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EFFECT OF OLA AND UBER TRANSPORTATION ON TRAFFIC CONGESTION NEAR VIRAR RAILWAY STATION

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Abstract:

This study examines how traffic congestion near Virar Railway Station is affected by ride-hailing services like Ola and Uber. Despite providing convenience and better last-mile connectivity, these platforms' operations frequently exacerbate traffic, lead to unlawful parking and raise environmental issues. This study determines the advantages and disadvantages of gig economy transportation services through questionnaires, data analysis, and observations. It is suggested that policies be changed, infrastructure be improved and ride-hailing services be better regulated in order to reduce traffic.

Keywords: *Traffic Congestion, Ola and Uber gig workers, Ride - Hailing, Last-Mile Connectivity, Urban-Transport, Transport Management, Public Transport Integration, Congestion Mitigation.*

Introduction:

Urban mobility has been transformed by the rise of digital platforms, which provide quick and reasonably priced ride-hailing services. By offering a variety of transportation options, Ola and Uber, two prominent companies in the Indian market, have been vying for a sizable portion of the market. This study looks at these businesses' competitive strategies, customer experiences, service offerings, and operational structures. This study offers insights into customer preferences and business performance in the ride-hailing industry by comprehending these elements.

A major problem in the Mumbai Metropolitan Region (MMR) suburb of Virar is the heavy traffic near its train station. The popularity of ride-hailing services like Ola and Uber has changed commuter preferences, which has led to an increase in the number of cars on the road. The region's traffic problems have gotten worse as a result of this change, underscoring the intricate connection between the development of digital platforms and urban mobility dynamics.

In order to investigate the effects of ride-hailing services on consumer behavior and urban congestion, this study will combine an investigation of these platforms' operations with the particular context of Virar's traffic issue.

Literature review:

Raja, N. K., and P. S. Bhargavi (2011). The authors cite a number of factors, such as the rise in the number of automobiles on the road, the accessibility of affordable vehicles, the migration of people from rural to urban areas, poor road infrastructure, etc., as causes of traffic congestion.

Gope, K., Chowdhury, S. M. R., and Mahmud, K (2012). The author pointed out that rickshaws, inadequate traffic signaling systems, a lack of personnel, narrow road spaces, drivers' inclination to pass, infractions of traffic laws, a lack of city road design, and other issues were all identified through

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group discussions as contributing to traffic congestion. According to the author's evidence, traffic congestion causes people to spend about 55% of their daily time stuck in traffic, which lowers the quality of the ambient air.

Abdullah, M. N., and R. Shamsher (2013). The primary causes of traffic congestion, according to the authors, are a rise in automobiles, a lack of adequate traffic enforcement, constrained highways, and illegal parking. Clear bus services, strict lane management, restricting rickshaw routes, imposing penalties against lawbreakers, setting up bus stations, widening highways, franchising bus routes, parking limits, congestion pricing, and other measures were suggested as solutions to traffic congestion.

Banu, A. B., and Vidya, K. (2014). Encroachment by pavement dwellers, street vendors, illegal parking on roads, improper construction of road dividers between two lanes, unscientific construction of speed breakers, lack of planning of city roads, lack of road spaces, unplanned stoppage and parking, etc. are the main causes of traffic congestion, according to the author.

G.A.Kulkarni (2022) Anlysis of traffic congestion at CBS proximity Kolhapur: traffic congestion, traffic management, environment impact as a reference for further analiysis in the context of traffic congestion near virar railway station.

Objectives:

1. Determine how much traffic the Ola and Uber services are causing close to Virar Station.
2. Determine the advantages and disadvantages for the environment, transportation infrastructure, and passengers.
3. Offer workable ways to lessen traffic problems.

Hypothesis:

(H1): Virar Railway Station traffic congestion is largely caused by ride-hailing services like Ola and Uber.

(H0): The traffic congestion outside Virar Railway Station is not substantially exacerbated by ride-hailing services like Ola and Uber.

