Does India Need a Shared Ride-Hailing Now More than Ever? Understanding Commuter's Intentions to Share Rides

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ABSTRACT

Manuscript type: Research paper
Research aims: This study aims to investigate the factors influencing shared ride-hailing services, amongst commuters in India.
Design/Methodology/Approach: Data collected across 355 respondents were analysed using structural equation modelling (SEM).
Research findings: The findings reveal that all the four factors, i.e., the perceived use, perceived ease of use, trust and perceived risk, significantly influence commuter's intentions to use shared ride-hailing service. Gender is found to moderate the relationship between perceived use, and the intention to use, as well as perceived risk and intention to use. This study however, does not find any empirical evidence to establish the moderation impact of car ownership on the relationship between perceived risk and the intention to use.
Theoretical contribution/Originality: This study expands the previous literature by incorporating trust and perceived risk in examining the intention to use shared ride-hailing services. It also supplements previous works by examining gender and car ownership as the moderating variable.
Practitioner/Policy implication: The findings suggest that marketers need to focus on strategies to reduce the risks associated with using shared ride-hailing services, especially amongst women riders.

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https://doi.org/10.22452/ajba.vol13no2.10

Research limitation/Implications: The study only focusses on shared ride-hailing service in the Indian context, specifically in New Delhi.

Keywords: Shared ride-hailing, Technology Acceptance Model (TAM), Trust, Perceived Risk, Commuters' Intention
JEL Classification: M31

1. Introduction

Roads in India are the dominant mode of transportation, which accounts for approximately 90 per cent of the country's passenger traffic, and 64 per cent of the freight traffic (IBEF, 2019). To strengthen the road transport in the country, the government intends to build 10,000 km of the national highway road in the year 2019-2020 (IBEF, 2019). In India, it was reported that four of its megacities, i.e. Delhi, Mumbai, Bengaluru and Kolkata are losing up to $22 billion annually because of traffic congestion (Tandon, 2018). This alarming phenomenon has not only led to productivity losses, but also resulted in negative environmental problems, such as an increase in the carbon footprint and air pollution. Hence, to entangle the current situation, the Indian Prime Minister stressed on the potential use of innovative transportation modes, such as shared ride-hailing services to meet the demands and supply of travel needs of commuters, while similarly optimising the available resources (Clewlow & Mishra, 2017).

Although an ample amount of research is readily available for ride-hailing services (e.g. Wang, Gu, Wang, & Wang, 2019; Young & Farber, 2019; Wang, Wang, Wang, Wei, & Wang, 2020; Alemi, Circella, Handy, & Mokhtarian, 2018), studies focussed on the commuter's intentions to use shared ride-hailing services are lacking. In shared ride-hailing services, there are/can be multiple users paired with a driver, while in ride-hailing services, a single user is paired with a driver. Moreover, shared ride-hailing offers additional discounts to the riders for agreeing to the vehicle sharing policies (Pratt, Morris, Zhou, Khan, & Chowdhury, 2019). Furthermore, shared ride-hailing services are different from traditional ride-hailing. The former matches riders (strangers) in real-time using smartphone applications with similar origins and destinations (Shaheen & Cohen, 2019). In the traditional form of ride-sharing, people either use shared vehicles with their acquaintances, or those working in the same organisation (Shaheen & Cohen, 2019). Moreover, there is no real-time system to match the riders

in a traditional carpooling setting. Furthermore, shared ride-hailing is acknowledged as much more economical than ride-hailing, since the cost of the trip is split among the riders (Chen, Zheng, Wang & Chen, 2018), and potentially impacts the car ownership, since it fills the gap between a private taxi and public transport. Brown (2017) and Shaheen and Cohen (2007) reported that people have started forgoing car ownership and utilising the available resources instead for buying a new form of automobility, such as ride-hailing or ridesourcing. Brown (2017) asserted that young Americans are embracing a car-free lifestyle to achieve sustainability and congestion relief goals by shifting to new forms of mobilities. However, in spite of certain benefits which are associated with the uncertainties and risks involved in shared ride-hailing services due to the anonymity of fellow passengers (Moody, Middleton & Zhao, 2019), several studies have pointed out that riders are less likely to share rides with racially and ethnically diverse passengers (Brown, 2018). Certain demographic factors such as gender, income, geography, etc. influence the attitude to share these rides (Moody et al., 2019). In addition, Pratt et al. (2019) also highlighted the issues of increased travel time and uncertainty while using shared ride-hailing. Considering the potential of shared ride-hailing services in addressing the traffic congestion problem, and limited empirical work on this area of research, it would be interesting to see the extent to which the shared ride-hailing service will replace the solo ride-hailing service.

The present study adopts the technology acceptance model (TAM) to understand the antecedents of commuters' intentions (CI) to use shared ride-hailing services. TAM has received strong support in explaining innovative technology acceptance, but has also been criticised for not accounting for the role of negative factors, while adopting technology-based solutions (Girod, Mayer, & Nägele, 2017). Several studies have reported that commuters might refuse to use the shared ride-hailing service as it involves a variety of risks including expected performance risks, safety risks and privacy risks, even if it is seen as an innovative and sustainable mobility solution (Wang et al., 2019). In relating to perceived risk, it has been found that trust is critical in order to initiate technology-mediated online transactions between strangers (Gefen, Karahanna, & Straub, 2003). In the sharing economy, platforms not only provide an ecosystem to complete a business transaction, but it also plays an important role in establishing and maintaining trust-based relationships (Hawlitschek, Notheisen, & Teubner, 2018). Based on the above arguments, in the present study, we have added two new

constructs, namely trust and perceived risk (PR), along with perceived usefulness (PU) and perceived ease of use (PEU) into the research framework model to better understand the CI to use shared ride-hailing service.

Furthermore, a few studies focussed on gender differentials in travel patterns in the Indian context found that women in urban areas depended much more on mass transit because of their low income, limited car ownership, or inability to drive a car (Mahadevia & Advani, 2016). However, in a similar study, Korzhenevych and Jain (2018) found that women (especially belonging to the high income bracket) often choose to commute using their own car. In another study, Kim, Ko and Park (2015) stated that car owners declined to change their car ownership but showed positive intentions to use shared mobility. Therefore, gender and car-ownership have been included as a moderator in the research model to bring forth additional insights.

Motivated by the gaps above as noted in the previous literature works, this study aims to investigate the key psychological factors that determine the CI to use shared ride-hailing services, and to examine the moderating role of gender and car-ownership in particular, on the relationship of these variables.

The remainder of the paper is organised as follows. Section 2 describes literature on the sharing economy, shared mobility, shared ride-hailing service, and the research model for the study. Section 3 explains the research methodology followed by Section 4, which reveals findings of this study. Sections 5 and 6 deal with the discussion and implications of the study respectively, and section 7 presents the reader with a conclusion.

2. Literature Review

2.1 Sharing Economy

The "sharing economy" is the new buzz word in academics, public writings, and the corporate world. The sharing economy has enabled an altogether new business model, where people and companies can share resources with the help of technology (Cohen & Kietzmann, 2014). In literature, various terminologies have been used to define the sharing economy, including peer-to-peer economy, prosumerism, collaborative consumption, access-based consumption, on-demand economy, commercial sharing system, and sharing services, amongst others (Wang et al., 2019; Selloni, 2017). However, there has been a

disagreement on the definition of the sharing economy in literature. Botsman and Rogers (2010) portrayed it as temporary sharing or renting of personal commodities in lieu of payment using a digital platform. Lamberton and Rose (2012) described the sharing economy as a system managed by the marketers that provide customers an opportunity to enjoy product benefits without owing it. Hamari, Sjöklint and Ukkonen (2016) defined it as a peer-to-peer based economy, where access to the goods is enabled through community-based online services. Habibi, Kim and Laroche (2016) suggested a sharing/exchange continuum, where pure sharing and pure exchanging are the two extremes. Recently, Ertz, Durif and Arcand (2019) defined it as a circulation scheme of resources, which enables consumers to act as receivers and providers of valuable resources or services on a temporary or permanent basis, either through direct interaction between consumers, or through a platform/ intermediary. In a nutshell, two commonalities can be drawn from the above-stated definitions about the sharing economy. First, there needs to be access (temporary/permanent) to the goods and services, and secondly, reliance on the Internet (especially web 2.0) which allows users to connect.

