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A SYSTEMATIC LITERATURE REVIEW ON RIDESHARING: DETERMINANTS, THEORETICAL GROUNDS AND METHODOLOGIES

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Abstract:

Ridesharing offers great benefits to its users. Although ridesharing literature has gained attention from researchers around the globe, the status quo of ridesharing literature especially among the riders and drivers still remains unclear. This literature review assesses recent ridesharing research to find out the regularity concerning determinants of ridesharing usage among riders and drivers. This review also explores the most preferred theoretical trends by ridesharing researchers as well as methodologies applied. Results show that customer satisfaction, service quality and trust were the most significantly researched factors in both the research streams. This review also portrays a steady progression of technology acceptance models up till the introduction of Technology Acceptance Model (TAM) and reveals quantitative mode as the most common mode of research. Finally, this analysis presents notable recommendations for upcoming ridesharing researchers.

Keywords:

Ridesharing, Usage, Riders, Drivers.

Introduction

The world has witnessed a revolutionary disruption in urban transportation with the launch of ridesharing. Such platforms have not only transformed but also eased mobility for millions of



people around the globe. Initially, ridesharing dates back to World War II when it was introduced as an alternative to transportation for workplaces (Chan & Shaheen, 2012). Today, ridesharing mechanisms are made possible through the evolution of urban technology such as smart phones, digital payments, and GPS systems (Hahn & Metcalfe, 2017).

In 2009, Uber emerged as the first platform offering ridesharing services (Hunaiti, Masarweh, Huneiti, Alshebailat & Tania, 2018). Since then, countless ridesharing platforms such as Lyft, DiDi, Grab have come into play offering convenience, low costs and lower pollution rates as a few of their multiple benefits (Ferràs-hernández et al., 2007; Ferguson, 1997; Morency, 2007; Chan & Shaheen, 2012; Furuhata et al., 2013).

Literature wise, ridesharing has caught attention of multiple Information Systems (IS) scholars over the past decade. Although the expanding body of literature has grown to broad disciplines, research in this domain still remains deranged. The term itself lacks precision leading to an unavailability of a universal term and definition. Academic researchers refer to ridesharing as *ride-sourcing* (Jin, Kong, Wu & Sui, 2018), *ride-hailing* (Slowik, Fedirko & Lutsey, 2019), *e-hailing* (Sahir & Marzuki, 2018), *car-sharing* (Ullah, Liu and Vanduy, 2019). Whereas, practitioners often refer to it as *Transportation Network Companies* (TNCs) or *Mobility Service Providers* (MSCs) (Chan & Shaheen, 2012).

In terms of definition, a significant advancement is the highly cited paper by Furuhata et al., (2013) where they defined it as "mode of transportation where individuals share a vehicle for a trip and split the travel costs with others that have similar itineraries as them". This definition incorporates the concept of carpooling, underpinning the idea of sharing during ridesharing transactions. Meanwhile, others focus on referring to ridesharing as "a platform where consumers and drivers are connected through a mobile application to attain rides" (Hahn & Metcalfe, 2017; Pham et al., 2017; Joseph, 2018), directing the emphasis of riders, drivers and a platform during a ridesharing transaction.

Notably, there are two main streams of research when it comes to ridesharing including the riders' as well as the drivers'. Although the present-day landscape of ridesharing is diverse and disparate, it is more commonly overpowered by perspective of riders (Balachandran & Hamzah, 2017; Chin & Lai, 2018; Haba & Dastane, 2018). The first stream has examined the adoption and acceptance of ridesharing platforms along with its determinants, emerging challenges and practical implications among riders. The other streams that focus on drivers are still progressing by mainly exploring the legal boundaries of drivers and motivation of usage. Thus, the main purpose of this systematic literature review is to explore both these research streams by examining the most common topics of interest when it comes to ridesharing research amongst both riders and drivers, the most commonly applied theoretical models as well as methodologies driving those researches.

A systematic literature review is generally defined as a systematic, explicit and reproducible method of identifying, evaluating as well as summarizing existing literature (Okoli & Schabram, 2012). In that vein, our aim is to distinguish different trends that exist in the current Information Systems (IS) literature in terms of ridesharing usage and examine existing parameters among the riders and drivers. Specifically, this paper proposes the following research questions: 1. What is the status quo of research pertaining to ridesharing usage among drivers? 2. What is the status quo of research pertaining to ridesharing usage among



riders? 3. What are the most popular theoretical trends in ridesharing research? 4. What are the most commonly applied methodologies in research concerning ridesharing?