(H1): Commuters benefit from enhanced last-mile connection and convenience thanks to ride-hailing services.

(H0): Commuters last-mile connectivity and convenience are not appreciably enhanced by ride-hailing services.

(H1): More air pollution and vehicle emissions result from the presence of Ola and Uber close to Virar Station.

(H0): Air pollution and vehicle emissions do not significantly rise as a result of Ola and Uber's existence.

Data Collection Method for Research Methodology:

1. **PrimaryData:**
   300 people participated in the surveys, which included drivers, commuters, and local business owners.
   traffic flow observations during peak hours on-site.
2. **Secondary data.**
   Transport reports, municipal data, and traffic management studies.

Sampling Method:

Random sampling of users and drivers in the vicinity of Virar Station.

Analysis Method:

Use of pie charts and bar graphs to represent data.

Comparative analysis to evaluate the impact of ride-hailing services.

Data Collection

Survey Questions:

- How often do you use Ola/Uber near Virar Station?
- Do you think ride-hailing services contribute to traffic congestion?
- What alternative transport modes do you use?
- Would you support dedicated pick-up and drop-off points for Ola/Uber?

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Observation Data:

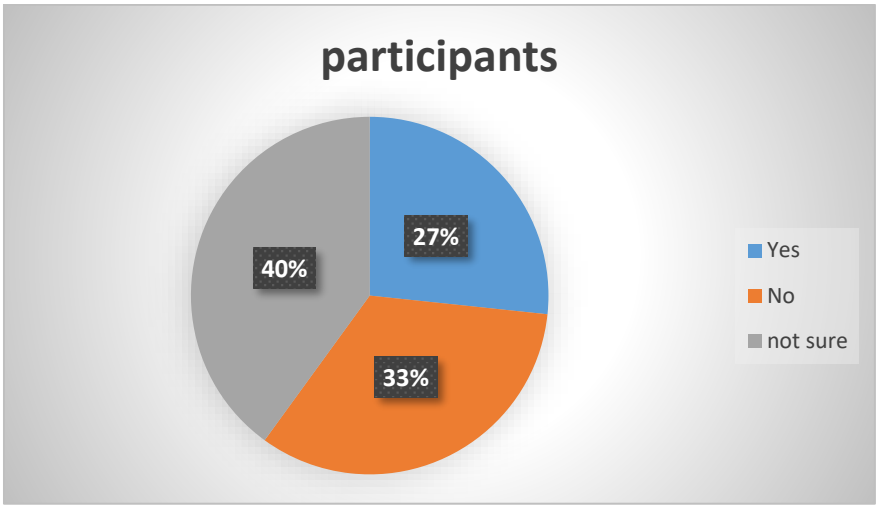
- Peak congestion times.
- Number of ride-hailing vehicles.
- Instances of illegal parking and vehicle clustering.

1.Support for Solutions

Do you think ola and uber contribute to traffic congestion near virar station?

Responses from 300 participants:

Answer	participants	%
Yes	80	26.67%
No	100	33.33%
not sure	120	40%



Traffic Congestion

In the pie chart:

27% of the chart will coloured

for Yes

33% for No

40% for Not sure

Analysis:

A significant 27% of respondents believe that Ola/Uber contribute to traffic congestion.

33% disagree, suggesting they don't see it as a major issue.

40% are uncertain.

Conclusion:

The survey's findings show that a sizable percentage of participants (40%) are unclear about how Ola and Uber contribute to traffic jams. 33.33% of respondents disagree that these services exacerbate traffic, although a significant 26.67% do not. This implies that opinions on the subject are not entirely in agreement. To truly understand how ride-hailing services affect traffic congestion around Virar station, more research or data analysis could be required.