Shared mobility has emerged as the dominant part of the sharing economy, which offers short-term access of vehicles based on smart-phone applications for matching the drivers and passengers without any barriers (Chen et al., 2018). However, shared mobility is an umbrella term used for various kinds of shared mobility options, such as carsharing, bikesharing ridesharing, and ride-hailing (Rayle, Dai, Chan, Cervero, & Shaheen, 2016). Many companies offer these services worldwide, for example, Uber, Ola, DiDi, Lyft and Grab taxi. Globally, the usage of shared ride-hailing services has been growing at a substantial rate, and is projected to be used by 12 million commuters by 2020 (Cohen & Kietzmann, 2014). Though the initial motives associated with the sharing mobility was purely economical, recent studies have linked it with sustainability, equality, empowerment, social inclusion, openness, convenience, point-to-point mobility and reputation (Godelnik, 2017; Hamari et al., 2016).

The present study focussed only on one form of shared mobility, i.e. shared ride-hailing services, also termed as ridesplitting or pooled ride-hailing in literature (Godelnik, 2017; Shaheen & Chan, 2016). On the basis of the observed ridesourcing data, Li, Pu, Li and Ban (2019) reported: (1) current adoption is considerably low and approximately 90 per cent of the ridesplitting trips consist of two shared rides in China;

(2) the travel times and distance covered using shared ride was high in comparison to the single ride due to detour distances. In another study conducted in China, it was found that ridesplitting impacted urban mobility, where users were earlier using buses and metro for mobility purposes (Chen et al., 2018). Further, Spurlock et al. (2019) identified that the users of ridesplitting services were middle-income and young commuters. Several studies have also compared the traditional taxi industry with the modern times ridesourcing services and reported that ridesourcing is not emerging as a substitute for traditional transport systems, but rather complementing it by filling the gaps (Nie, 2017, Rayle et al., 2016).

Nonetheless, the literature on shared ride-hailing fell short on various grounds. Firstly, most of the present work has been focussed only on the early adopters of shared ride-hailing services, which leaves behind the perception of the non-users of these services (Schlüter & Weyer, 2019). Secondly, there is hardly any exclusive study on shared ride-hailing services, as earlier studies have concentrated on the on-demand ride-sourcing services. Hence, the findings of these studies may not be generalised to this niche service segment. Thus, the present study attempts to fill these gaps by conducting a study exclusively on shared ride-hailing services, by measuring important psychological variables influencing commuters' intention to use the services through using a questionnaire.

2.2 Technology Acceptance Model

There are a few commonly used technology acceptance theories in literature, such as technology acceptance model (TAM), unified theory of acceptance and use of technology (UTAUT), diffusion of innovation (DOI), and technology-task fit (TTF). However, this study adopts the TAM as its theoretical base, because it is the most widely accepted model used for technology acceptance/adoption amongst the masses (Dwivedi, Rana, Jeyaraj, Clement, & Williams, 2019; Wong, 2016). In a TAM meta-analysis involving 88 studies, King and He (2006) reported the model as a powerful and robust predictive model. Nevertheless, to make TAM fit much better in terms of the context and to enhance its predictive power, several studies have added additional constructs (Goel & Haldar, 2020; Yadav & Mahara, 2019; Bailey, Pentina, Mishra, & Mimoun, 2017; Roy, 2017). Furthermore, extended TAM has also been utilised as the base model across countless technologies, including

shared mobility (Wang et al., 2019; Schlüter & Weyer, 2019; Weng, Zailani, Iranmanesh, & Hyun, 2017).

In this study, we have added two additional constructs, namely perceived risk and trust in the proposed research model to suit it to the contextual setting. Dwivedi et al. (2019) noted that the presence of moderators makes the TAM much more robust. Therefore, two moderator variables, namely gender and car ownership have been included in the proposed model. This study however, excludes attitudes from the hypothetical research model. This is inline with Legris, Ingham and Collerette (2003), who reported that only three out of twenty-two studies had included attitude as a construct in their research framework. On a similar note, Patel and Patel (2018) also established that within the TAM framework, attitude does not mediate the relationship of the perceived usefulness and perceived ease of use with the intention to use new technology.

2.3 Research Model and Hypotheses Development

Within the TAM framework, Davis (1989) defined the perceived usefulness (PU) as the presumption of enhanced productivity in the minds of the users, after using a new technological innovation. In the present context, PU refers to the level to which commuters feel that the shared ride-hailing service will be helpful in reducing traveling expenses and increasing convenience. Moreover, this service is also seen as a potential solution to reduce the number of cars or vehicles on the roads, which further leads to savings in energy consumption and the reduced level of greenhouse gas emissions (Wang et al., 2020). Earlier studies focussing on the driver's intention to use the sharing mobility reported that the perceived enjoyment, sustainability, technology embracement, variety seeking, comfort and flexibility were the major common motives (Pinto, Vieira, Carvalho, & Sugano, 2019; Alemi et al., 2018; Fleury, Tom, Jamet, & Colas-Maheux, 2017). In addition, sharing mobility allows the commuters to experience diverse choices, community interaction and social interaction (Hwang & Griffiths, 2017). Several studies have categorised these benefits, such as intrinsic benefits, which are intangible in nature, such as enjoyment and convenience, and extrinsic benefits which are tangible in nature such as cost-saving (Henten & Windekilde, 2016), as well as utility maximisation for example, utilisation of empty seats in the vehicle (Ballus-Armet, Shaheen, Clonts, & Weinzimmer, 2014). These benefits led to the perception of the usability of the sharing mobility

amongst commuters. Furthermore, a direct and positive relationship has been found between the PU and users' behavioural intentions (Haldar & Goel, 2019; Kim, Choi, Kim, & Park, 2017; Roy, 2017) to use the sharing mobility space. Since shared ride-hailing is one form of sharing mobility, it is assumed that commuters' intention will be positively affected by its perceived usefulness. Hence, we hypothesise that:

H_1: Perceived usefulness is positively related to commuters' intentions to use shared ride-hailing services.

Perceived ease of use (PEU) is defined as the degree to which the user perceives the usage of new technology, which is assumed to be effortless (Davis, 1989). There is sufficient empirical evidence to document the positive impact of the perceived ease of use on the users' behavioural intentions (Roy, 2017). Previous studies on mobile applications found that people may not start to use, or may even give up using the technology if it requires a high level of effort (Khalid, Shihab, Nagappan & Hassan, 2014; Yang, 2013). If the mobile application is easy to use, users do not need to devote a great deal of time to learn how to use it. They may also feel confident with the technology, and thus are much more comfortable using it. For the present study, PEU is defined as the extent to which a user perceives that shared ride-hailing services is simple to use, easy to use, and the user will not face any problem in using it. However, very little documented evidences were found regarding the positive influences of PEU on CI to use shared ride-hailing services. Wang et al. (2020) reported an insignificant relationship between the two. Therefore, we hypothesised that:

H_2: The perceived ease of use is positively related to the commuters' intentions to use shared ride-hailing services.

Trust has been viewed as an essential ingredient and defined as the confidence toward the other party, with whom one has to enter in some sort of relationship exchange (Garbarino & Johnson, 1999). In the e-commerce context, trust has been shown as the antecedent of consumer purchase intentions (Phang & Ming, 2018). In a recent work, Kong, Wang, Hajli and Featherman (2020) studied the effects of trust on continued use and positive word of mouth for Airbnb (one of the key sharing economy sectors), and found that consumer trust is a precursor to continuance of decisions, and for spreading positive word of mouth. In the context of the sharing economy, trusting a stranger to share a ride is crucial, since the service involves short-term encounters with strangers

(driver and co-passenger/s), which is a non-recurring relationship based on digital and real-time interactions (Mittendorf, Berente, & Holten, 2019). Trust can also reduce the perceived risk of service sharing (Lamberton & Rose, 2012). Based on this assertion, we hypothesised that:

H_3: Trust is positively related to the commuters' intentions to use shared ride-hailing services.