Thus, for the purpose of answering the above research questions, an analysis of research articles comprising of journal articles and conference proceedings serve as the foundation of this review. By answering these questions, we will have a rundown of the most significant research topics concerned with ridesharing riders and drivers, an overview of the theoretical models as well as methodologies driving these researches. As a result, we provide recommendations for future research in order to contribute in bridging the gap between research concerning drivers and riders. This paper firstly provides the background of ridesharing followed by a discussion of the selected papers from ridesharing literature including most popular factors and determinants in both the user's (drivers and riders) researches, theoretical grounds as well as research methodologies applied. Finally, the paper presents a conclusive overview and proposes recommendations for future researchers.

Review Methodology

This systematic search is conducted with coded keywords and conceptions extracted from research disciplines dealing with determinants, issues, theoretical grounds and methodologies concerning usage of ridesharing usage among drivers and riders. All of these keywords initiated the preliminary search aiming to identify relevant papers. In specific, the following keywords were chosen for search queries to pinpoint papers that mainly focus on ridesharing driver's component of our research question: "uber drivers", "ridesharing drivers", "e-hailing drivers", "grab drivers", "e-hailing", "ride-hailing drivers" and "sharing economy". In order to find out research issues associated with ridesharing usage among drivers, keywords such as "determinants of ridesharing usage", "ridesharing usage", "uber driver usage", "grab driver usage", "usage of ridesharing platforms" were utilized to search for relevant literature.

On the other hand, keywords such as "ridesharing riders" "uber riders' intention to use", "e-hailing riders' usage", "determinants of usage among e-hailing riders", "e-hailing passengers usage determinants" were used in order to retrieve relevant research concerning usage of ridesharing riders.

Database including "JStor", "Science Direct", "Scopus", "Springerlink", "ResearchGate", "Emerald Insight", "Google Scholar" were used due to their abilities in covering wide range of papers concerning Information Systems research including ridesharing. A research paper was only taken into consideration if it consisted elements of ridesharing drivers' and riders' research as well as published in an English language, peer-reviewed academic journal as suggested by Salemink, Strijker and Bosworth (2017). The search was conducted and completed in May 2020. The keywords were unable to retrieve an enormous number of results through the database mentioned above as the research in this research stream is still growing. However, from the handful of the retrieved potential papers, a total of 25 academic papers fit the criteria of discussing the issues among drivers. As a result, the 25 papers became the focal point of this overview of literature.

Systematic Literature Review

Generally, ridesharing is a popular subject of interest in developed and developing countries that aims of providing empirical parallelism of both perspectives. In general, the ridesharing literature in developed countries such as the United States and Australia paid more attention



into exploring the range of effects of ridesharing on the incumbent modes of transportation industries (Tan, Lu & Land, 2017; Kim, Baek & Lee, 2018). Research related to the platform itself (service provider) looks at the fact that facilitators such as Uber have been able to avoid legal accountabilities upon their drivers due to the blurred lines created by legislators in the latter's classifications of either full-fledged employee or independent contractors. Most of the times, this has enabled companies like Uber to shy away from being held accountable for any unforeseen damages caused by their drivers. Not only that, Uber not only avoids adhering to minimum wage, but also having to pay overtime, healthcare benefits and other compensations for its drivers (Ampel,2015). In other instances, the company's legal accountability towards their drivers have been successfully challenged in the past (Christopher & Ong, 2017).

As previously mentioned, two main streams of research exist when it comes to ridesharing users. The first stream of research that includes studies from the drivers' perspectives is scare but gradually growing. Generally, the trend when it comes to the driver's research was the identification of motivating factors to become a ridesharing driver. These factors include opportunities for additional income, inclined social interactions as well as job flexibility (Shokoohyar, 2018; Liu & Xu, 2019; Valente, Patrus & Guimarães, 2019). Drivers in USA were attracted to the flexibility, work-life balance and social interaction opportunities working with ridesharing have to offer. A study carried out by Shokoohyar (2018) found out that the ability to meet new people, striking a balance between work and home as well as being able to accept rides according to their own convenience encouraged Uber and Lyft drivers to work with the ridesharing platforms. Inversely at the same time, drivers also implied that they have to deal with receiving insufficient compensations, no job security and poor rider behaviour while driving for those ridesharing platforms (Shokoohyar, 2018).

