book a cab based on a driver's rating.

**• 2.7 Economy Share**

In recent years, digital marketplace platforms, also known as the "sharing economy," have emerged as an essential component of the digital economy. Applications and platforms that enable private individuals to share assets or services between themselves for free or for a fee power the sharing economy. The sharing economy has been hailed as having enormous economic potential in a variety of fields, including finance, housing, transportation, service provision, and tourism. The sharing economy, according to PriceWaterhouseCoopers (PwC), will be worth 125 billion USD in the next decade. Models of the sharing economy will have a greater impact on global labor markets, environmental sustainability, and consumer behavior. There are a number of reasons why the sharing economy is growing quickly in developing nations. Rapid urbanization has been accompanied by an increase in "digitalization," the adoption of new technologies, and the persistent rise in social network use. The majority of sha-ring economy applications run on mobile phones,

which are becoming increasingly popular in developing nations. Businesses that participate in the sharing economy see heavily urbanized regions in the Global South as frontier markets because of the significant challenges they face when it comes to transportation, climate change, and housing. The majority of studies have focused on the sharing economy in North American and European contexts, so despite the sharing economy's importance to emerging economies, little is known about its size, composition, or broader effects. The International Development Research Centre (IDRC) has become more concerned with regulatory and inclusion issues as informal entrepreneurship, low-cost hardware, and growing connectivity continue to spread throughout the Global South. In the developing world, regulating platforms like Uber and AirBnB has become a significant obstacle. It is not yet clear whether traditional regulation will stifle progress toward normalizing the informal economy because economic informality is already the norm in many places.

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- **2.8 Studying Travel Behavior**

A general shift in our economy toward collaborative consumption, a growing number of direct-to-consumer transportation options, and ever-increasing pressure on household transportation budgets are altering the traditional transportation landscape. New players in the industry are putting themselves in between customers and traditional transportation providers as travel behavior and demand change, challenging the planning, design, operation, regulation, and funding of public transportation and infrastructure. A shift away from privately owned modes of transportation and toward mobility solutions that are used as a service prevents this disruption. The term "Mobility as a Service" (MaaS) is used to describe the idea, which has attracted a lot of attention all over the world thanks to the early leadership of countries in Northern Europe. In Indian cities, there is no full-service MaaS offering that combines subscription services for both public and private transportation. The global review of MaaS initiatives demonstrates that the delivery of MaaS products will be an evolutionary process supported by public sector vision and shaped by market opportunities. The study shows that MaaS is not and never will be a one-size-fits-all solution for every situation. Instead, based on their mobility and service environments, various models are likely to emerge in each country, state, city, or location. It is anticipated that the public sector will need to establish a distinct strategic framework in order to establish the appropriate level of regulation and the appropriate policy strategy for the private sector in order to develop a Common MaaS model for cities.

**• 2.9 Socio-Economic Analysis of Uber Cab Drivers**

India has had auto taxis for a very long time. Since a later time, private automobiles have been fairly common. Even though there were more private cars, regular taxis were still important. For those who required private transportation at their own convenience, regular taxis continued to be the preferred mode of transportation. The taxi stands were the locations where the standard taxis could be found. Customers had to physically go to the taxi stands in the beginning to use their services. They either had to make their reservations over the phone or stand in a line at a taxi bay.

Additionally, cash or a check were used to cover any additional costs. Later, as telephony technologies advanced, making use of them became easier. Today, it is so simple to use taxi services that they can be summoned to the user's location with just a few clicks of a few buttons on his smartphone. These services are now known as "online taxies." Users have come to appreciate the convenience of these services to such an extent that they would consider them first for any length of local travel before making their way to a bus stop or taxi stand. The payment can also be made quickly and easily using online payment methods. The rapid expansion of online taxis and their establishment as a new mode of transportation in recent years have been demonstrated. Since then, the public transportation sector has adopted its use of technology as a strategy. In Kerala, numerous online taxi services like Ola, Uber, and others exist. Uber has emerged as a very popular mode of transportation among the brands that are available. Utilizing high-speed data and the internet, Uber manages its taxi service by providing accurate information about nearby public transportation options. The user has easy access to features like local traffic, waiting time for a taxi, driver information, and available payment options. The user benefits from having a ride that is simple and convenient. Uber has the advantage of being able to reduce costs by efficiently managing rides by determining the user's proximity to cars that are available. The user can benefit from the savings by taking a low-cost ride. Uber's advantage in terms of flexibility in managing rides is the free time that comes from sharing information about the car and user locations.

# CHAPTER-3
# RESEARCH METHODOLOGY

## 3.1 RESEARCH DESIGN

It is the overarching operational pattern of the project's framework that specifies what information will be collected for source by those operations.

Exploratory research design and conclusive research design are the two primary categories of research designs. Descriptive and causal/experimental research designs are two types of conclusive research designs.

The nature of the problem, as well as the technique of data collection and analysis, determines the suitability of a research design for a certain study.

For this topic, a descriptive research strategy is applicable.

## 3.2 RESPONDENTS

Respondents are those individuals who complete a survey or interview for the researcher, or who provide data to be analyzed for the research study. Respondents can be any age, but determined by the scope of the study, and must agree to informed consent to participate. The numbers of respondents in this research were 76.

## 3.3 SAMPLE UNIT

The population is from Delhi NCR region and is not limited to any age.

## 3.4 SAMPLING TECHNIQUE

SAMPLING METHOD-Convenience Sampling

Convenience sampling is a non-probability sampling strategy in which the samples that are taken are according to the convenience of the research conductor.

The convenience sampling technique was chosen for this study because of its speed, cost-effectiveness, and ease of availability of the sample, as well as the fact that respondents are easy to discover.

## 3.5 DATA COLLECTION

The methodological challenges and considerations for obtaining and handling the data utilized in the study are explained in this section. The section is divided into two sections, each of which represents

a different aspect of the data collection process. The first section offers information on data gathering technologies, while the second section contains information on the questionnaire's incorporation and structure.

### 3.6 DATA COLLECTION TOOLS

I have used -

- **Primary**

Information that has never been published or existed before is referred to as primary data. Primary data is collected with the intention of being critically analyzed.

This study uses a quantitative research strategy to establish facts about the subject (questionnaire).

An organized questionnaire is used to gather data on people's intents and views towards chatbots. A questionnaire is a tool used to gather data by asking a series of questions.

**Primary data** was collected through a formal questionnaire, addressed to the students of Matric, 10+2, Graduate and Postgraduate in Delhi NCR region.

The questionnaire was distributed through an online link to ensure a high response rate. The students were briefed about the purpose of the survey. The questionnaire was divided into four data capturing sections:

1. The age of the respondents
2. The gender of the respondents.
3. The occupation of the respondents
4. The education qualification of the respondents.

**Sampling technique**: convenience sampling

**Sampling unit**:

(a) Matric

(b) 10+2

(c) Graduate

(d) Postgraduate

**Sample size**: 76 respondents

**Research location**: Delhi NCR

- **Secondary**

Information from previously published articles, reports, etc. is considered secondary data. We used a variety of books, magazines, articles about the topic under inquiry, and other web sources.

### 3.7 Data Analysis Tool

Statistics were applied to the information gathered from the questionnaire. Bar graph frequency and percentages are used to tabulate, collect, and code the data as well as to analyses it and produce findings. Data analyses is conducted using SPSS software.

### 3.8 Questionnaire

The questionnaire was created with goals in mind. There are ten questions in all in the structured questionnaire.