Perceived risk is generally defined as the consumer's belief regarding the likelihood of suffering a loss in pursuit of a predefined goal (Nicolaou & Mcknight, 2006). Earlier studies found that Internet-based shopping is riskier than traditional shopping, as consumers are not only concerned about the sellers, but also of the medium/platform. For example, Chen (2013) found that frequent users of mobile banking are more concerned about psychological risks, and over time it reduces the intentions to use mobile banking. In the context of ride-sharing, the commuters may perceive physical risks in sharing rides, since there is a physical proximity with strangers, as well as the risk of sharing important information, such as geolocation and personal profiles with co-passengers, in addition to the driver. Hence, it may reduce the intention to use shared ride-hailing services (Wang et al., 2019). Based on this argument, we hypothesised that:

H_4: The perceived risk is negatively related to the commuters' intentions to use shared ride-hailing services.

Gender is an important variable that marketers often use to segment the market. Behavioural patterns of both men and women are apparently different, attributable to psychological and biological factors (Deaux, 1985). Furthermore, gender is culturally derived and linked to either masculine traits, or feminine traits (Palan, 2001). In literature, men have been described as independent and task-oriented, while women as being dependent and self-oriented, in their behaviors (Yang & Lee, 2010). Therefore, they display different attitudes and behaviour across different situations. In addition, several researchers have found a gender gap in the adoption of technology (Kawgan-Kagan, 2015; Venkatesh, Morris, Davis, & Davis, 2003). In terms of travel behaviour, women are much more inclined than men towards using a sustainable transport system, and exhibits more willingness to reduce the solo car-usage (Polk, 2003). Furthermore, studies focussed on women's e-mobility behaviour observed that financial resources, trip lengths, traveling motives, the perceived ease of use, risk, trust, etc. are the main factors behind

choosing a particular sharing mobility option (Lenz, Kolarova, & Stark, 2019). Bearing the fact that shared ride-hailing is a technology-based on environment-friendly mobility solutions, it is of great interest to understand the gender-related differences based on the intention to use the services in question. Hence, we hypothesised that:

$H_{5(a)}$: Gender influences the relationship between perceived use and the commuters' intentions to use shared ride-hailing services.
$H_{5(b)}$: Gender influences the relationship between perceived ease of use and the commuters' intentions to use shared ride-hailing services.
$H_{5(c)}$: Gender influences the relationship between trust and the commuters' intentions to use shared ride-hailing services.
$H_{5(d)}$: Gender influences the relationship between perceived risks and the commuters' intentions to use shared ride-hailing services.

Several studies have reported that increasing car and fuel prices, limited availability of parking space, and traffic congestion have redefined commuting behaviour worldwide (Efthymiou, Antoniou, & Waddell, 2013). On one hand, Shaheen and Cohen (2007) reported that vehicle ownership has reduced, due to the increase in the use of shared ride-hailing services in North America. On the other hand, studies have found that owners of private vehicles generally ignore the cost of driving a car (Zhou et al., 2017; Zheng, Washington, HyLand, Sloan, & Liu, 2016). In addition, Nielsen, Hovmøller, Blyth and Sovacool (2015) in a qualitative study, found that car owners perceived private vehicles as much more secure, safe, convenient and a highly flexible mode of transport. They further added that several symbolic, cultural and emotional reasons are attached to car ownership. Thus, the paradoxical findings give a valid reason to further test the influence of car ownership on the commuters' intentions to use shared ride-hailing service. Thus, we hypothesised that:

$H_{6(a)}$: Car ownership negatively moderates the relationship between the perceived usefulness and the commuters' intentions to use shared ride-hailing services.
$H_{6(b)}$: Car ownership negatively moderates the relationship between the perceived ease of use and the commuters' intentions to use shared ride-hailing services.
$H_{6(c)}$: Car ownership moderates the relationship between trust and the commuters' intentions to use shared ride-hailing services.

$H_{6(d)}$: Car ownership moderates the relationship between the perceived risk and the commuters' intentions to use shared ride-hailing services.

Based on the discussed literature and hypotheses, the following research model was developed.

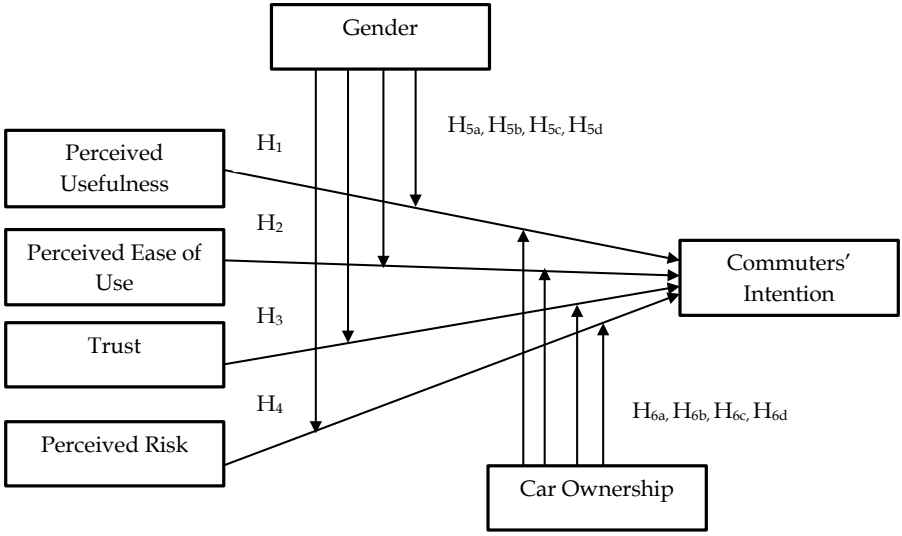

Figure 1: Research Framework

3. Research Methodology

As indicated in Appendix 1, this study adopted measures from the literature and adapted them to suit with the context of the study. To ensure face validity, three academic experts in the area of shared services were consulted. They were responsible in assessing if each question in the questionnaire was reasonable to gain information about the factor of interest, design, clarity and being overall unambigious. Following this, pre-testing and pilot testing were done before the final data collection, to ensure the validity of the content. For pre-testing, two research experts were requested to review the questionnaire to uncover any flaws. The suggestions provided by the experts were incorporated into the questionnaire as a revision. Based on the reviewing process, no major changes were made. Following this, a pilot study was conducted by distributing thirty questionnaires to the users of the service. The users

were from different gender, age, income and educational qualification backgrounds. The final questionnaire consisted of 16 close-ended questions using a Likert 5-point scale to anchor the responses ranging from 1 (strongly agree) to 5 (strongly disagree). In this study, the common method bias was controlled using methods suggested by Podsakoff, MacKenzie and Podsakoff (2012). First, the scale items were improved by eliminating the ambiguity in the wordings. Further, it was ensured that there should be no unfamiliar terms in the instrument, and was pretested before the final survey. Moreover, to achieve a much more robust result, temporal separation was used, where the study was conducted across two-period slots. In the first slot, participants recorded the responses for predictor constructs, and in the second slot, they filled the responses for the criterion construct after a gap of three weeks.