However, the growing participation rate of drivers in ridesharing platforms consolidates the fact that the benefits outweigh the disadvantages ridesharing endures. And this is obvious in multiple industrial reports including one by Statista (2020) that reveals that the user penetration level is fast growing with 1.4 million ridesharing users in 2020 and projected 1.5 million users by 2024 (Statista.com, 2020).

Besides that, literature shows that some researchers questioned the legal identity of ridesharing drivers and whether they are to be considered either full-fledged employees or independent contractors (Andoyan, 2017; Christopher, 2017). The classifications of ridesharing drivers as employees or independent contractors vary accordingly and may have legal consequences. In the instance of Uber, Andoyan (2017) argues that classifying Uber drivers as employees would insist Uber in eliminating the advantage of flexibility that comes with being an Uber driver. However, since Uber classifies themselves as technology companies and not transportation carriers, this benefits its drivers to enjoy flexibility of "being their own boss" (Browning, 2014; Hogan,2014). In fact, Hall and Krueger (2018) note that a majority of Uber's driver-partners do not choose to drive for the platform due to unemployment but chose to do so because of the nature of the work which enables them to enjoy flexibility and multiple compensations.

On the other hand, Chinese scholars seem more interested in identifying the impact of trust on their drivers' overall usage of ridesharing services including Didi (Shao & Yin, 2018). Trust as being the centre of attention is noteworthy in term its importance of nurturing a safe, secure and trustworthy ridesharing industry for both its riders and drivers. Research by Du et al., (2020) shed light on the different factors that affect acceptance of ridesharing among drivers



with and without permanent residence (Hokou) in the country (Du et al., 2020). The results of this study elucidate the disparity that exists when it comes to acceptance of electrical ridesharing among drivers. Comparatively, it was observed that drivers without Hokou found it harder to accept electrical ridesharing due to insufficient mileage. Not only that, they also struggled because of stringent regulations directed at them by the state (Du et al., 2020). However, Du et al., (2020) made a point to provide implications to be used by policy makers to soften regulations for non holders at the same time improving acceptance and usage levels of electronic ridesharing.

Besides that, service quality is also one factor of interest pertaining drivers' research in ridesharing. Research in Malaysia concluded that factors including reliability and responsiveness were significant leading to perceived service quality among ridesharing drivers (Norizzati et al., 2018). Service quality was seen as a research interest not just in drivers' research but also in literature of riders.

For the research stream of riders, literature is inclined towards determining the factors leading to usage intention, satisfaction, service quality. Intention stems from trust in the ridesharing platforms, as well as its reputation, perceived ease of use and usefulness of platforms (Mittendorf, 2017; Shao, 2018; Shao & Yin, 2018; Suhud et al., 2019). Similarly, Chin and Lai (2018) examined the determinants of purchase intention of Grab riders and posited brand image as an influential antecedent of purchase intention too.

Table 1: Determinants in Ridesharing Literature

Reference	User	Determinants
	Type	
Ample (2015)	Drivers	Legal Classifications
Christopher & Ong (2017)		Job Flexibility
Liu & Xu (2019)		Work/Life balance
Valente et al., (2019)		Meeting New People
Andoyan (2017)		Driver Tactics
Christopher (2017)		Trust
Hall & Krueger (2018)		Insufficient Endurance Mileage
Shao & Yin (2018)		Acceptance of Tailored Cars
Du et al., (2020)		Driver's Income
Tu et al., (2019)		Access To Technologies
Limpin & Sison (2018)		Innovative Personality
Norizatti et al.,(2018)		Trait Peer Adoption
		Electronics Word-Of-Mouth
		Perceived Usefulness of the App
		Service Quality
Mittendorf (2017)	Riders	Trust
Ahmed & Burki (2017)		Gender Empowerment
Shao & Yin (2018)		Employment Rates
Yasin et al., (2018)		Income
Malik, (2019)		Perceived Ease of Use
Ullah et al., (2019)		Perceived Usefulness
Javaid & Kohda, (2019)		Tangibility
Suhud et al., (2019)		Empathy



	201.10.00001/0101111
Man, et al., (2019),	Reliability
K. B. Lim et al., (2017)	Assurance
Chin & Lai (2018)	Responsiveness
Haba & Dastane (2018)	Perceived Risk
Balachandran & Hamzah	Subjective Norms
(2017)	Perceived Playfulness
	Brand Image
	Performance Expectancy
	Social influence
	Behavioural Intention
	Comfort
	Satisfaction
	Service Quality