# CHAPTER-4
# ANALYSIS AND INTERPRETATION

Analysis of data is very important as it brings us very important information regarding the various researches. Analysis is done through various statistical tools like graphs, pie charts and tables. Proper sample size is taken and then the desired output is obtained. For this research statistical tools bar graphs, pie charts and histograms are used. The survey is conducted with 76 people. Allthe information is authentic and genuine given by actual people.

**Chart No.1- Age of Respondents**

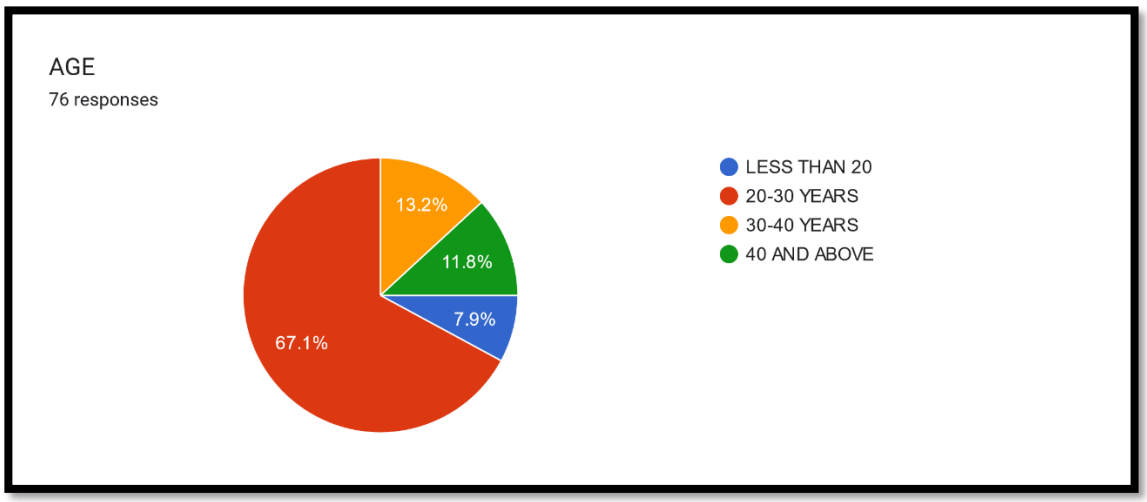


Fig 1 (Source: Own Analysis)

The pie chart above depicts the age group of people who have filled this particular form. Out of 76 people 7.9% people age are from less than 20 years 67.1% people age from 20 to 30 years of age, 13.2% people age from 30 to 40 years and 11.8% people from age 40 and above.

## Chart No.2- Gender of Respondents

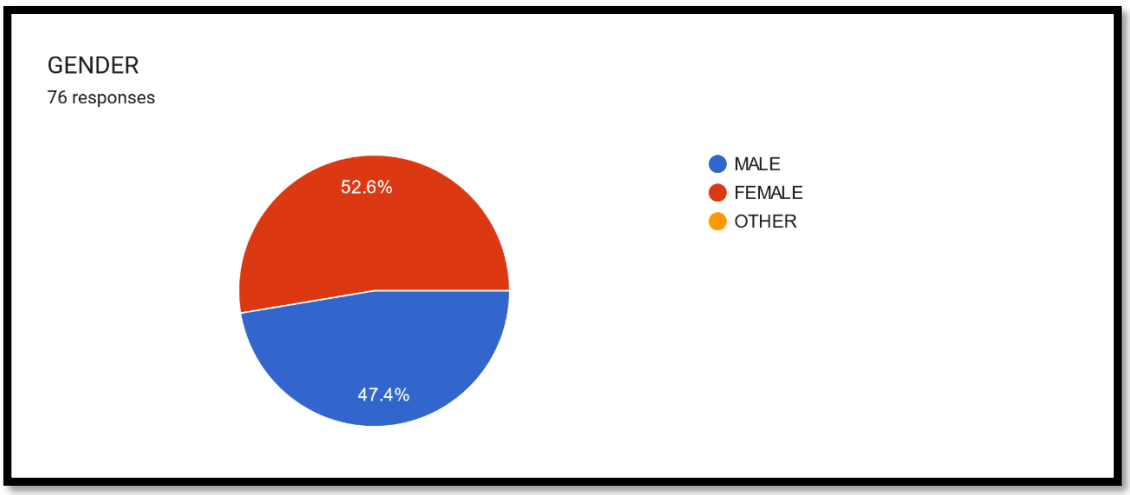


Fig 2 (Source: Own Analysis)

The pie chart above depicts the gender of people who have filled up this form which consists of male and female members. 52.6% people are female members and rest 47.4% people are male members out of 76 people who have filled this form.

## Chart No.3- Occupation of Respondents

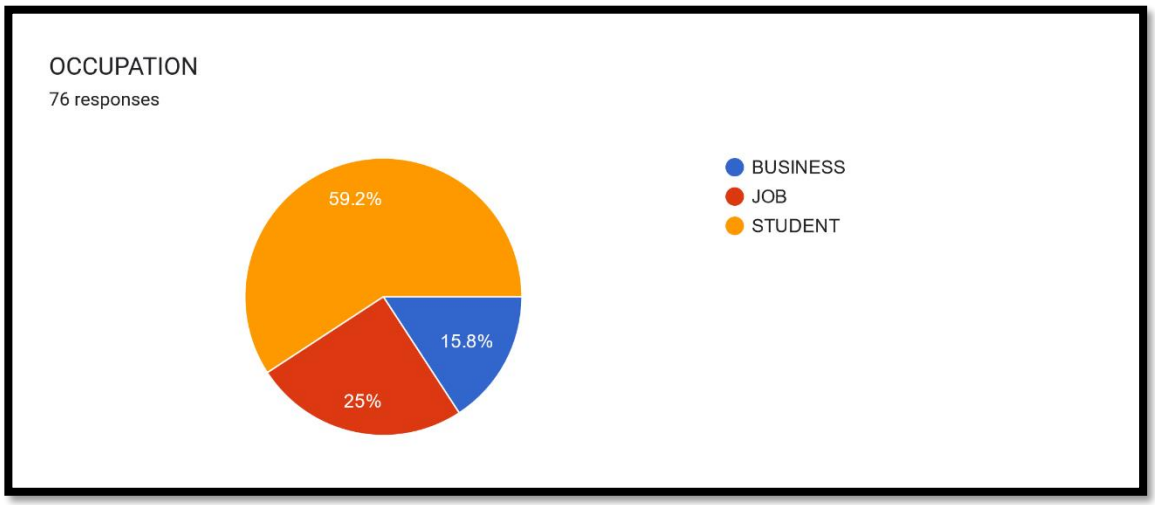


Fig 3 (Source: Own Analysis)

The above chart depicts the occupation of people i.e., 59.2% people are students, 25% peopleare job workers, 15.8% people are businessmen.

