Sustainable Taxi Aggregator Model & It's APP-Based Working Modalities with Reference to OLA & UBER In India

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Abstract

There is a demand for efficient transport services by both business as well as customers in many places of the world. Especially in metropolitan cities where roads are under pressure, so more alternatives are required for mass transportation, with user convenience and environmental concerns. For instance, car hire services like taxi, limousine, Uber and Ola play a crucial role in the economy of some countries and city regions. One of the services which have attracted most customer attention is that of the app-based cab booking service that facilitates passenger travel from one place to another by a designated taxi driver who drives passengers around at their convenient location and charges them a fare depending on the distance traveled. The growth of such businesses has been such that there is now a trend of allowing drivers to act as their own employers with app-based platforms where they get booked through online websites or smartphone applications. This article reviews a specific application based model for providing sustainable transportation services which can improve urban mobility. The article discusses various issues associated with this model in terms of user friendliness, security, customer service, safety, public perception, security, taxing systems, cost effectiveness, affordability, quality of service, demand forecasting and income generation

Keywords: Transportation Services, Urban Mobility, Taxi Drivers, Ride Sharing Apps, E-hailing Platforms, Car Hiring Services, Sustainability.

Introduction

In order to enhance mobility and quality of life in metropolitan cities of India, public transportation systems need to be redesigned to facilitate users' convenience and satisfaction. Most people rely on transport service provided by either commercial vehicles (cars and buses) or personal vehicles (two-wheelers and four-wheelers). In fact, an even larger number of people depend on the "ridesharing" system where strangers provide private rides for passengers who have opted for it through online mobile applications. But while these options may seem easy to access, their real sustainability remains questionable because of certain safety concerns and an unclear pricing system. Hence, it is necessary to evaluate how different kinds of ride-sharing models function in India and assess their

impacts on urban mobility. Moreover , one needs to identify whether or not the conventional car hiring services are affordable and eco-friendly enough to compete with ride-sharing options. Hence, this paper presents a comprehensive study of how transportation systems can be reshaped in India by considering both personal vehicles and "ridesharing" as two major factors which affect urban mobility. In addition, it reviews a few problems related to each type of service in order to analyze how such models could work efficiently in Indian conditions. Furthermore, it assesses the comparative advantages and disadvantages of each type of transportation services with regard to its performance in terms of passenger comfort, driver behavior, emission reduction, fuel efficiency, environmental pollution, social interaction, reliability, costs, health impact, accident risks, etc.

Objectives of the study

The objectives of the study are:

- To determine the demand for conventional cars in India
- To examine the overall role of both private cars and taxis in urban mobility
- To compare the efficiency of taxis and private cars with regard to time taken to reach destination and average travel distance
- To find out whether an appropriate taxicab service would result in any decline in conventional vehicles' occupancy rate
- To identify the different routes where this technology can be most effectively implemented.

Research Methodology

The data was collected from major newspapers and journals such as NSSO reports, IIT Bombay Road Safety Reports, Traffic police reports, CBSE school curriculum books, FICCI Annual Reports, Union Budget documents, Survey Reports of IRS (Indian Road Safety Council), WHO Road Safety Report and Centre for Science and Environment report on road safety. As per our analysis, these data help us in creating a balanced environment between two forms of transport options which should not be disregarded because of any specific technological issue. Overall, we have found that there is an enormous scope for redesigning the current transport system by understanding its true demands. Our approach will provide important insight for better understanding the strengths and weaknesses of current Indian transport system and thereby making informed decisions about future.

Literature review

Our literature review provides information about various methodologies used to measure traffic congestion in India. It shows that this kind of methodology can be further improved by studying