In other instances, it has been observed that consumers of ridesharing in developing countries have benefited from its usage. Exceptionally, women in Pakistan were found to be feeling more empowered through their usage of ridesharing services (Ahmed & Burki, 2017; Yasin, Abdul & Awan, 2018; Malik, 2019). Besides that, societal impacts of ridesharing have been interest of research in developing economies as well. A number of researchers explored the impact of ridesharing on gender equality in Pakistan and to one's surprise, concluded in positive outlooks of women empowerment through ridesharing services (Yasin et al., 2018: Malik, 2019). This has undoubtedly authenticated the benefits of ridesharing not solely from economic perspectives but also social improvements. This shows that low-income countries have enjoyed not just the affordability aspect of ridesharing, but it has practically changed the societal outlook of a country's gender equality ratio. These findings differ vastly of that of developed countries, whereby the leading concerns for them has been the impact of ridesharing on incumbent business in the country. Whereas in low- income countries such as Pakistan, it has primarily improved the stratum of the society by igniting a significant level of confidence and sense of independence especially among women through the usage of ridesharing.

Moreover, risk is also observed as a barrier to adoption of ridesharing. K.B Lim et al., (2017) argues that adoption of ridesharing apps among consumers is hindered by perceived risk. Other than risk, another factor that was commonly identified in the literature is satisfaction. Studies have investigated the impact of a number of factors in relation to satisfaction of ridesharing among consumers. Factors including tangibility, empathy, reliability, assurance, responsiveness, price, promotions, coupon redemption and comfort were found to have a positive relationship with satisfaction (Man et al., 2020; Balachndran & Hamzah, 2017).

In a nutshell, it can be seen that the two streams of research in ridesharing are inclusive of diverse topics of interests. Researchers studying drivers are more interested in investigating the motivation behind usage, legal boundaries of ridesharing service providers and its impact on drivers, a few focused on exploring the functionality of the ridesharing apps whereas some researchers were concerned with the service quality. On the other hand, our reviewed literature focusing on riders is far vaster as compared to the drivers as we relatively see more affinity in the factors. However, similarity that was seen in both the streams is the analysis of trust. The importance of trust is further authenticated as it is said to be the currency of sharing economy (Botsman,2012). Overall, the review of the above literature portrays a rider-dominant literature,

leaving more empirical room for future researchers to carry out more studies that shed light on perspective of ridesharing drivers, especially in developing countries.

Revolution of Theoretical Models

Theory of Reasoned Action

Introduced by Fishbein and Ajzen (1975), Theory of Reasoned Action (TRA) is one of the earliest technology acceptance theories. It argues three factors including an individual's attitude towards their behaviour, subjective norms and behavioural intention enables one to behave in a certain manner. Behavioural intention is determined by attitude and subjective norm will lead an individual to carry out an action or behaviour. Although the model was considered to be rather general and not designed to determine a specific technology or behaviour, it has been actively used in Information Systems research to determine the adoption of a technology among its end users (Mafunda et al., 2016; Momani & Jamous, 2017).

Theory of Planned Behaviour

Theory of Planned Behaviour (TPB) is an extension of Theory of Reasoned Action introduced by Ajzen (1985). The model introduced a new construct into the existing TRA model in order to improve its predictive power (Mafunda et al., 2016). Ajzen (1985) introduced perceived behavioural control into the equation and defined it as the difficulty or easiness in performing a specific behaviour (Ajzen, 1991; Mafunda et al., 2016). Ajzen (1985) implied the model is moderated by three primary constructs including attitude towards behaviour, subjective norms and perceived behavioural control. The model has since then been successfully applied in numerous research arenas in determining individual technology acceptance including Information Systems. However, after some time, it was realized that TRA is not appropriate for Information Systems research due to its incapability in determining the relevance of the user's attitude in situations where technologies are not accessible.