## Chart No.4- Education Qualification of Respondents

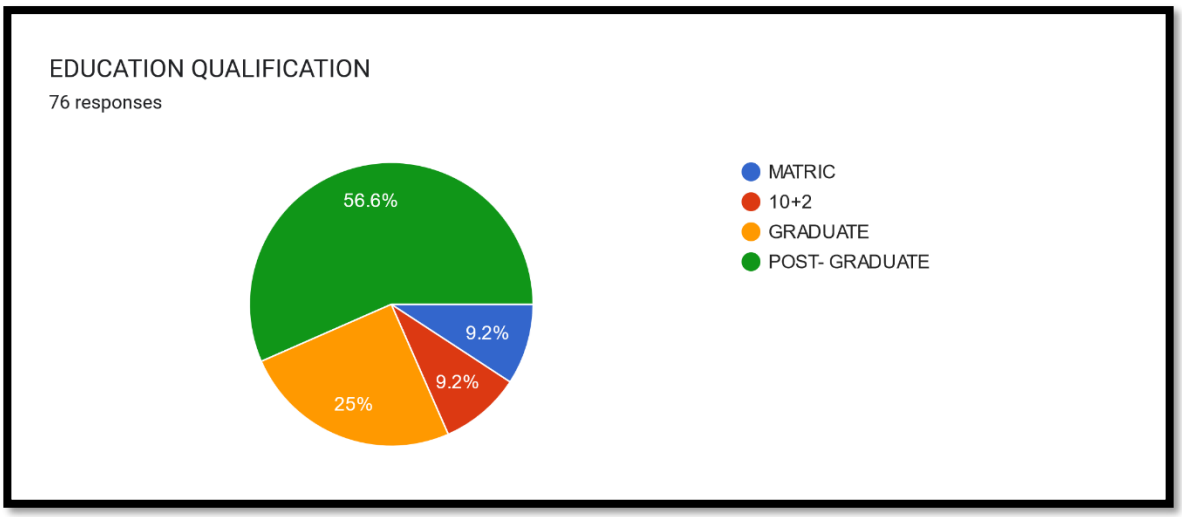


Fig 4 (Source: Own Analysis)

The above chart depicts the education qualification of people who have filled this particular form. Out of total people 25% are graduates, 56.6% people are post graduates, 9.2% people are matrices and the rest 9.2 % people are 10+2.

## Chart No.5- System of Transportation Preferred by Respondents

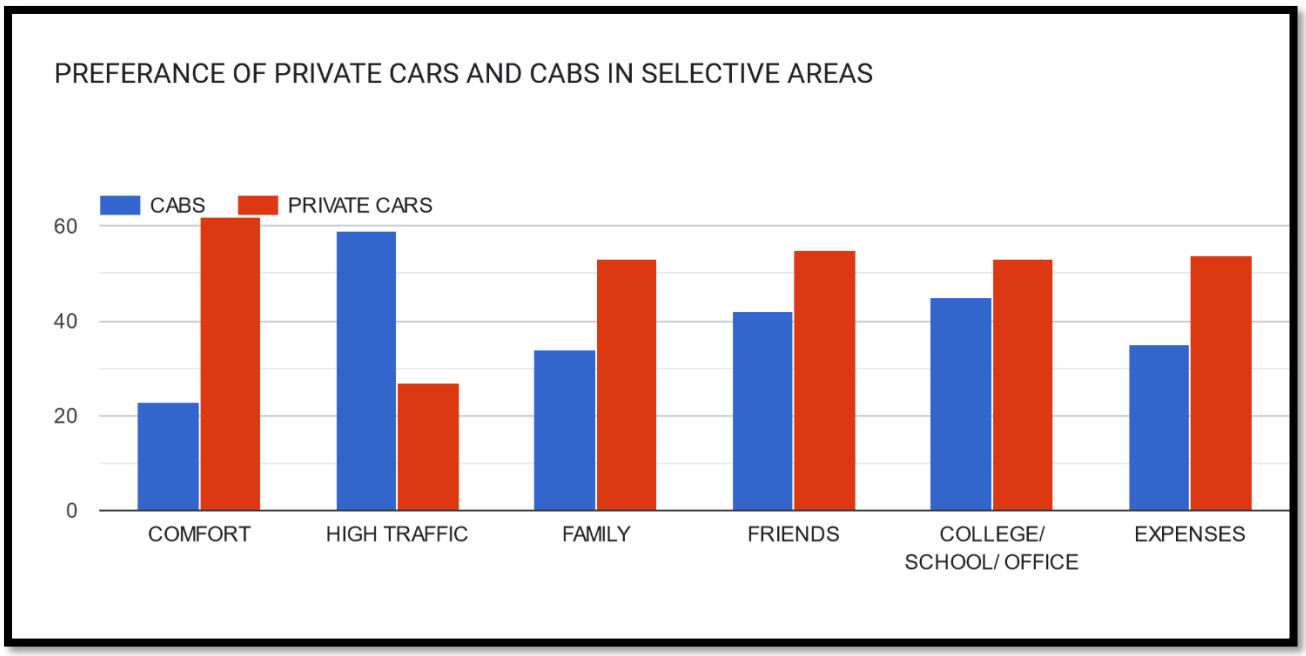


Fig 5 (Source: Own Analysis)

The above chart shows preference of respondent's basis different parameter likes comfort, expenses, high traffic area etc.

**Chart No. 6- Satisfaction of Respondents by Their Private Car**

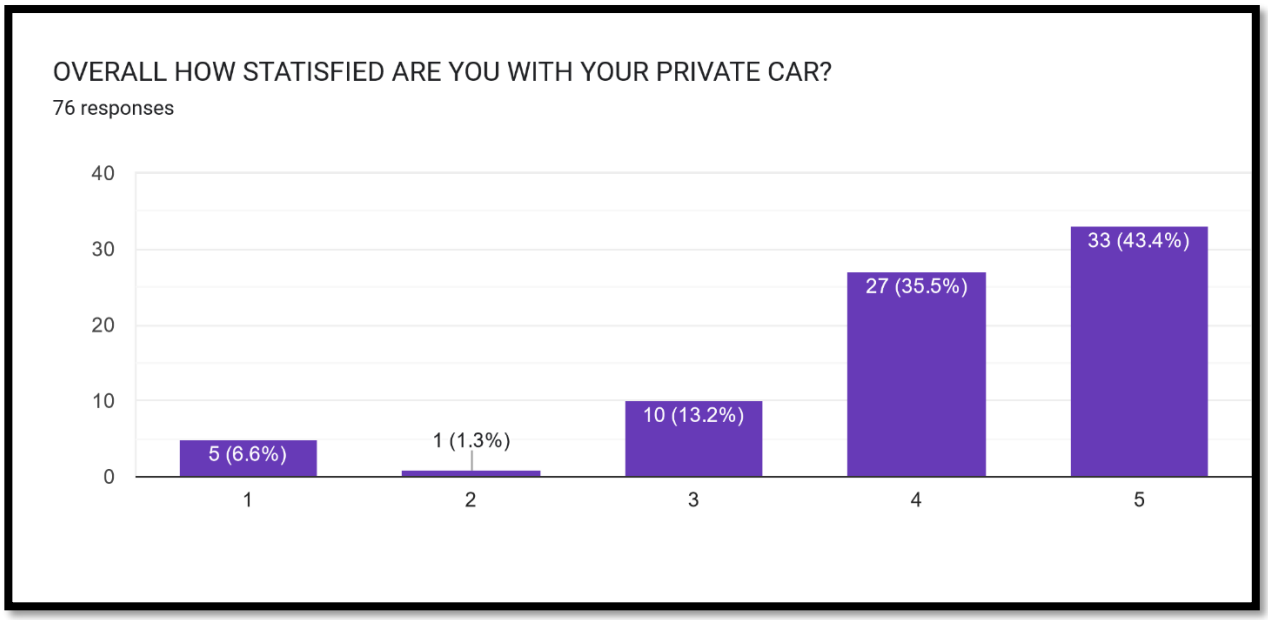


Fig 6 (Source: Own Analysis)

The above graph depicts the satisfaction level of people for private cars. 1 depicts least satisfied i.e.,6.6% and 5 depicts highly satisfied i.e., 43.4% people.