In this study, the national capital Delhi was chosen as a research setting for several reasons. Firstly, traffic congestion is the greatest concern for Delhi urban voters, and was raised during the General Elections in 2019 (Patel, 2019). Secondly, the boasting cosmopolitan culture in Delhi is the adobe of multinationals and multicultural people. Thirdly, it is a borderless city, and the population dwells in dispersed areas with unplanned infrastructure, so it becomes hard for urban planners to provide point-to-point connectivity through the public transport system. Furthermore, the capital witnesses extreme weather conditions and its temperature range from 3 degrees centigrade in winter, to as high as 47 degrees in summer, which makes it extremely difficult for pedestrians or the commuters to use non-air-conditioned vehicles to commute. As of 2018, there were 556 vehicles per 1000 people in Delhi, which means that every second person in Delhi owned a vehicle (Government of Delhi, 2018). As per the Census data 2011 released by the government, the population density of Delhi was 9,340, showcasing the pressure of space, hence insufficient parking space availability for the vehicles (Niti Aayog, 2017). Lastly, the Indian capital maintained its ranking as the most polluted capital city in the world (Greenpeace India, 2019). Hence, it is unclear whether commuters will be interested in using the shared ride-hailing service, so it is worth investigating the commuters' intentions to use the service. Hence, the present study aims to collect empirical data from the non-adopters of shared ride-hailing services to construe the valid conclusions in an Indian context. However, to collect the sample from this enormous sampling frame, a non-probability sampling technique was used, keeping in mind the scarcity of resources (Kapoor & Dwivedi, 2020;

Lee & Moghavvemi, 2015). Questionnaires were distributed physically during the period of February 2019 to April 2019, at various public places, which included malls, café, bookstores, colleges and libraries. Only respondents who were aware of the shared ride-hailing service were approached. Of the 438 questionnaires distributed, we obtained 355 filled responses (81%).

4. Findings of the Study

4.1 Sample Profile

The profile of the respondents are shown in Table 1. The majority of the respondents (63.6%) were males, owned a personal car (65.2%), were aged less than 30 years old (65.2%), with a minimum qualification of a bachelor's degree (92.4%). The composition of respondents were found to be representative of the Delhi population (Statistics Times, 2015).

Table 1: Respondents' Profiles

Characteristic	Group	Frequency	Percentage
Gender	Female	192	54.08
	Male	163	45.92
Age	Below 30	131	36.9
	30-40	118	33.32
	Above 40	106	29.85
Academic Qualification	Less than Bachelor's Degree	30	7.6
	Bachelor Degree	215	60.6
	Master Degree and above	110	31.8
Car Ownership	Yes	231	65.2
	No	124	34.88

4.2 Analysis of the Measurement Model

In this study, the covariance-based structural equation model (SEM) was applied because of its capability to test complex causal relationships amongst the variables simultaneously. Moreover, it accounted for the error in each measurement item, leading to an improved accuracy of the results (Astrachan, Patel, & Wanzenried, 2014). In this study, we adopted a two-stage procedure to analyse the data. Confirmatory factor analysis (CFA) was exercised to ensure the validity of the measurement

Table 2: Factor Loadings, Reliability, Convergent and Discriminant Validity

Constructs	Items	Loading	Cronbach alpha	CR	AVE	MSV
Perceived Usefulness	PU1	.722	.808	.845	.578	.463
	PU2	.781				
	PU3	.815				
	PU4	.720				
Perceived Ease of Use	PEU1	.827	.835	.816	.598	.489
	PEU2	.778				
	PEU3	.711				
Trust	TRU1	.673	.760	.766	.525	.328
	TRU2	.642				
	TRU3	.843				
Perceived Risk	PR1	.512	.743	.772	.541	.312
	PR2	.852				
	PR3	.797				
Commuters' Intention	CI1	.818	.830	.845	.650	.483
	CI2	.941				
	CI3	.631				

Note: Goodness-of-fit indices χ^2/df = 4.246, Goodness-of-fit index (GFI) = .876, Comparative fit index (CFI) = .835, Root-mean-square error of approximation (RMSEA) = 0.071.

model, followed by structural model analysis. Table 2 depicts the Cronbach alpha values, which were used to measure the internal consistency across constructs, and composite reliability values, which were employed as indicator for convergent validity. As indicated in the table, all items had factor loadings of more than 0.6, average variance extracted (AVE) values of more than 0.5, and composite reliability of more than 0.8, providing evidence of convergent validity (Hair, Black, Babin, & Anderson, 2010). Table 2 also shows that the AVE values of all constructs were greater than the maximum squared variances (MSV), therefore establishing discriminant validity.

4.3 Structural Model Analysis

A 5,000 resample of boostrapping procedure was run in order to test the structural model and its associated hypotheses. As indicated in Table 3, the perceived usefulness ($\beta = 0.707$, $p < 0.001$), the perceived ease of

Table 3: Results of Structural Model Analysis

Hypotheses	Paths	Critical ratio	B values	p values	Result
H_1	PU → CI	2.143	.707	.000***	Supported
H_2	PEU → CI	1.124	.698	.003	Supported
H_3	Trust → CI	2.066	.415	.000***	Supported
H_4	PR → CI	-1.148	-.177	.002	Supported

Note: Goodness-of-fit indices χ^2/df = 3.143, Goodness-of-fit index (GFI) = .906, comparative fit index (CFI) = .905, root-mean-square error of approximation (RMSEA) = 0.041.

use (β = 0.698, $p < 0.001$), trust (β = 0.415, $p < 0.001$ and the perceived risk (β = -0.177, $p < 0.001$) were found to have a significant impact on the commuter's intentions to use shared ride-hailing services. Hence, H_1, H_2, H_3 and H_4 were supported.

4.4 Moderating Analysis

In order to test H_5 and H_6, the data were compared using multi-group analysis. As can be seen in Table 4, there were significant differences between males and females with regards to the relationship between the perceived usefulness and the commuters' intentions to use ride-hailing services (β_{males} = .748, $\beta_{females}$ = .677, CR = 2.192), as well as between the perceived risks and the commuters' intentions to use ride-hailing services (β_{males} = .379, $\beta_{females}$ = .464, CR = 2.301). Thus, H_{5a} and H_{5d} were supported, while H_{5b} and H_{5c} were rejected.

Table 4: Gender as Moderator

Hypotheses	B values		Critical ratio	Result
	Male	Female		
H_{5a}	.748	.677	2.192	Supported
H_{5b}	.321	.261	.541	Not Supported
H_{5c}	.379	.464	-.87	Not Supported
H_{5d}	-.140	-.263	2.301	Supported

To examine the moderating effect of car ownership, the data were divided into two groups based on car ownership. As indicated in Table 5, car ownership was found to have a moderating effect only on the relationship between the perceived usefulness and the commuters' intentions to use the shared ride-hailing services ($\beta_{\text{Car-owners}}$ = .682, $\beta_{\text{Non Car-owners}}$ = .868, CR = 1.96). Thus, H_{6a} was accepted. For other hypotheses pertaining to car ownership (H_{6b}, H_{6c}, andH_{6d}), the critical ratio was less than the value of 1.96, hence, no statistical support was found. This led to a rejection of H_{6b}, H_{6c} and H_{6d}.

Table 5: Car Ownership as Moderator

Hypotheses	B values		Critical ratio	Result
	Car Owners	Non Car Owners		
H_{6a}	.682	.868	.959	Supported
H_{6b}	.324	.296	.105	Not Supported
H_{6c}	.525	.229	-1.775	Not Supported
H_{6d}	.285	.198	1.735	Not Supported

5. Discussion

This study provides an empirical evidence on the importance of the perceived usefulness, the perceived ease of use, trust and the perceived risks in influencing the commuters' intention to use shared ride-hailing service. The moderating effect of car-ownership however, was only presented, in the relationship between the perceived usefulness and the commuters' intentions. In terms of gender, the only significant moderating effect was found in the relationship between the perceived usefulness and the commuter's intentions.

As expected we found that commuters see the perceived usefulness as the most important factor that influenced them to use the shared ride-hailing services. Most of them believed that the service can provide a sustainable solution in reducing the number of vehicles on the road. The possible foundation of this view may be traced back from the two time implementation of the odd-even scheme in Delhi, which forced commuters to look for alternative arrangements to travel. Though the scheme was implemented selectively, people have experienced less congested traffic on roads during peak hours (Mohan, Tiwari, Goel, &

Lahkar, 2017). In addition, commuters felt that by using this service, the energy consumption and pollution could be reduced. The continuous increase in gasoline prices and negative health impacts of traffic, which have affected the local community may have been an attribute toward this perceptions. Furthermore, unlike other public transport, the shared ride-hailing services provide last mile connectivity, and can be booked from anywhere, hence providing a sense of convenience. In addition, the shared ride-hailing service is much chaper as compared to taxis and other public transportion means. The commuters may perceived this service as value for money (Firnkorn & Muller, 2011).