Unified Theory of Acceptance and Use of Technology (UTAUT)

Unified Theory of Acceptance and Use of Technology (UTAUT) is also one of the popular technology acceptance theoretical models when it comes to examining actual usage of a new technology among its users. UTAUT, designed by Venkatesh et al., (2003) discovers critical factors in acceptance of a technology by incorporating four important acceptance determinants; Performance Expectancy, Effort Expectancy, Social Influence as well as Facilitating Conditions. Performance expectancy according to Venaktesh et al., (2003) refers to the degree to which an individual believed that using the system will help him/her to gain performance (Venaktesh et al., 2003: p.447). Effort expectancy on the other hand is defined as the degree of ease with the use of the system (Venkatesh et al., 2003). Furthermore, social influence incorporates the perception of an individual about how others deem important about his/her use of a new system. Meanwhile, facilitating conditions is concerned with the degree of belief of an individual that an organizational and technical structure is placed in order to support his/her use of the new system.

Technology Acceptance Model

Technology Acceptance Model (TAM) is the most popular models used when it comes to studying technology usage in Information Systems research. TAM was among the primary empirical frameworks to be designed by Davis (1989) who argued that *perceived ease of use* and *perceived usefulness* are the two major predictors for acceptance behaviour (Mohamad et

al., 2016). Perceived ease of use refers to the degree of an individual's belief that using a specific information system would be free of effort (Davis, 1989). Whereas, perceived usefulness refers to the degree of an individual's belief that using a specific information system would improve his/her job performance (Davis, 1989). The introduction of these two factors revolutionised Information System (IS)-based research (Davis, 1989; Szajna & Szajna, 1996; Kim & Garrison, 2009; Ward, 2013; Granic & Marangunic, 2015; Mortenson & Vidgen, 2016; Momani & Jamous, 2017; Hsiao, Moser & Schoenebeck, 2018; Venkatesh et al., 2018; Weerasinghe et al., 2018).

TAM is known to be consistent in explaining nearly half the variance (40% approximately) of an individual's usage intention and behaviour (Venkatesh et al., 2018; Weerasinghe, Chandanie & Hindagolla, 2018). However initially, the two determinants focused on performance, effectiveness and productivity from a corporate perspective only (Hsiao et al., 2018). This is because, TAM's main focus in its earlier days was confined to measuring work-related environments only, which gave a limited scope of empirical growth to information system scholars who yearned for broader horizons. Due to the work environment compatibility of TAM, Moon and Kim (2001) implied that certain aspects of TAM such as perceived usefulness could not be used in environment outside of a corporate one, such as dual information technology systems which focused on both hedonic and utilitarian aspects of the model. Despite this, TAM has been used in multiple ridesharing literature defining its suitability outside of corporate surroundings. In fact, TAM is one of the most widely applied models for Information Systems research including ridesharing (Suhud et al.,2019; Joia & Altieri, 2017).

Even though TAM was subject to empirical investigation primarily in the work-based environment but more recently, it has shifted its focus on investigating ridesharing as well. There has been a growing number of empirical studies confining focus on evaluating the role of factors on technological usage behaviours especially through the lens of TAM over the years. This paper takes a look at the trend of these publications from 2013 to 2019. The graph below displays the frequency of TAM-related papers associated with ridesharing.

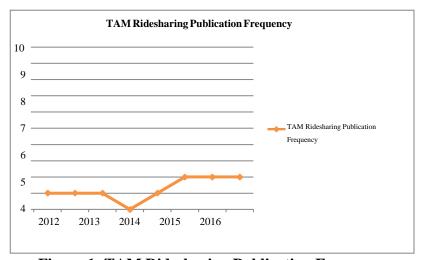


Figure 1: TAM Ridesharing Publication Frequency

As evident in the diagram above, ridesharing literature concerning TAM started off in 2012 and fluctuated ever since. Although still progressing, a gradual rise in the literature in terms of ridesharing was observed. Authors of these publications aimed to provide diverse insights of



the global ridesharing environment which was relatively new at that point of time. Figure 1 presents an overview of the publication frequency of articles solely focusing factors such as perceived ease of use, perceived usefulness on intention to use ridesharing leading to actual usage, as consolidated by TAM (Davis,1989). Earlier, a number of scholars focused on discovering the factors leading to continuance intention for on demand ridesharing services (Weng, Zailani, Iranmanesh & Hyun, 2017), but since the entire ideology of ridesharing was still in its infancy development stage, lesser publications were found. As time progressed towards the late 2000's, researchers in 2016-2018's diverted their attention to evaluating the adoption of ridesharing applications among passengers in various industries such as tourism in widespread locations including Malaysia and Brazil (Mohamad et al., 2016; Joia & Altieri, 2017; K. B. Lim & S. F. Yeo, 2017; Teo, Mustaffa & Rozi, 2018).