**Chart No. 7- Satisfaction rate of cabs**

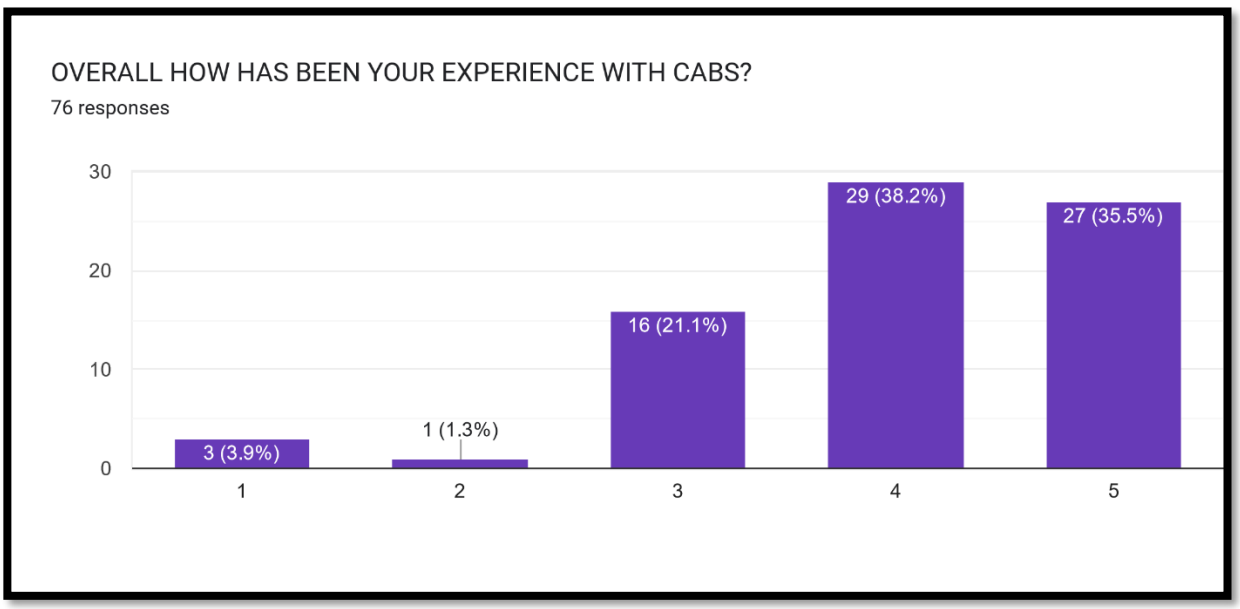


Fig 7 (Source: Own Analysis)

The above graph depicts the satisfaction level of people for cabs. 1 depicts least satisfied i.e., 3.9%and 5 depicts highly satisfied i.e., 35.5 % people.

**Chart No. 7- Experience with the cabs in traffic**

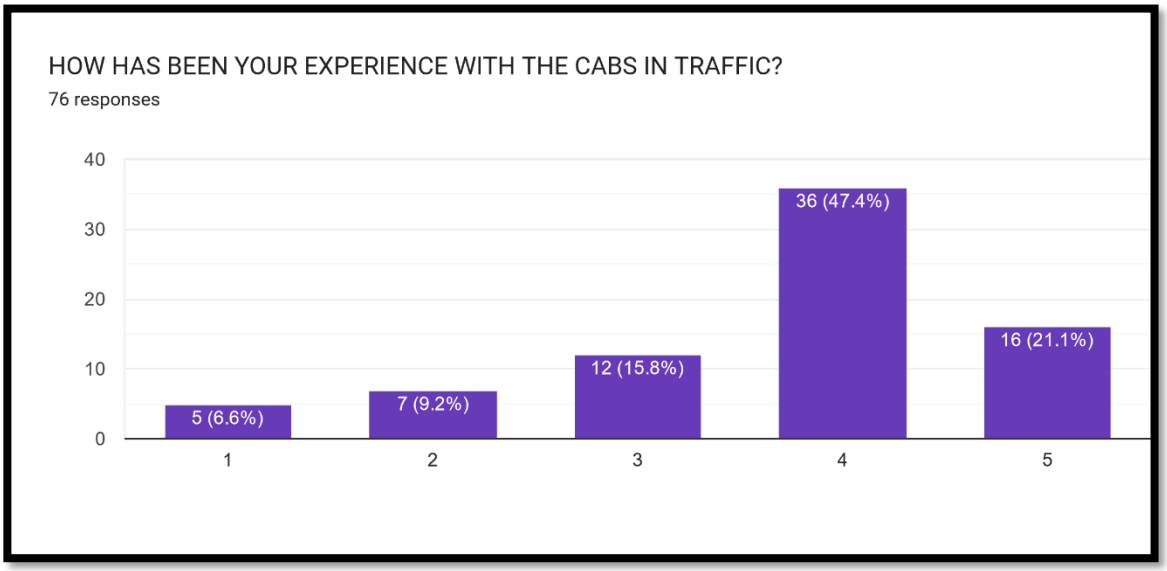


Fig 7 (Source: Own Analysis)

The above graph depicts the satisfaction level of people for cabs. 1 depicts least satisfied i.e., 6.6 %and 5 depicts highly satisfied i.e., 21.1 % people.

**Chart No.8- Type of Transportation More Suited for Metropolitan City**

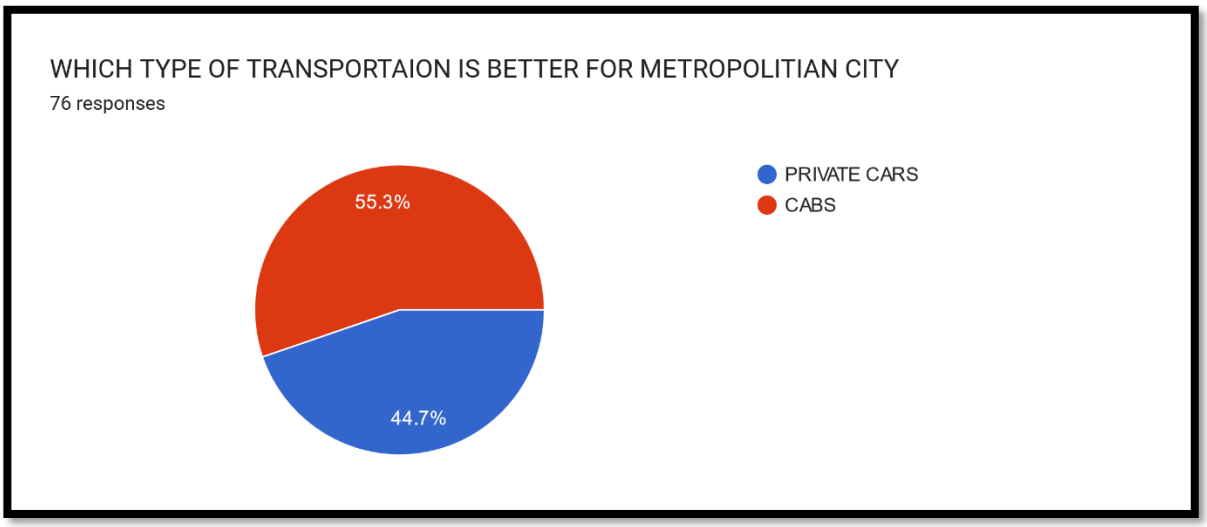


Fig 8 (Source: Own Analysis)

The above chart depicts the system of transportation people find more effective i.e., private cars orcabs. Out of 76 respondent's 44.7% percent people prefer private cars and 55.3% people prefer cabs.