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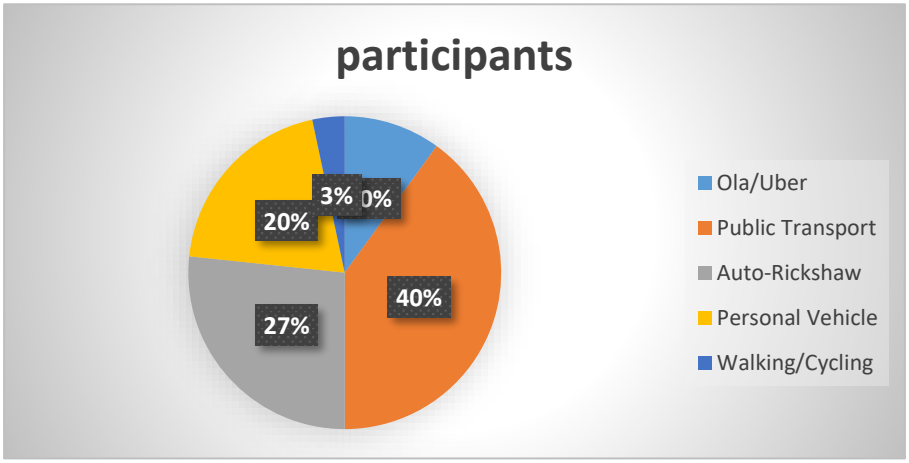
2. Mode of Transport Used

What is your primary mode of transport near Virar Station?

transport mode	participants	%
Ola/Uber	30	10%
Public Transport	120	40%
Auto-Rickshaw	80	26.67%
Personal Vehicle	60	20%
Walking/Cycling	10	3.33%



Analysis:

40% of respondents rely on public transport, making it the most used mode.

30% use Ola/Uber, contributing to significant traffic congestion.

Rickshaws account for 26.67% of traffic.

Only a small portion use private vehicles (20%) and walking/cycling (3.33%).

Conclusion:

Auto rickshaws and private vehicles are also important, although public transportation is still the most common way to get about Virar station. Although ride-hailing services are available, they are not widely used. Improving pedestrian infrastructure, supporting non-motorized transportation, and promoting better last-mile connection could all contribute to a reduction in traffic and an improvement in local mobility.

This pie chart will clearly show which transport mode is preferred, with Public Transport dominating in this case.

3.Causes of Traffic Congestion

What do you think are the main causes of congestion?

Causes	participant
Illegal Parking	95
Gig Transport Vehicles	35
Poor Traffic Management	70
Street Vendors	100

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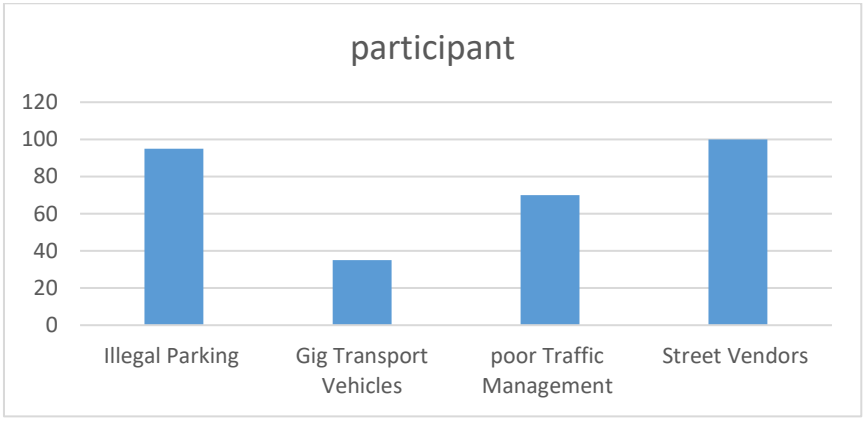


Stacked Bar Chart Insights:

The majority of individuals believe that Street vendors are the main source of traffic because they obstruct sidewalks and roadways (100 persons).

95 respondents reported that Illegal parking impedes traffic by blocking lanes, which makes it more difficult for automobiles to proceed.