More recently however, researchers started to shift their attention towards studying acceptance fridesharing instead of adoption (Suhud et al., 2019). Not only that, as the global ridesharing industry developed rapidly over the years and gained immense popularity, scholars around the world produced results which yielded promising results suggesting wellbeing of the sharing economy in their countries (Liu & Xu, 2019). Overall, it can be seen that the primary aim of TAM in ridesharing was to explain intention to use these types of technological advancements. However, as the global market value of ridesharing grows, the researchers become more and more interested in evaluating new aspects of ridesharing intended to make ridesharing an enjoyable for both rider and drivers.

Ridesharing Methodologies

From the published articles that were analysed in this systematic literature review, the methodologies applied by an assembly of the aforementioned papers were examined in order to portray a pattern in terms of most commonly applied research methodologies. After the published papers had been analysed for their determinants and theoretical basis, they were scanned once again to identify the methodologies applied. Once again, the publications' abstract as well as methodology sections of the papers were analysed in order to differentiate the type of methodology applied. The review showed that 67% of the publications chose quantitative measures whereas mere 33% applied qualitative methods in their research (Mittendorf, 2017; Haba & Dastane, 2018; Joia & Altieri, 2018; Shao, 2018; Shao & Yin, 2018).

The main advantage quantitative research offers are its ability to generalize results across groups of people (Sibanda, 2009). Therefore, it could be due to these benefits offered, quantitative research was a popular mode of research among researchers. Especially since, during the infancy period of ridesharing where generalization of results in diverse geographical locations was necessary in order to provide an overview of the global ridesharing development route. On the other hand, it can be seen that a relatively smaller number of scholars opted for qualitative measures such as interviews or focus groups (Javaid & Kohda, 2019; Suhud et al., 2019). The process of qualitative researches is more subjective because the gathering of new data is aiding in creating new concepts (Neuman, 2014). Although limited, it is believed that qualitative mode of research is ever more vital in generating novel theoretical grounds as well as frameworks which can aid not just future researchers but also practitioners. All in all, it can be concluded that although the contributions quantitative research generates is undeniably vast but at the same time, qualitative research is critical in advancing literature through its currently limited but important contribution to the ridesharing literature.



Conclusion

The aim of this review was to provide an overview of the status quo that is related to the ridesharing literature in terms of determinants, theoretical aspects as well as methodologies among drivers and riders. This systematic literature review revealed a number of important points. Firstly, the most important common factors leading to ridesharing intention and usage among drivers and riders included: *Perceived Ease of Use, Perceived Usefulness, Satisfaction, Service Quality, Brand Image, Flexibility, Independence, Social Benefits*, and *Trust*.

Researchers over the years have been merely touching the surface of an incredibly vast field of research especially when it comes to the drivers. Through this review, we came to know that the drivers' literature although limited but still is circulating around the facts of legal identifications and accountabilities of ridesharing drivers and their companies. This calls for new studies in terms of other domains catering to drivers of ridesharing such as their intention to continuing driving, switching from one ridesharing company to another, impact of new regulations and so on. Besides that, this review also revealed remarkable benefits its users are practically enjoying such as gender empowerment in developing economies. Such incredible perks of ridesharing prompt us about the capabilities of technology-driven services today.

Secondly, this review explored the most popularly-applied technology acceptance models which initially focused on behavioural factors and their impacts of usage intention. However, as research progressed, we saw innovative additions to the models that helped in improving their exploratory powers. We noted that the addition of perceived usefulness and perceived ease of use revolutionised the technology acceptance research and has been used ever since by multiple researchers.

When it comes to methodologies, we found that researchers were more comfortable in conducting quantitative modes of research. This leads to easier generalisation of their results. However, although qualitative modes are limited, but are slowly progressing. They are capable of presenting deeper understanding of topics of research and produce highly valuable results. Possibly, the above review of literature has identified an imbalance in terms of methodologies applied through the discussed publications. Consequently, has left a large margin for further scholars to apply qualitative mode of research to generate more promising results for the development of the Information Systems (IS) ridesharing literature.

Finally, we notably recommend future scholars to shed light on new topics of research for ridesharing such as electrical ridesharing, upcoming aerial modes of ridesharing, the impacts of ridesharing on the environment, food deliveries as these topics are new and limitedly researched.

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