**Chart No.9- Type of Transportation Which Is More Preferred**

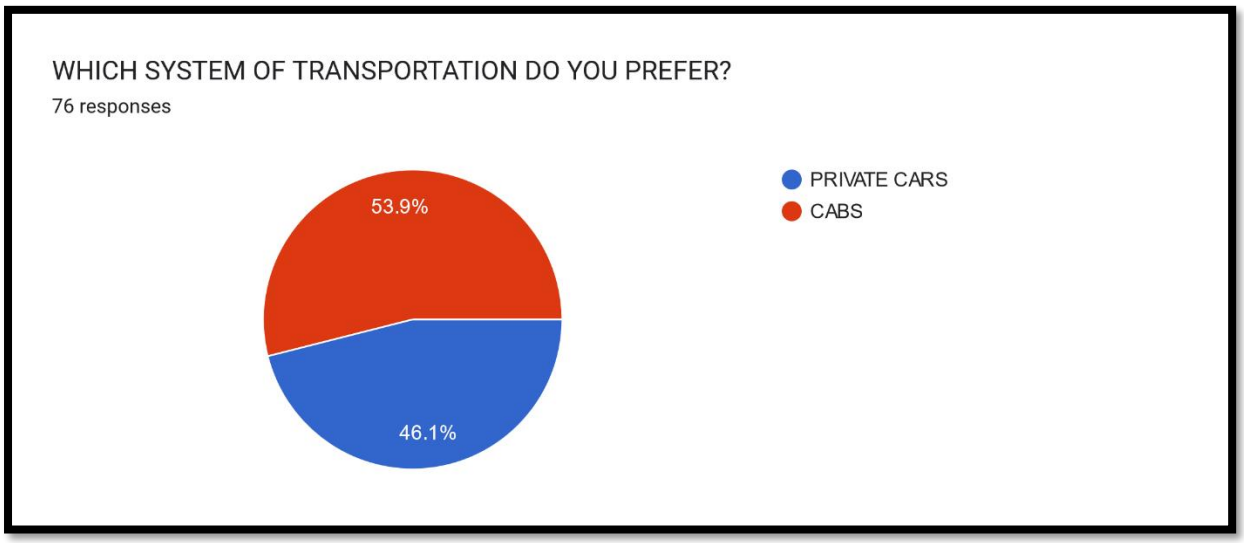


Fig 9 (Source: Own Analysis)

The above chart depicts the system of transportation people prefer i.e., private cars or cabs. Out of76 respondent's 46.1% percent people prefer private cars and 53.9% people prefer cabs.

**Customer's Preference Between the two system of transportation: -**

For understanding of customer's perception and to study whether the demographics of an individual impact their preference of transportation system between private car and cab., Chi- Square test was used keeping in mind the area of stay, age, gender, family income and profession.

To begin with the analysis and identify the relationship between customer's preference and the demographic factors, first a hypothesis had been drawn considering one demographic factor at a time and a chi – square test have been run for the same to study and interpret whether any significant relationship exists or not. The hypothesis developed, Chi- Square tests results obtained are detailed as follows:

1. Age (years) * WHICH SYSTEM OF TRANSPORTATION DO YOU PREFER?

Null Hypothesis: - No relationship exists between age and the customer's preference for transportation system.

Alternative Hypothesis: - Significant relationship exists between age and the customer's preference for transportation system.

**AGE * WHICH SYSTEM OF TRANSPORTATION DO YOU PREFER? Crosstabulation**

| | | | WHICH SYSTEM OF TRANSPORTATION DO YOU PREFER? | | |
|---|---|---|---|---|---|
| | | | PRIVATE CARS | 2 | Total |
| AGE | LESS THAN 20 | Count | 0 | 6 | 6 |
| | | Expected Count | 2.8 | 3.2 | 6.0 |
| | 20-30 YEARS | Count | 25 | 26 | 51 |
| | | Expected Count | 23.5 | 27.5 | 51.0 |
| | 30-40 YEARS | Count | 6 | 4 | 10 |
| | | Expected Count | 4.6 | 5.4 | 10.0 |
| | 40 AND ABOVE | Count | 4 | 5 | 9 |
| | | Expected Count | 4.1 | 4.9 | 9.0 |
| Total | | Count | 35 | 41 | 76 |
| | | Expected Count | 35.0 | 41.0 | 76.0 |

**Chi-Square Tests**

| | Value | df | Asymptotic Significance (2-sided) |
|---|---|---|---|
| Pearson Chi-Square | 6.095[a] | 3 | .107 |
| Likelihood Ratio | 8.377 | 3 | .039 |
| Linear-by-Linear Association | 1.303 | 1 | .254 |
| N of Valid Cases | 76 | | |

a. 5 cells (62.5%) have expected count less than 5. The minimum expected count is 2.76.

Figure10: Chi- Square Test Results

According to Figure 10. P- Value of test statistic comes out to be .107. Since, we had assumed the level of significance as 5%, and as per the general rule if the p- value is less than our chosen level of significance i.e., 5% (0.05) then we do not accept the null hypothesis. Hence, a significant relationship doesn't exist between age and the customer's preference for transportation system.

2. Gender * WHICH SYSTEM OF TRANSPORTATION DO YOU PREFER?

Null Hypothesis: - No relationship exists between gender and the the customer's preference for transportation system

Alternative Hypothesis: - Significant relationship exists between gender and the customer's preference for transportation system

**GENDER * WHICH SYSTEM OF TRANSPORTATION DO YOU PREFER? Crosstabulation**

| | | | WHICH SYSTEM OF TRANSPORTATION DO YOU PREFER? | | |
|---|---|---|---|---|---|
| | | | PRIVATE CARS | 2 | Total |
| GENDER | MALE | Count | 20 | 16 | 36 |
| | | Expected Count | 16.6 | 19.4 | 36.0 |
| | FEMALE | Count | 15 | 25 | 40 |
| | | Expected Count | 18.4 | 21.6 | 40.0 |
| Total | | Count | 35 | 41 | 76 |
| | | Expected Count | 35.0 | 41.0 | 76.0 |

**Chi-Square Tests**

| | Value | df | Asymptotic Significance (2-sided) | Exact Sig. (2-sided) | Exact Sig. (1-sided) |
|---|---|---|---|---|---|
| Pearson Chi-Square | 2.486[a] | 1 | .115 | | |
| Continuity Correction[b] | 1.813 | 1 | .178 | | |
| Likelihood Ratio | 2.498 | 1 | .114 | | |
| Fisher's Exact Test | | | | .167 | .089 |
| Linear-by-Linear Association | 2.454 | 1 | .117 | | |
| N of Valid Cases | 76 | | | | |

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 16.58.

b. Computed only for a 2x2 table

Figure11: Chi- Square Test Results

According to Figure 11. P- Value of test statistic comes out to be .115. Since, we had assumed the level of significance as 5%, and as per the general rule if the p- value is less than our chosen level of significance i.e., 5% (0.05) then we do not accept the null hypothesis. Hence, a significant relationship doesn't exist between gender and the customer's preference for transportation system.