70 % believe that Poor traffic management or traffic lights also slow down traffic and create traffic congestion.

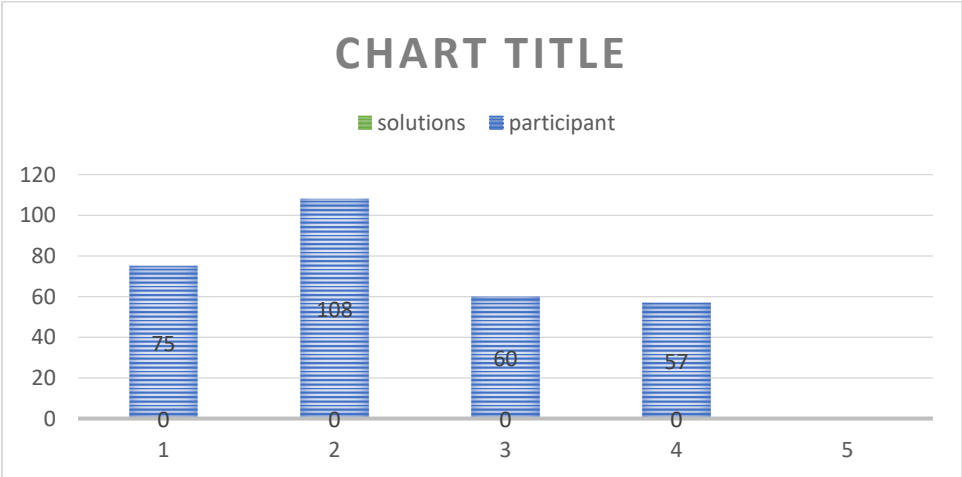
35-person gig transport vehicles: Although fewer people believe that delivery or ride-sharing vehicles are the source of traffic, they can occasionally obstruct roads.

Therefore, the main causes of traffic congestion are Illegal parking and Street vendors, followed by inadequate traffic control. There is less of an impact from gig automobiles.

4. Preference for Congestion Solutions

Which of the following solutions do you support to reduce congestion?

solutions	participant
Road Widening	75
Improved Public Transport	108
Parking Regulation	60
Gig Pick-up/Drop-off Zones	57



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Stacked Bar Chart Representation:

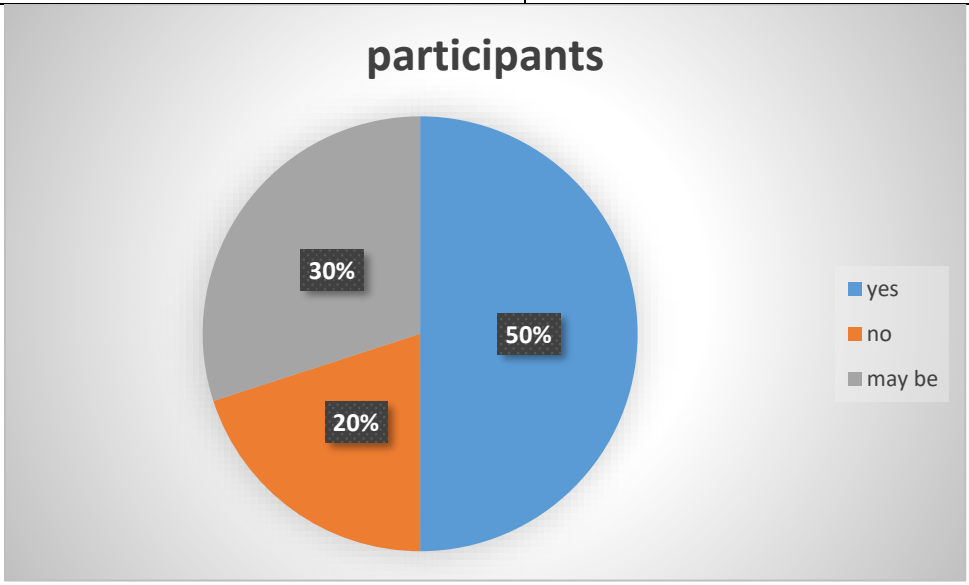
The **stacked bar chart** would visually show these solutions in stacked segments, where each solution's length corresponds to the number of participants who support it. The chart would look something like this:

With 108 supporters, improved public transportation is the most widely accepted proposal. Support for road widening is modest (75 persons).