This study also reported the perceived ease of use as a second important factor in determining the positive intention towards the usage of shared ride-hailing services. People spend most of their time by immersing themselves in technology, and have become seemingly technology savvy. Therefore, for them, using shared ride-hailing services has become as easy as using any other digital platform for shopping, bill payment and searching for information (Ahuja & Khazanchi, 2016). Hence, it is not surprising that although this factor is important, its effects is decreasing as people have becoming familiar with the technology (Kim et al., 2017; Sheppard & Vibert, 2019).

In a technological environment, trust is of central importance for users and is a challenge for marketers. Several studies have established trust as an important variable for enhancing the willingness to engage in online transactions, and has been demonstrated as a determinant of satisfaction, loyalty, positive word of mouth, or continuance intention. The results revealed that trust in drivers and co-passenger is essential for the users along with the general trust in the ride-hailing service. However, the anonymity of co-passengers added additional risks for the commuters. As users, they felt that they did not have the knowledge about the background of co-passengers, which is available only to the company/service provider. Therefore, in the context of shared ride-hailing services, trust becomes even more important than other forms of shared mobility. The present study confirmed the findings of Lee, Chan, Balaji and Chong (2018). Furthermore, the results depicted the perceived risk as a barrier towards shared ride-hailing services. The results implied that although the users may trust the shared ride-hailing service, they did not reject the chances of physical and information sharing risks. This is because booking a shared mobility service demands the sharing of location information and identity, which can be misused by the companies for the purpose of location-based advertising without

the user's consent. Also, the travel pattern of the users can be traced to offer them several deals. Furthermore, in-spite of having faith in service providers, users may be discouraged to use the services due to such specific reasons. Various studies have reported the user's concerns pertaining to cases of harassments, robbery, theft and assault during the use of the rides (Chaudhry, Yasar, El-Amine, & Shakshuki, 2018). Moreover, in the absence of proper feedback systems, and the inability of companies to have full control over the ride and driver, these issues reduce the adoption and intention of commuters to use the services, especially in countries with loose legal implications.

The results of this study relayed the fact that gender influenced the strength of the relationship of the perceived usefulness and the commuter's intentions, as well as the perceived risks and commuter's intentions. These results could be due to the fact that female travelers often complete various tasks pertaining to the home, kids and shopping in a single journey. Hence, unlike other public transportion, shared ride-hailing services gives them an opportunity to enjoy point-to-point mobility by breaking their journey into small parts, thus keeping the cost of traveling low in comparison to private vehicles (del Mar Alonso-Almeida, 2019). Furthermore, women are found to be more concerned about the environment because of their innate nurture characteristic, therefore influencing them to support the shared ride-hailing services (Mahadevia & Advani, 2016). However, in spite of finding usability in the service, females perceived this service as being riskier than males, because in shared ride-hailing, rides were automatically matched with other shared bookings, and no one, including companies, drivers and riders could intervene. In addition, sharing of location information along with essential personal details acted against its adoption among females. However, the various measures taken by service providers, such as the panic button, quick feedback of the ride, and reputation of the service provider, could have helped in installing trust amongst female passengers. Furthermore, since most of the users used digital platforms for daily life, the relationship between the perceived ease of use and commuters' intentions were perceived to be the same by both males and females. It is worth noting that except for the relationship between the perceived usefulness and the commuters' intentions, car ownership had not been able to show any moderation effect. In a recent work, Chng, White, Abraham and Skippon (2019) reported that in spite of financial costs involved in buying a car, people weighed in on the image and utility-related factors more than environmental factors. However, shared

ride-hailing services provided the opportunity to non-car-owners to enjoy the services of a car without it working toward harming the environment. Therefore, we observed a significant difference in the approach in both groups.

6. Implications and Conclusion

The present study offers useful insights for practitioners and policy-makers. The service providers should enhance the ease of using the shared ride-hailing services so that late adopters can also use the service. Furthermore, studies have proven that human beings always prefer services where minimum efforts are employed. Taking a clue from such behaviour, marketers should simplify the user interface and project the shared ride-hailing service as a means of saving time (less waiting time and readily available), least mental effort (comfortable and convenient) and less physical energy consumption (door-to-door service).

In enhancing the trust in the service, both the government and service providers should work in tandem. Companies should identify the social and technical enablers related to trust. For example, through the use of social media, companies can encourage their users to spread the word of mouth about their experiences of shared ride-hailing services. Moreover, companies should foster the element of trust with respect to transaction security matters. The companies can consider the option to rate the co-passengers so that notorious elements can be marked, and proper action can be taken, including denial of shared services in the future.

In this digital era, users experience a privacy paradox, where they are mostly concerned about privacy and with sharing their personal information (in non-mandatory fields as well). To manage these paradox, companies might use the privacy calculus suggested by Ackerman (2004), whereby they are offered benefits by sharing information. Companies should come up with detailed feedback pathways (optional) for the users who want to submit reports, as well as the option of cancelling, or changing the vehicle, should they face any unwarranted situations. Similarly, the government should come up with clear-cut rules and regulation about the services, service providers, drivers and passengers, so that in case of any mishap, the guilty party can be charged accordingly. To mitigate the negative impact of perceived risks on the intention to use the service amongst females, companies should make an attempt to send the same driver, so that the series of

positive experiences with the driver or platform/company would help make them feel safer, and further build trust in the service. Lastly, policymakers can utilise the shared ride-hailing service as a means to achieve social equity for have-nots, and also pitch sustainable transport among people in general. Authorities may take this opportunity to foster a *green identity* amongst the public, to encourage them in opting for sustainable green solutions when it comes to commuting.

Theoretically, this study expands the existing studies by providing insights into the factors that could affect the commuters' intention to use shared ride services. It provides empirical evidence on the important role of gender and car ownership as moderating variables using TAM.

Despite the fact that this study provides some understanding of shared ride-hailing services, it has its limitations. Firstly, as this study focussed only on an Indian context (specifically in New Delhi), the results may not be able to be generalised in other countries and cities, which may have different cultural, economic and social background. Secondly, the influence of a few important factors, such as social factors, materialism and pro-environmental values can be incorporated in future studies, since the present research did not take these factors into account. Other demographic factors such as age, education qualification and occupation may be incorporated as moderating variables. Lastly, a qualitative study would be interesting as a supplement to the quantitative approach adopted in this study.

References

Ackerman, M.S. (2004). Privacy in pervasive environments: Next generation labeling protocols. *Personal and Ubiquitous Computing, 8*(6), 430-439. http://dx.doi.org/10.1007/s00779-004-0305-8

Ahuja, V., & Khazanchi, D. (2016). Creation of a conceptual model for adoption of mobile apps for shopping from e-commerce sites–An Indian context. *Procedia Computer Science, 91*, 609-616. http://dx.doi.org/10.1016/j.procs.2016.07.152

Alemi, F., Circella, G., Handy, S., & Mokhtarian, P. (2018). What influences travelers to use Uber? Exploring the factors affecting the adoption of on-demand ride services in California. *Travel Behaviour and Society, 13*(October), 88-104. http://dx.doi.org/10.1016/j.tbs.2018.06.002

Astrachan, C.B., Patel, V.K., & Wanzenried, G. (2014). A comparative study of CB-SEM and PLS-SEM for theory development in family firm research. *Journal of Family Business Strategy, 5*(1), 116-128. http://dx.doi.org/10.1016/j.jfbs.2013.12.002

Bailey, A.A., Pentina, I., Mishra, A.S., & Mimoun, M.S.B. (2017). Mobile payments adoption by US consumers: An extended TAM. *International Journal of Retail & Distribution Management, 45*(6), 626-640. http://dx.doi.org/10.1108/IJRDM-08-2016-0144

Ballús-Armet, I., Shaheen, S.A., Clonts, K., & Weinzimmer, D. (2014). Peer-to-peer carsharing: Exploring public perception and market characteristics in the San Francisco Bay area, California. *Transportation Research Record, 2416*(1), 27-36. http://dx.doi.org/10.3141%2F2416-04

Botsman, R., & Rogers, R. (2010). *What's mine is yours: The rise of collaborative consumption*. New York, NY: Harper Business.