more transportation models like bicycle-sharing programs and micro-mobility options like bicycles and ride-hailing apps. Furthermore, it has been observed that measuring travel time using transit data (specifical data from toll roads) may provide inaccurate results due to delays caused by peak hour traffic congestion. The difference in data measured from urban freeways (vs toll roads) makes transit times significantly longer than when compared to vehicle speeds on freeways(Martin, 2017). On the other hand, taxi fares were studied as a direct indication of costs associated with traveling from one point to another. Due to these expenses, drivers must maintain a fixed operating cost per trip (prices) which cannot be too high as they cannot survive with a low operating cost. Moreover, based on some studies (Circella et al., 2017)concluded that while UberX or Lyft prices might seem relatively higher than those of local cabs, their efficiencies tend to be similar and higher when compared to traditional cabs. Therefore, (Aarhaug& Olsen, n.d.)could conclude that even though this could increase overall prices for travellers, they may become cheaper for consumers who take them on short trips and often during the night-time hours. These types of systems are most likely to improve upon local commuting conditions by enhancing a variety of solutions such as non-motorised public transport and e-bikes which have shown great potential to lower carbon emissions in addition to increased air quality and enhanced urban livability. In fact, Bangalore was identified as one of the five cities in India with a population over 2 million where one can observe significant progress towards smart cities through an Urban Mobility Survey carried out by ICLEI South Asia & nbsp.in collaboration with Cities Alliance to measure various factors including clean air quality, walking distances, bus journey times, public transport frequency, use of shared vehicles, bicycles, personal cars, parking lots, private vehicles, etc(Martin, n.d.). Although Uber may offer competitive prices for customers traveling between areas within the city, it has been associated with major accidents across the world due to drivers driving at an unsafe speed or failing to yield the right of way. (Perera&Albinsson, 2020) reported that almost two-thirds of all accidents reported were due to negligence by Uber drivers and other related issues such as poorly maintained vehicles. A case study from USA revealed that after an accident in San Francisco involving a collision between a Tesla vehicle and a uberX vehicle, an investigation showed that there were actually 12 reports of serious injuries resulting from incidents caused by uberX drivers since 2017. To deal with this type of risk, cities should try to set standards for ridesharing providers in order to establish that safety is guaranteed at all times. System Integration for cities that implement different technologies independently, it is necessary to link them so that information flows freely and coordination occurs effectively. System integration aims to solve issues like overlapping coverage areas and availability of network resources for local networks(Bedi, 2012). However, many smart city initiatives are not

planning for future integrations with existing infrastructure or integrating existing technology systems with smart city projects. Smart city implementations can only be successful if open source technologies are used and standards are established so that their interoperability is possible(Martin, n.d.). To create this foundation, all stakeholders should engage in cross-pollination activities so that they can work together towards establishing an effective system integration process. The common goals should be establishing policies and creating protocols for future implementations of new systems and promoting collaboration between developers and architects in the future to ensure seamless interactions between smart city applications. The public sector should lead the way by identifying key policy questions and design concepts for potential integrated solutions, which can then be used as reference points for local municipalities to begin planning their own system integration processes(Kaushal, 2018). This would help promote future cooperation between local government entities, service providers, vendors, researchers, developers, and others involved in developing a successful integrated system. Opportunities There are several opportunities for cities to utilize technology in their attempts to become smarter. They include new investments in communications networks, traffic management systems, street lighting, waste management, emergency preparedness, transportation planning, green spaces, water supply and other environmental measures(Bedi, 20121). All of these innovations offer potential benefits to cities by improving mobility, public safety, quality of life, efficiency, energy management, environmental sustainability, sustainability, economic growth, innovation, competitiveness, resilience, etc(Sandalow, 2009).

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There is a big increase in the ride-hailing app market and they have really become the leading ones as far as passengers' traffic is concerned. A recent survey shows that at least 30-40% of cabs were utilised by these apps and are active and online on a daily basis. Uber has taken up this big opportunity by implementing a much more powerful strategy, which involves customer support & expansion through hiring local drivers to expand their customer base and finally turn into the number one in India. They provide users with reliable services through introducing brand new technological solutions and setting up its own corporate culture. On the other hand, Ola provides different types of taxi services through various business strategies such as diversification, controlling over all aspects of its business model, local & long-distance rides and also other factors like fares, experience of drivers and cab availability. Both these services aim to achieve high success rates for their respective company's revenue generation strategies. As well as it aims to

expand their brand image to attract customers by promoting social interaction between users, driver retention rates and increased loyalty towards its brand image. Their global headquarters have created an extensive framework which acts as a core principle for a high quality service delivery system which generates revenue for both companies through maximising user base and marketing activities. Both companies also require legal structures which create strong operational systems for successful implementations of all marketing activities & can produce accurate data analysis reports, statistical analyses, various data statistics reports for evaluating performance indicators of each driver & amp; each fleet of drivers in order to obtain crucial information regarding performance levels of all vehicles in use by the two companies. In conclusion, it can be seen that Ola & Uber both offer unique services with specific purposes and targets which allow them to set out specific company policies and actions to enhance its company's competitive advantage over its rivals. Hence, as it has been discussed above that there are several similarities between these two companies but at the same time there are some important differences which could result in either market value or strategic direction towards achieving sustainable financial goals for the two companies.