3. Occupation * WHICH SYSTEM OF TRANSPORTATION DO YOU PREFER?

Null Hypothesis: - No relationship exists between occupation and the customer's preference for transportation system

Alternative Hypothesis: - Significant relationship exists between occupation and the customer's preference for transportation system

**OCCUPATION * WHICH SYSTEM OF TRANSPORTATION DO YOU PREFER? Crosstabulation**

| | | | WHICH SYSTEM OF TRANSPORTATION DO YOU PREFER? | | |
|---|---|---|---|---|---|
| | | | PRIVATE CARS | 2 | Total |
| OCCUPATION | Business | Count | 5 | 7 | 12 |
| | | Expected Count | 5.5 | 6.5 | 12.0 |
| | Job | Count | 9 | 10 | 19 |
| | | Expected Count | 8.8 | 10.3 | 19.0 |
| | Student | Count | 21 | 24 | 45 |
| | | Expected Count | 20.7 | 24.3 | 45.0 |
| Total | | Count | 35 | 41 | 76 |
| | | Expected Count | 35.0 | 41.0 | 76.0 |

**Chi-Square Tests**

| | Value | df | Asymptotic Significance (2-sided) |
|---|---|---|---|
| Pearson Chi-Square | .113[a] | 2 | .945 |
| Likelihood Ratio | .114 | 2 | .945 |
| Linear-by-Linear Association | .060 | 1 | .807 |
| N of Valid Cases | 76 | | |

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.53.

Figure12: Chi- Square Test Results

According to Figure 12. P- Value of test statistic comes out to be .945. Since, we had assumed the level of significance as 5%, and as per the general rule if the p- value is less than our chosen level of significance i.e., 5% (0.05) then we do not accept the null hypothesis. Hence, a significant relationship doesn't exist between occupation and the customer's preference for transportation system.

4. EDUCATIONAL QUALIFICATION * WHICH SYSTEM OF TRANSPORTATION DO YOU PREFER?

Null Hypothesis: - No relationship exists between educational qualification and the customer's preference for transportation system

Alternative Hypothesis: - Significant relationship exists between educational qualification and the customer's preference for transportation system

**EDUCATION QUALIFICATION * WHICH SYSTEM OF TRANSPORTATION DO YOU PREFER? Crosstabulation**

| | | | WHICH SYSTEM OF TRANSPORTATION DO YOU PREFER? | | |
|---|---|---|---|---|---|
| | | | PRIVATE CARS | 2 | Total |
| EDUCATION QUALIFICATION | MATRIC | Count | 1 | 6 | 7 |
| | | Expected Count | 3.2 | 3.8 | 7.0 |
| | 10+2 | Count | 2 | 5 | 7 |
| | | Expected Count | 3.2 | 3.8 | 7.0 |
| | GRADUATE | Count | 9 | 10 | 19 |
| | | Expected Count | 8.8 | 10.3 | 19.0 |
| | POST GRADUATE | Count | 23 | 20 | 43 |
| | | Expected Count | 19.8 | 23.2 | 43.0 |
| Total | | Count | 35 | 41 | 76 |
| | | Expected Count | 35.0 | 41.0 | 76.0 |

**Chi-Square Tests**

| | Value | df | Asymptotic Significance (2-sided) |
|---|---|---|---|
| Pearson Chi-Square | 4.675[a] | 3 | .197 |
| Likelihood Ratio | 5.079 | 3 | .166 |
| Linear-by-Linear Association | 4.361 | 1 | .037 |
| N of Valid Cases | 76 | | |

a. 4 cells (50.0%) have expected count less than 5. The minimum expected count is 3.22.

Figure13: Chi- Square Test Results

According to Figure 12. P- Value of test statistic comes out to be .197. Since, we had assumed the level of significance as 5%, and as per the general rule if the p- value is less than our chosen level of significance i.e., 5% (0.05) then we do not accept the null hypothesis. But the same is not adhered in this situation. Hence, a significant relationship doesn't exist between education qualification and the customer's preference for transportation system.

**Customer's Preference Between the two system of transportation in metropolitan city: -**

Further, for better understanding of customer's perception and to study whether the demographics of an individual impact their preference of transportation system between private car and cab, Chi-Square test was used again keeping in mind the area of stay, age, gender, family income and profession.

To begin with the analysis and identify the relationship between customer's preference and the demographic factors, first a hypothesis had been drawn considering one demographic factor at a time and a chi – square test have been run for the same to study and interpret whether any significant relationship exists or not. The hypothesis developed, Chi- Square tests results obtained are detailed as follows:

1. Age (years) * WHICH SYSTEM OF TRANSPORTATION DO YOU PREFER IN METROPOLITAN CITY?

Null Hypothesis: - No relationship exists between age and the customer's preference for transportation system in metropolitan city

Alternative Hypothesis: - Significant relationship exists between age and the customer's preference for transportation system in metropolitan city

**AGE * WHICH TYPE OF TRANSPORTATION IS BETTER FOR METROPOLITIAN CITY Crosstabulation**

Count

| | | WHICH TYPE OF TRANSPORTATION IS BETTER FOR METROPOLITIAN CITY | | |
|---|---|---|---|---|
| | | PRIVATE CARS | CABS | Total |
| AGE | LESS THAN 20 | 2 | 4 | 6 |
| | 20-30 YEARS | 26 | 25 | 51 |
| | 30-40 YEARS | 4 | 6 | 10 |
| | 40 AND ABOVE | 2 | 7 | 9 |
| Total | | 34 | 42 | 76 |

**Chi-Square Tests**

| | Value | df | Asymptotic Significance (2-sided) |
|---|---|---|---|
| Pearson Chi-Square | 3.056[a] | 3 | .383 |
| Likelihood Ratio | 3.200 | 3 | .362 |
| Linear-by-Linear Association | 1.291 | 1 | .256 |
| N of Valid Cases | 76 | | |

a. 5 cells (62.5%) have expected count less than 5. The minimum expected count is 2.68.

Figure14: Chi- Square Test Results

According to Figure 14. P- Value of test statistic comes out to be .383 Since, we had assumed the level of significance as 5%, and as per the general rule if the p- value is less than our chosen level of significance i.e., 5% (0.05) then we do not accept the null hypothesis. Hence, a significant relationship doesn't exist between age and the customer's preference for transportation system.

2. Gender * WHICH SYSTEM OF TRANSPORTATION DO YOU PREFER?

Null Hypothesis: - No relationship exists between gender and the customer's preference for transportation system

Alternative Hypothesis: - Significant relationship exists between gender and the customer's preference for transportation system

**GENDER * WHICH TYPE OF TRANSPORTATION IS BETTER FOR METROPOLITIAN CITY Crosstabulation**

Count

| | | WHICH TYPE OF TRANSPORTATION IS BETTER FOR METROPOLITIAN CITY | | |
|---|---|---|---|---|
| | | PRIVATE CARS | CABS | Total |
| GENDER | MALE | 18 | 18 | 36 |
| | FEMALE | 16 | 24 | 40 |
| Total | | 34 | 42 | 76 |

**Chi-Square Tests**

| | Value | df | Asymptotic Significance (2-sided) | Exact Sig. (2-sided) | Exact Sig. (1-sided) |
|---|---|---|---|---|---|
| Pearson Chi-Square | .766[a] | 1 | .381 | | |
| Continuity Correction[b] | .415 | 1 | .519 | | |
| Likelihood Ratio | .767 | 1 | .381 | | |
| Fisher's Exact Test | | | | .489 | .260 |
| Linear-by-Linear Association | .756 | 1 | .384 | | |
| N of Valid Cases | 76 | | | | |

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 16.11.

b. Computed only for a 2x2 table

Figure15: Chi- Square Test Results

According to Figure 15. P- Value of test statistic comes out to be .381. Since, we had assumed the level of significance as 5%, and as per the general rule if the p- value is less than our chosen level of significance i.e., 5% (0.05) then we do not accept the null hypothesis. Hence, a significant relationship doesn't exist between gender and the customer's preference for transportation system.