Brown, A.E. (2017). Car-less or car-free? Socioeconomic and mobility differences among zero-car households. *Transport Policy, 60*(November), 152-159. http://dx.doi.org/10.1016/j.tranpol.2017.09.016

Brown, A.E. (2018). Ridehail revolution: Ridehail travel and equity in Los Angeles (Doctoral dissertation, University of California, Los Angeles, California). Retrieved from file:///C:/Users/User/Downloads/eScholarship%20UC%20item%204r22m57k.pdf

Chaudhry, B., Yasar, A.-U.-H., El-Amine, S., & Shakshuki, E. (2018). Passenger safety in ride-sharing services. *Procedia Computer Science, 130*, 1044-1050. http://dx.doi.org/10.1016/j.procs.2018.04.146

Chen, C.S. (2013). Perceived risk, usage frequency of mobile banking services. *Managing Service Quality: An International Journal, 23*(5), 410-436. http://dx.doi.org/10.1108/MSQ-10-2012-0137

Chen, X., Zheng, H., Wang, Z., & Chen, X. (2018). Exploring impacts of on-demand ridesplitting on mobility via real-world ridesourcing data and questionnaires. *Transportation*, 1-21. http://dx.doi.org/10.1007/s11116-018-9916-1

Chng, S., White, M.P., Abraham, C., & Skippon, S. (2019). Consideration of environmental factors in reflections on car purchases: Attitudinal, behavioural and sociodemographic predictors among a large UK sample. *Journal of Cleaner Production, 230*(September), 927-936. http://dx.doi.org/10.1016/j.jclepro.2019.05.179

Clewlow, R.R., & Mishra, G.S. (2017). *Disruptive transportation: The adoption, utilization, and impacts of ride-hailing in the United States* (Research Report UCD-ITS-RR-17-07). Davis, CA: Institute of Transportation Studies, University of California, Davis.

Cohen, B., & Kietzmann, J. (2014). Ride on! Mobility business models for the sharing economy. *Organization & Environment, 27*(3), 279-296. http://dx.doi.org/10.1177/1086026614546199

Davis, F.D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly, 13*(3), 319-340. http://dx.doi.org/10.2307/249008

Deaux, K. (1985). Sex and gender. *Annual Review of Psychology, 36*(1), 49-81. http://dx.doi.org/10.1146/annurev.ps.36.020185.000405

del Mar Alonso-Almeida, M. (2019). Carsharing: Another gender issue? Drivers of carsharing usage among women and relationship to perceived value. *Travel Behaviour and Society, 17*(October), 36-45. http://dx.doi.org/10.1016/j.tbs.2019.06.003

Dwivedi, Y.K., Rana, N.P., Jeyaraj, A., Clement, M., & Williams, M.D. (2019). Re-examining the unified theory of acceptance and use of technology (UTAUT): Towards a revised theoretical model. *Information Systems Frontiers, 21*(3), 719-734. http://dx.doi.org/10.1007/s10796-017-9774-y

Efthymiou, D., Antoniou, C., & Waddell, P. (2013). Factors affecting the adoption of vehicle sharing systems by young drivers. *Transport Policy, 29*(September), 64-73. http://dx.doi.org/10.1016/j.tranpol.2013.04.009

Ertz, M., Durif, F., & Arcand, M. (2019). A conceptual perspective on collaborative consumption. *AMS Review, 9*(1-2), 27-41. http://dx.doi.org/10.1007/s13162-018-0121-3

Firnkorn, J., & Müller, M. (2011). What will be the environmental effects of new free-floating car-sharing systems? The case of car2go in Ulm. *Ecological Economics, 70*(8), 1519-1528. http://dx.doi.org/10.1016/j.ecolecon.2011.03.014

Fleury, S., Tom, A., Jamet, E., & Colas-Maheux, E. (2017). What drives corporate carsharing acceptance? A French case study. *Transportation Research Part F: Traffic Psychology and Behaviour, 45*(February), 218-227. http://dx.doi.org/10.1016/j.trf.2016.12.004

Garbarino, E., & Johnson, M.S. (1999). The different roles of satisfaction, trust, and commitment in customer relationships. *Journal of Marketing, 63*(2), 70-87. http://dx.doi.org/10.2307/1251946

Gefen, D., Karahanna, E., & Straub, D.W. (2003). Trust and TAM in online shopping: An integrated model. *MIS Quarterly, 27*(1), 51-90. http://dx.doi.org/10.2307/30036519

Girod, B., Mayer, S., & Nägele, F. (2017). Economic versus belief-based models: Shedding light on the adoption of novel green technologies. *Energy Policy, 101*(February), 415-426. http://dx.doi.org/10.1016/j.enpol.2016.09.065

Godelnik, R. (2017). Millennials and the sharing economy: Lessons from a 'buy nothing new, share everything month'project. *Environmental Innovation and Societal Transitions, 23*(June), 40-52. http://dx.doi.org/10.1016/j.eist.2017.02.002

Goel, P., & Haldar, P. (2020). Shared ride-hailing service in India: An analysis of consumers' intention to adopt. *International Journal of Business and Emerging Markets, 12*(3), 336-353. http://dx.doi.org/10.1504/IJBEM.2020.109598

Government of Delhi. (2018, July 6). *Economic Survey of Delhi 2017-18*. Delhi, India: Author. Retrieved from http://delhiplanning.nic.in/content/economic-survey-delhi-2017-18

Greenpeace India. (2019, March 5). *India release: Latest air pollution data ranks world's cities worst to best*. New Delhi, India: Author. Retrieved from https://www.greenpeace.org/india/en/press/3489/india-release_latest-air-pollution-data-ranks-worlds-cities-worst-to-best/

Habibi, M.R., Kim, A., & Laroche, M. (2016). From sharing to exchange: An extended framework of dual modes of collaborative nonownership consumption. *Journal of the Association for Consumer Research, 1*(2), 277-294. http://dx.doi.org/10.1086/684685

Hair, J.F., Black, W.C., Babin, B.J., & Anderson, R.E. (2010). *Multivariate data analysis* (international version). Upper Saddle River, NJ: Pearson.

Haldar, P., & Goel, P. (2019). Willingness to use carsharing apps: An integrated TPB and TAM. *International Journal of Indian Culture and Business Management, 19*(2), 129-146. http://dx.doi.org/10.1504/IJICBM.2019.101743

Hamari, J., Sjöklint, M., & Ukkonen, A. (2016). The sharing economy: Why people participate in collaborative consumption. *Journal of the Association for Information Science and Technology, 67*(9), 2047-2059. http://dx.doi.org/10.1002/asi.23552

Hawlitschek, F., Notheisen, B., & Teubner, T. (2018). The limits of trust-free systems: A literature review on blockchain technology and trust in the sharing economy. *Electronic Commerce Research and Applications, 29*(May-June), 50-63. http://dx.doi.org/10.1016/j.elerap.2018.03.005

Henten, A.H., & Windekilde, I.M. (2016). Transaction costs and the sharing economy. *Info, 18*(1), 1-15. http://dx.doi.org/10.1108/info-09-2015-0044

Hwang, J., & Griffiths, M.A. (2017). Share more, drive less: Millennials value perception and behavioral intent in using collaborative consumption services. *Journal of Consumer Marketing, 34*(2), 132-146. http://dx.doi.org/10.1108/JCM-10-2015-1560

India Brand Equity Foundation (IBEF). (2019, April). *Road infrastructure in India*. New Delhi, India: Author. Retrieved from https://www.ibef.org/industry/roads-india.aspx