The least supported areas are those for parking regulations and gig pick-up/drop-off zones (60 and 57, respectively). In order to lessen traffic, they primarily want improved public transportation.

At last do you think that OLA and UBER cabs safe reliable and cheaper modes of transportation?

Answer	participants
Yes	150
No	60
May be	90



Cabs : According to the study, 50% of respondents said that cabs are safe, dependable, and less expensive since they allow for sharing, which makes them feel less expensive. Another 30% said that they might be, and 20% said that they are not.

Comparative study of OLA and UBER

OLA	UBER
Business Model and Service Offerings Provides a variety of services, such as Ola Bike, Ola Auto, Ola Mini, and Ola Prime. It also prioritizes growing its fleet of electric vehicles and offers Ola Share for carpooling.	Offers UberGo, UberX, UberXL, and Uber Auto, among other services. In addition, Uber has launched sustainable transportation solutions in a few cities and provides Uber Pool for group rides.
Pricing Strategy To draw riders, it frequently gives discounts and uses dynamic pricing based on demand.	Generally keeps prices constant throughout cities, but also employs surge pricing during peak hours.
Market Presence and Brand Perception More cars and motorcycles, particularly in surrounding suburbs like Virar.	Focusing on high-end rides and having a stronger worldwide brand recognition.

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Impact on Traffic Congestion Uber and Ola both add to traffic during rush hour, particularly in the vicinity of transportation hubs without specified areas for pickup and drop-off.	Uber and Ola both add to traffic during rush hour, particularly in the vicinity of transportation hubs without specified areas for pickup and drop-off.
Driver and Customer Satisfaction Varying incentives for drivers yet flexible earning options.	Safe features and cutting-edge technology, but drivers occasionally report reduced pay.
Environmental Impact Uses Ola Electric to promote EVs.	Offers Uber Green and works with EV manufacturers.

Comparison:

In addition to being more affordable for short trips, especially in suburban areas like Virar, Ola is more prevalent in tier 2 and tier 3 cities. Additionally, it offers immediate regional benefits through its specialized EV programs. Uber, on the other hand, dominates upscale urban markets, providing affordable long-distance transportation and performing exceptionally well during business and airport commutes. Vehicle clustering is still a problem even though ride-sharing services like Ola Share and Uber Pool help reduce traffic. Furthermore, Uber is frequently chosen in metropolitan areas due to its dependability and safety, and its worldwide environmental initiatives offer longer-term advantages.

Conclusion:

Although Ola and Uber greatly improve commuter connectivity, the study shows that their unchecked presence increases traffic around Virar Railway Station. The drawbacks could exceed the advantages if proper management is not implemented.

Suggestions:

Provide specific areas where ride-hailing services can be picked up and dropped off.

Encourage people to use services like Ola Share and Uber Pool for carpooling.

Implement more stringent guidelines for parking close to the station and driving conduct.

Construct multimodal transportation hubs that combine railroads, rickshaws, and buses.

Put in place AI-powered traffic control technologies to anticipate and lessen congestion.

Recommendations:

Concerning Local Governments: Establish rules to control ride-hailing services.

Increased monitoring will help stop illegal parking.

Regarding Ride- Hailing Firms: Improve traffic discipline by offering driver training sessions.

Reduce the number of trips in empty cars by providing incentives for ride-sharing.

Commuters: Promote ride-sharing in order to reduce the number of vehicles.

When it is possible, take public transportation for short journeys.

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