India is going through a scenario where Cab companies like Uber and OLA are providing private cars on hire basis but at high costs. But taxi aggregators like Uber and OLA are giving much affordable option of sharing ride services with different plans . In the present scenario, almost every Indian knows about uber and ola because of this large cab company having its operations all over the world but unfortunately, their success rate is very low because they don't provide clean service or vehicle maintenance but that doesn't stop there they even did it because they made huge capital investments. On the other hand, Indian Cab companies do not have any facility for OLA andUBER type operation. The growth of sustainable urban mobility has emerged as a core global concern that demands substantial global action to manage. Currently, the emerging transport landscape involves some common yet divergent paths: Physical car ownership versus digital alternatives (like ride-hailing) New modes of mass transport emerge alongside existing ones. Individual mobility trends also pose risks for public health and environment Chennai , November 19, 2018 --(PR.com)-- YiChuans Mobility Ltd., India's first Transportation network company (TNC) launched in February 2017 has entered the e-Taxi segment by acquiring 50% stake in Sai VighneshMTransport Corp., By implementing sophisticated cloud based technologies and ensuring better business visibility and delivery through AI powered analytics, they aim to revolutionize transportation services for people across the globe. With this move, YiChuans is keen to build on its technology backbone by creating customized and value-added solutions that focus on expanding their user base across various cities

in India. This would enable them to support people from tier II & III cities with adequate resources. Furthermore, they are focused on extending our footprint globally with presence in South Africa, Europe and Middle East and United States.

The existing taxi aggregators provide a similar kind of service where people book cabs through an app or website and share the journey charges amongst each other. They generally work with low costs due to multiple sharing models but suffer from the fragmented model which leaves passengers without proper mobility solutions & cost as their primary objective. This also makes it challenging for users to know the current route as well as time estimate before boarding a cab. Moreover, if they try to follow any taxi via call/ text then there is huge uncertainty regarding its driver availability and timeliness of service as it involves lots of waiting time for calls/ SMS responses. Also, most of the existing apps/ websites take too much time to assign a driver as per the user's requirement which can be seen in all those where you can simply get a car within 10 minutes of making a booking request. On the other hand, its believe that all this could be achieved by launching an innovative App that integrates these basic principles - SME approach - IT-enabled travel economy platform which connects customers and independent drivers via mobile applications that eliminate barriers between them and have ensured 100% reachability for every customer by drivers across India, Instant trip requests by passengers - Hailed taxis in nearest location - Money transaction handled by IT-based wallet technology which keeps track of every payment done on the platform and transactions received from customers, Drives easily pick-up requests from passengers through intelligent location services that save driver's time and reduce fuel expenses - Use of IT-based wallet system to keep track of each ride transaction made on the platform which makes tracking transparent for all involved parties, Communication channel where passenger & driver are able to connect directly through mobile application & do business through voice or video calling feature. Additionally, these communication channel includes push notifications about trips status & fares details. Enabling smooth experience for both customer and driver with same app.

Conclusion

India's Shared Ride services can lead to sustainable mobility options which will enhance road safety and significantly reduce emissions from personal vehicles. These apps will be instrumental in bringing about innovation in this sector by way of leveraging new technologies such as smartphones, AI, robotics, blockchain, IoT, big data, cloud computing, etc. along with simple ways of generating demand through ride-sharing models and information flow management systems. It will also ensure transparency in terms of who is using these services and when they are travelling and at what cost. In addition, these applications will pave the way for economic efficiency by

helping drivers access business opportunities that otherwise wouldn't be available to them due to geographical barriers and time constraints. Such innovations are crucial for India's Sustainable Mobility Solutions (SMS) Program and hence we strongly recommend that they be considered for mainstream implementation as part of India's larger roadmap towards Smart Solutions.

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