Kapoor, K.K., & Dwivedi, Y.K. (2020). Sustainable consumption from the consumer's perspective: Antecedents of solar innovation adoption. *Resources, Conservation and Recycling, 152*(January), 1-12. http://dx.doi.org/10.1016/j.resconrec.2019.104501

Kawgan-Kagan, I. (2015). Early adopters of carsharing with and without BEVs with respect to gender preferences. *European Transport Research Review, 7*(4), 32-43. http://dx.doi.org/10.1007/s12544-015-0183-3

Khalid, H., Shihab, E., Nagappan, M., & Hassan, A.E. (2014). What do mobile app users complain about? *IEEE Software, 32*(3), 70-77. http://dx.doi.org/10.1109/MS.2014.50

Kim, D., Ko, J., & Park, Y. (2015). Factors affecting electric vehicle sharing program participants' attitudes about car ownership and program participation. *Transportation Research Part D: Transport and Environment, 36*(May), 96-106. http://dx.doi.org/10.1016/j.trd.2015.02.009

Kim, H., Choi, K.H., Kim, K. J., & Park, E. (2017). From owing to sharing: Understanding the emergence of social sharing services. *Program: electronic library and information systems,, 51*(2), 102-115. http://dx.doi.org/10.1108/PROG-02-2016-0010

King, W.R., & He, J. (2006). A meta-analysis of the technology acceptance model. *Information & Management, 43*(6), 740-755. http://dx.doi.org/10.1016/j.im.2006.05.003

Klotz, F. (2018). Manufacturers can also win in the sharing economy. *MIT Sloan Management Review, 59*(2), 1-5.

Kong, Y., Wang, Y., Hajli, S., & Featherman, M. (2020). In sharing economy we trust: Examining the effect of social and technical enablers on millennials' trust in sharing commerce. *Computers in Human Behavior, 108*(July), 1-10. http://dx.doi.org/10.1016/j.chb.2019.04.017

Korzhenevych, A., & Jain, M. (2018). Area- and gender-based commuting differentials in India's largest urban-rural region. *Transportation Research Part D: Transport and Environment, 63*(August), 733-746. http://dx.doi.org/10.1016/j.trd.2018.07.013

Lamberton, C.P., & Rose, R.L. (2012). When is ours better than mine? A framework for understanding and altering participation in commercial sharing systems. *Journal of Marketing, 76*(4), 109-125. http://dx.doi.org/10.1509/jm.10.0368

Lee, S.P., & Moghavvemi, S. (2015). The dimension of service quality and its impact on customer satisfaction, trust, and loyalty: A case of Malaysian banks. *Asian Journal of Business and Accounting, 8*(2), 91-121.

Lee, Z.W., Chan, T.K., Balaji, M.S., & Chong, A.Y.L. (2018). Why people participate in the sharing economy: An empirical investigation of Uber. *Internet Research, 28*(3), 829-850. http://dx.doi.org/10.1108/IntR-01-2017-0037

Legris, P., Ingham, J., & Collerette, P. (2003). Why do people use information technology? A critical review of the technology acceptance model. *Information & Management, 40*(3), 191-204. http://dx.doi.org/10.1016/S0378-7206(01)00143-4

Lenz B., Kolarova V., Stark K. (2019). Gender issues in the digitalized 'smart' mobility world – Conceptualization and empirical findings applying a mixed methods approach. In Krömker H. (ed.), *HCI in mobility, transport, and automotive systems*. Cham, Switzerland: Springer. http://dx.doi.org/10.1007/978-3-030-22666-4_28

Li, W., Pu, Z., Li, Y., & Ban, X.J. (2019). Characterization of ridesplitting based on observed data: A case study of Chengdu, China. *Transportation Research Part C: Emerging Technologies, 100*(March), 330-353. http://dx.doi.org/10.1016/j.trc.2019.01.030

Mahadevia, D., & Advani, D. (2016). Gender differentials in travel pattern – the case of a mid-sized city, Rajkot, India. *Transportation Research Part D: Transport and Environment, 44*(May), 292-302. http://dx.doi.org/10.1016/j.trd.2016.01.002

Mittendorf, C., Berente, N., & Holten, R. (2019). Trust in sharing encounters among millennials. *Information Systems Journal, 29*(5), 1083-1119. http://dx.doi.org/10.1111/isj.12237

Mittendorf, C., & Ostermann, U. (2017). Private vs. business customers in the sharing economy – the implications of trust, perceived risk, and social motives on Airbnb. In *Proceedings of the 50th Hawaii International Conference on System Sciences* (pp. 5827-5836). Honolulu: University of Hawai'i. http://dx.doi.org/10.24251/HICSS.2017.702

Mohan, D., Tiwari, G., Goel, R., & Lahkar, P. (2017). Evaluation of odd–even day traffic restriction experiments in Delhi, India. *Transportation Research Record: Journal of the Transportation Research Board, 2627*(1), 9-16. http://dx.doi.org/10.3141/2627-02

Moody, J., Middleton, S., & Zhao, J. (2019). Rider-to-rider discriminatory attitudes and ridesharing behavior. *Transportation Research Part F: Traffic Psychology and Behaviour, 62*(April), 258-273. http://dx.doi.org/10.1016/j.trf.2019.01.003

Nicolaou, A.I., & McKnight, D.H. (2006). Perceived information quality in data exchanges: Effects on risk, trust, and intention to use. *Information Systems Research, 17*(4), 332-351. http://dx.doi.org/10.1287/isre.1060.0103

Nie, Y.M. (2017). How can the taxi industry survive the tide of ridesourcing? Evidence from Shenzhen, China. *Transportation Research Part C: Emerging Technologies, 79*(June), 242-256. http://dx.doi.org/10.1016/j.trc.2017.03.017

Nielsen, J.R., Hovmøller, H., Blyth, P.L., & Sovacool, B.K. (2015). Of "white crows" and "cash savers:" A qualitative study of travel behavior and perceptions of ridesharing in Denmark. *Transportation Research Part A: Policy and Practice, 78*(August), 113-123. http://dx.doi.org/10.1016/j.tra.2015.04.033

Niti Aayog. (2017, January). *Population density* (per sq. km.). New Delhi, India: National Institution for Transforming India. Retrieved from https://www.google.com/search?ei=ypwlXYbbCYjFrQHbmpyoDA&q=density+of+population+of+delhi&oq=density+&gs_l=psy ab.1.1.0i67l3j0i131i67j0j0i 67l2j0l3.5907.10275..13900... 0.0..3.250.2331.0j10j3....2..0....1..gws-wiz.....0..0i71j33i22i29i30j0i131..12%3A0j13%3A0

Palan, K.M., Gentry, J.W., Chun, S., Commuri, S., Fischer, E., Jun, S., … Strahilevitz, M. (2001). Gender identity in consumer behavior research: A literature review and research agenda. *Academy of Marketing Science Review, 10*, 1-31.

Patel, A. (2019, May 2). Traffic congestion biggest issue for Delhi voters. *India Today*. Retrieved from https://www.indiatoday.in/elections/lok-sabha-2019/story/traffic-congestion-biggest-issue-for-delhi-voters-1515345-2019-05-02

Patel, K.J., & Patel, H.J. (2018). Adoption of internet banking services in Gujarat. *International Journal of Bank Marketing, 36*(1), 147-169. http://dx.doi.org/10.1108/IJBM-08-2016-0104

Phang Ing, Grace, & Ming, Ting (2018). Antecedents of consumer attitude towards blogger recommendations and its impact on purchase intention.