3. Occupation * WHICH SYSTEM OF TRANSPORTATION DO YOU PREFER?

Null Hypothesis: - No relationship exists between occupation and the customer's preference for transportation system

Alternative Hypothesis: - Significant relationship exists between occupation and the customer's preference for transportation system

**OCCUPATION * WHICH TYPE OF TRANSPORTATION IS BETTER FOR METROPOLITIAN CITY Crosstabulation**

Count

| | | WHICH TYPE OF TRANSPORTATION IS BETTER FOR METROPOLITIAN CITY | | |
|---|---|---|---|---|
| | | PRIVATE CARS | CABS | Total |
| OCCUPATION | Business | 5 | 7 | 12 |
| | Job | 7 | 12 | 19 |
| | Student | 22 | 23 | 45 |
| Total | | 34 | 42 | 76 |

**Chi-Square Tests**

| | Value | df | Asymptotic Significance (2-sided) |
|---|---|---|---|
| Pearson Chi-Square | .839[a] | 2 | .658 |
| Likelihood Ratio | .845 | 2 | .655 |
| Linear-by-Linear Association | .468 | 1 | .494 |
| N of Valid Cases | 76 | | |

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.37.

Figure16: Chi- Square Test Results

According to Figure 16. P- Value of test statistic comes out to be 0.658. Since, we had assumed the level of significance as 5%, and as per the general rule if the p- value is less than our chosen level of significance i.e., 5% (0.05) then we do not accept the null hypothesis. Hence, a significant relationship doesn't exist between occupation and the customer's preference for transportation system.

4. EDUCATIONAL QUALIFICATION * WHICH SYSTEM OF TRANSPORTATION DO YOU PREFER?

Null Hypothesis: - No relationship exists between educational qualification and the customer's preference for transportation system

Alternative Hypothesis: - Significant relationship exists between educational qualification and the customer's preference for transportation system

**EDUCATION QUALIFICATION * WHICH TYPE OF TRANSPORTATION IS BETTER FOR METROPOLITIAN CITY Crosstabulation**

Count

| | | WHICH TYPE OF TRANSPORTATION IS BETTER FOR METROPOLITIAN CITY | | |
|---|---|---|---|---|
| | | PRIVATE CARS | CABS | Total |
| EDUCATION QUALIFICATION | MATRIC | 1 | 6 | 7 |
| | 10+2 | 1 | 6 | 7 |
| | GRADUATE | 8 | 11 | 19 |
| | POST GRADUATE | 24 | 19 | 43 |
| Total | | 34 | 42 | 76 |

**Chi-Square Tests**

| | Value | df | Asymptotic Significance (2-sided) |
|---|---|---|---|
| Pearson Chi-Square | 7.438[a] | 3 | .049 |
| Likelihood Ratio | 8.140 | 3 | .043 |
| Linear-by-Linear Association | 6.938 | 1 | .008 |
| N of Valid Cases | 76 | | |

a. 4 cells (50.0%) have expected count less than 5. The minimum expected count is 3.13.

Figure17: Chi- Square Test Results

According to Figure 17. P- Value of test statistic comes out to be 0.049. Since, we had assumed the level of significance as 5%, and as per the general rule if the p- value is less than our chosen level of significance i.e., 5% (0.05) then we do not accept the null hypothesis. But the same is not adhered in this situation. Hence, a significant relationship exists between Education qualification and the customer's preference for transportation system.

**REGRESSION**

D1= dependent variable (overall how satisfied are you with your private car)

D2= independent variable (how satisfied are you with your private car in traffic)

**Descriptive Statistics**

| | Mean | Std. Deviation | N |
|---|---|---|---|
| D1 | 4.0789 | 1.10469 | 76 |
| D2 | 3.9605 | 1.02555 | 76 |

**Correlations**

| | | D1 | D2 |
|---|---|---|---|
| Pearson Correlation | D1 | 1.000 | .426 |
| | D2 | .426 | 1.000 |
| Sig. (1-tailed) | D1 | . | .000 |
| | D2 | .000 | . |
| N | D1 | 76 | 76 |
| | D2 | 76 | 76 |

**ANOVA[a]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 16.647 | 1 | 16.647 | 16.451 | .000[b] |
| | Residual | 74.880 | 74 | 1.012 | | |
| | Total | 91.526 | 75 | | | |

a. Dependent Variable: D1

b. Predictors: (Constant), D2

**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | | |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | t | Sig. |
| 1 | (Constant) | 2.260 | .463 | | 4.878 | .000 |
| | D2 | .459 | .113 | .426 | 4.056 | .000 |

a. Dependent Variable: D1

The results of the present study observed experience of people in traffic in their private cars (p value - 0.00, beta = 0.459) to have the influence on overall satisfaction of consumer for their private cars

H0: There is no significant relation between experience of customers in traffic in their cars and the overall satisfaction of people with their private cars.
H1: There is a significant relation between experience of customers in traffic in their cars and the overall satisfaction of people with their private cars.
Since the p value comes out to be 0.00 which is less than 0.05 i.e. $p < 0.05$, we will reject the null hypothesis and accept the alternate hypothesis that there is significant relation between of experience of customers in traffic in their cars and the overall satisfaction of people with their private cars.

**Model Summary[b]**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .426[a] | .182 | .171 | 1.00593 |

a. Predictors: (Constant), D2

b. Dependent Variable: D1

Figure 18 Regression

The R value here is 0.426 which means that the model we developed is moderate as association is significant. The greater the R value, better the association which means that there is a correlation between the dependent and independent variable. Here overall how a person is satisfied in his/her private car as a dependent variable.

D1= dependent variable (OVERALL HOW HAS BEEN YOUR EXPERIENCE WITH CABS?)

D2= independent variable (HOW HAS BEEN YOUR EXPERIENCE WITH THE CABS IN TRAFFIC?)

**Descriptive Statistics**

| | Mean | Std. Deviation | N |
|---|---|---|---|
| T1 | 4.0000 | .99331 | 76 |
| T2 | 3.6711 | 1.11221 | 76 |

**Correlations**

| | | T1 | T2 |
|---|---|---|---|
| Pearson Correlation | T1 | 1.000 | .483 |
| | T2 | .483 | 1.000 |
| Sig. (1-tailed) | T1 | . | .000 |
| | T2 | .000 | . |
| N | T1 | 76 | 76 |
| | T2 | 76 | 76 |

**ANOVA[a]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 17.246 | 1 | 17.246 | 22.486 | .000[b] |
| | Residual | 56.754 | 74 | .767 | | |
| | Total | 74.000 | 75 | | | |

a. Dependent Variable: T1

b. Predictors: (Constant), T2

**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 2.417 | .349 | | 6.935 | .000 |
| | T2 | .431 | .091 | .483 | 4.742 | .000 |

a. Dependent Variable: T1

The results of the present study observed experience of people in traffic in their private cars (p value - 0.00, beta = 0.431) to have the influence on overall satisfaction of consumer for their private cars

H0: There is no significant relation between experience of customers in traffic in cabs and the overall experience of people in cabs.

H1: There is a significant relation between experience of customers in traffic in cabs and the overall satisfaction of people in cabs.

Since the p value comes out to be 0.00 which is less than 0.05 i.e. $p < 0.05$, we will reject the null hypothesis and accept the alternate hypothesis that there is significant relation between of experience of customers in traffic in their cars and the overall satisfaction of people with their private cars.