Asian Journal of Business and Accounting, 11(1), 293-323. http://dx.doi.org/10.22452/ajba.vol11no1.10

Pinto, G.A., Vieira, K.C., Carvalho, E.G., & Sugano, J.Y. (2019). Applying the lazy user theory to understand the motivations for choosing carpooling over public transport. *Sustainable Production and Consumption, 20*(October), 243-252. http://dx.doi.org/10.1016/j.spc.2019.07.002

Podsakoff, P.M., MacKenzie, S.B., & Podsakoff, N.P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology, 63*(January), 539-569. http://dx.doi.org/10.1146/annurev-psych-120710-100452

Polk, M. (2003). Are women potentially more accommodating than men to a sustainable transportation system in Sweden? *Transportation Research Part D: Transport and Environment, 8*(2), 75-95. http://dx.doi.org/10.1016/S1361-9209(02)00034-2

Pratt, A.N., Morris, E.A., Zhou, Y., Khan, S., & Chowdhury, M. (2019). What do riders tweet about the people that they meet? Analyzing online commentary about UberPool and Lyft Shared/Lyft Line. *Transportation Research Part F: Traffic Psychology and Behaviour, 62*(April), 459-472. http://dx.doi.org/10.1016/j.trf.2019.01.015

Rayle, L., Dai, D., Chan, N., Cervero, R., & Shaheen, S. (2016). Just a better taxi? A survey-based comparison of taxis, transit, and ridesourcing services in San Francisco. *Transport Policy, 45*(January), 168-178. http://dx.doi.org/10.1016/j.tranpol.2015.10.004

Roy, S. (2017). App adoption and switching behavior: Applying the extended TAM in smartphone app usage. *JISTEM–Journal of Information Systems and Technology Management, 14*(2), 239-261. http://dx.doi.org/10.4301/s1807-17752017000200006

Schlüter, J., & Weyer, J. (2019). Car sharing as a means to raise acceptance of electric vehicles: An empirical study on regime change in automobility. *Transportation Research Part F: Traffic Psychology and Behaviour, 60*(January), 185-201. http://dx.doi.org/10.1016/j.trf.2018.09.005

Selloni, D. (2017). New forms of economies: Sharing economy, collaborative consumption, peer-to-peer economy. In *Codesign for public-interest services* (pp. 15-26). Cham, Switzerland: Springer. http://dx.doi.org/10.1007/978-3-319-53243-1_2

Shaheen, S.A., & Chan, N. (2016). Mobility and the sharing economy: Potential to facilitate the first- and last-mile public transit connections. *Built Environment, 42*(4), 573-588. http://dx.doi.org/10.2148/benv.42.4.573

Shaheen, S.A., & Cohen, A.P. (2007). Growth in worldwide carsharing: An international comparison. *Transportation Research Record, 1992*(1), 81-89. http://dx.doi.org/10.3141/1992-10

Shaheen, S.A., & Cohen, A. (2019). Shared ride services in North America: Definitions, impacts, and the future of pooling. *Transport Reviews, 39*(4), 427-442. http://dx.doi.org/10.1080/01441647.2018.1497728

Sheppard, M., & Vibert, C. (2019). Re-examining the relationship between ease of use and usefulness for the net generation. *Education and Information Technologies, 24*(5), 3205-3218. http://dx.doi.org/10.1007/s10639-019-09916-0

Spurlock, C.A., Sears, J., Wong-Parodi, G., Walker, V., Jin, L., Taylor, M., ... & Todd, A. (2019). Describing the users: Understanding adoption of and interest in shared, electrified, and automated transportation in the San Francisco Bay Area. *Transportation Research Part D: Transport and Environment, 71*(June), 283-301. http://dx.doi.org/10.1016/j.trd.2019.01.014

Statistics Times. (2015). *Population of Delhi*. Retrieved from http://statisticstimes.com/demographics/population-of-delhi.php

Tandon, S. (2018, April 19). Traffic jams in just four Indian cities cost $22 billion a year. *Quartz India*. Retrieved from https://qz.com: https://qz.com/india/1255427/traffic-jams-in-delhi-mumbai-bengaluru-and-kolkata-alone-cost-india-22-billion-a-year/

Venkatesh, V., Morris, M.G., Davis, G.B., & Davis, F.D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly, 27*(3), 425-478. http://dx.doi.org/10.2307/30036540

Wang, Y., Gu, J., Wang, S., & Wang, J. (2019). Understanding consumers' willingness to use ride-sharing services: The roles of perceived value and perceived risk. *Transportation Research Part C: Emerging Technologies, 105*(August), 504-519. http://dx.doi.org/10.1016/j.trc.2019.05.044

Wang, Y., Wang, S., Wang, J., Wei, J., & Wang, C. (2020). An empirical study of consumers' intention to use ride-sharing services: Using an extended technology acceptance model. *Transportation, 47*(1), 397-415. http://dx.doi.org/10.1007/s11116-018-9893-4

Weng, G.S., Zailani, S., Iranmanesh, M., & Hyun, S.S. (2017). Mobile taxi booking application service's continuance usage intention by users. *Transportation Research Part D: Transport and Environment, 57*(December), 207-216. http://dx.doi.org/10.1016/j.trd.2017.07.023

Wong, G.K. (2016). The behavioral intentions of Hong Kong primary teachers in adopting educational technology. *Educational Technology Research and Development, 64*(2), 313-338. http://dx.doi.org/10.1007/s11423-016-9426-9

Yadav, R., & Mahara, T. (2019). An empirical study of consumers intention to purchase wooden handicraft items online: Using extended technology acceptance model. *Global Business Review, 20*(2), 479-497. http://dx.doi.org/10.1177/0972150917713899

Yang, H.C. (2013). Bon Appétit for apps: Young American consumers' acceptance of mobile applications. *Journal of Computer Information Systems, 53*(3), 85-96. http://dx.doi.org/10.1080/08874417.2013.11645635

Yang, K., & Lee, H.-J. (2010). Gender differences in using mobile data services: Utilitarian and hedonic value approaches. *Journal of Research in Interactive Marketing. 4*(2), 142-156. http://dx.doi.org/10.1108/17505931011051678

Young, M., & Farber, S. (2019). The who, why, and when of Uber and other ride-hailing trips: An examination of a large sample household travel survey.

Transportation Research Part A: Policy and Practice, 119(January), 383-392. http://dx.doi.org/10.1016/j.tra.2018.11.018

Zheng, Z., Washington, S., Hyland, P., Sloan, K., & Liu, Y. (2016). Preference heterogeneity in mode choice based on a nationwide survey with a focus on urban rail. *Transportation Research Part A: Policy and Practice, 91*(September), 178-194. http://dx.doi.org/10.1016/j.tra.2016.06.032

Zhou, F., Zheng, Z., Whitehead, J., Perrons, R., Page, L., & Washington, S. (2017). Projected prevalence of car-sharing in four Asian-Pacific countries in 2030: What the experts think. *Transportation Research Part C: Emerging Technologies, 84*(November), 158-177. http://dx.doi.org/10.1016/j.trc.2017.08.023

Appendix I: Instrument Used for the Study

Construct and Item	Adapted From
Perceived Usefulness	
For me shared ride-hailing service is a value for money deal	Pinto et al. (2019), Wang et al. (2020)
Using shared ride-hailing service will make my travelling convenient	
Using shared ride-hailing service reduce traffic congestion	
Using shared ride-hailing service can reduce pollution and energy consumption	
Perceived Ease of Use	
I feel using shared ride-hailing service would be easy	Wang et al. (2020), Yang (2013)
I feel using shared ride-hailing service will be simple	
I don't feel that using shared ride-hailing service will cause any problem	
Trust	
I feel shared ride-hailing service to be trustworthy	Kong et al. (2020), Mittendorf & Ostermann (2017)
I feel shared ride-hailing service to be reliable	
In feel that in shared ride-hailing service drivers and co-passengers can be trusted	
Perceived Risk	
I feel risk in sharing ride with strangers	Wang et al. (2020), Mittendorf & Ostermann (2017)
I feel that sharing ride-hailing platforms ask too much personal information	
I feel there is potential risk in sharing my personal information without my authorisation	
Commuters' Intention	
I would like to use shared ride-hailing service in future	Mittendorf et al. (2019), Wang et al. (2020)
I am willing to use shared ride-hailing service	
I plan to use shared ride-hailing service	