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .483[a] | .233 | .223 | .87576 |

a. Predictors: (Constant), T2

Table 19 Regression

The R value here is 0.483 which means that the model we developed is moderate as

association is significant. The greater the R value, better the association which means that there is a correlation between the dependent and independent variable. Here overall how is a consumer's experience in cabs is a dependent variable.

# CHAPTER-5 CONCLUSIONS AND LIMITATIONS

## 5.1 CONCLUSION

When it comes to using transportation networks, people have several options and strategies. However, this study compares consumer preferences for private cars versus taxis. These two different forms of transportation aid in getting from one location to another. Therefore, we have conducted an examination of the preferences of various people with regard to the mode of transportation they choose, namely private automobiles or cabs. Therefore, by having them complete a questionnaire, we have conducted an analysis of a total of 76 people. Men and women both gave generously in the response.

All age groups have different age distributions. Business owners, students, workers, and others completed the questionnaire. Contrary to cabs, private cars are the kind of transportation that most people favor. Some people are cautiously and gradually switching from private cars to cabs. Private vehicles can sometimes provide greater satisfaction than cabs. When comparing people's preferences for private cars and cabs in specific areas, we find that people favor private cars more often than cabs for reasons of comfort, cabs more frequently in areas with heavy traffic, private cars when travelling with friends and family, and private cars when travelling to schools, offices, and offices.

After conducting data analysis using SPSS software, the study shows that using Anova as a statistical test and taking p values into consideration, the consumer’s experience in cabs and private cars in traffic have a significant impact on their overall experience in cabs and private cars respectively.

Chi square tests done in order to study a significant relationship between a variety of factors (age, gender, occupation and educational qualification) and system of transport preferred by consumer; also, chi square test was done between factors mentioned above and system of transportation preferred by consumer in metropolitan area. The test reveals that out of the mentioned factors educational qualification have a significant impact on the system of transportation preferred by consumer in metropolitan area.

We can conclude that some people prefer cabs over private cars by very marginal amount, so the answer to my third research goal will be that cab companies need to develop fresh marketing approaches to draw in new clients, offer student discounts, and lower the cost of cab bookings as a whole. Since both private vehicles and cabs are reliable forms of transportation, there should be a healthy balance of patrons in each industry; hence, cabs should draw in more patrons.

As a result of Delhi's greater population and pollution, using a private vehicle for travel would result in increased traffic and pollution, both of which contribute to mental illness. Therefore, now is the ideal time for cab companies to grow and gain new clients. All of the project's goals have been met, and analysis has been done to reach the conclusion that consumers prefer private automobiles to cabs for transportation.

## 5.2 SUGGESTIONS

● According to respondents their level of satisfaction was not at all high for cabs so, for this cabs companies like UBER/OLA should keep regular checks on the feedback which is being given by the customer, further decisions should be made according to the feedback which they receive and the pickups of the customers should be according to the scheduled timings this also improves level of satisfaction for customers.

● According to respondents, when they travel with friends, they prefer more private cars rather than cabs, for this the cabs companies can give extra discount offers to the children who are in school/colleges, as to attract more of their customers from this section of the society.

● According to respondents they found that private cars are more convenient than cabs, so for this the cabs companies should improve their cabs conditions and should choose those drivers which are more customer friendly.

● Respondents also find cabs and private cars somewhat equally attractive, so for these cabs companies can have a small screen at the back seat of the driver seat by which many customers can enjoy their favorite shows, movies while traveling. Some companies have also started adopting this type of strategy.

● The main attraction, convenience for the customers for cabs will be when their cabs are on scheduled timings and they also drop their customers at the correct drop off area, this would increase the number of customers for cab companies and thus the usage of cabs can be increased.

## 5.3LIMITATIONS

The present study on customer's attitude and perception to use digital rupee in Delhi NCR has several limitations that should be taken into account when evaluating the findings. The research was conducted over a restricted period of time, which could have hindered the ability to gather a more varied sample or to employ more advanced measures. If the data collection period had been extended, the investigation may have been more comprehensive, enabling a better examination.

The present study included 76 respondents, which was deemed to be an adequate sample size for the purposes of the study. However, it is possible that due to the limited number of participants, the results of the study may not be representative of the population of respondents in the Delhi NCR region. If a larger sample size had been employed, a more reliable and accurate analysis for consumer’s preference towards private cars or cabs.

Concludingly, the present study offers valuable insight into the factors that contribute to consumer preference towards private cars or cabs in Delhi NCR. However, certain imitations of the study should be taken into consideration while interpreting the results.
These limitations include the small sample size and narrow study area, as well as the lack of data. Future research should aim to expand the scope of the study to include larger sample sizes and additional areas, as well as explore customer preferences in detail. Doing so would provide a more comprehensive understanding of consumer’s preference towards private cars or cabs.

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# ANNEXURE

## SURVEY FORM FOR THE CONSUMER PREFERENCE TOWARDS PRIVATE CARS OR CABS

A comprehensive study on consumers preferring cabs or private cars.

* Indicates required question

1. AGE *

*Mark only one oval.*

- ◯ LESS THAN 20
- ◯ 20-30 YEARS
- ◯ 30-40 YEARS
- ◯ 40 AND ABOVE

2. GENDER *

*Mark only one oval.*

- ◯ MALE
- ◯ FEMALE
- ◯ OTHER

3. OCCUPATION *

*Mark only one oval.*

- ◯ BUSINESS
- ◯ JOB
- ◯ STUDENT
- ◯ Other: _____

4. EDUCATION QUALIFICATION *

*Mark only one oval.*

- ◯ MATRIC
- ◯ 10+2
- ◯ GRADUATE
- ◯ POST- GRADUATE

5. PREFERANCE OF PRIVATE CARS AND CABS IN SELECTIVE AREAS *

*Tick all that apply.*

| | CABS | PRIVATE CARS |
|---|---|---|
| **COMFORT** | ☐ | ☐ |
| **HIGH TRAFFIC** | ☐ | ☐ |
| **FAMILY** | ☐ | ☐ |
| **FRIENDS** | ☐ | ☐ |
| **COLLEGE/ SCHOOL/ OFFICE** | ☐ | ☐ |
| **EXPENSES** | ☐ | ☐ |

6. OVERALL HOW STATISFIED ARE YOU WITH YOUR PRIVATE CAR? *

*Mark only one oval.*

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| NOT | ◯ | ◯ | ◯ | ◯ | ◯ | SATISFIED |

7. OVERALL HOW HAS BEEN YOUR EXPERIENCE WITH CABS? *

*Mark only one oval.*

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| NOT | ◯ | ◯ | ◯ | ◯ | ◯ | HAPPY |

8. HOW HAS BEEN YOUR EXPERIENCE WITH THE CABS IN TRAFFIC? *

*Mark only one oval.*

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| NOT | ◯ | ◯ | ◯ | ◯ | ◯ | HAPPY |

9. WHICH TYPE OF TRANSPORTAION IS BETTER FOR METROPOLITIAN CITY *

*Mark only one oval.*

- ◯ PRIVATE CARS
- ◯ CABS

10. WHICH SYSTEM OF TRANSPORTATION DO YOU PREFER? *

*Mark only one oval.*

- ◯ PRIVATE CARS
- ◯ CABS

11. HOW STATISFIED ARE YOU WITH YOUR PRIVATE CAR IN TRAFFIC? *

*Mark only one oval.*

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| NOT | ◯ | ◯ | ◯ | ◯ | ◯ | SATISFIED |

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