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Understanding the Determinants of E-hailing Service Adoption in Restoring Pre-Pandemic Normalcy

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Abstract

The current Covid-19 pandemic has affected human life in a significant way. Governments worldwide have imposed several intervention strategies to contain the spread of virus infections, including restrictions to e-hailing services. These months of mobility restrictions have affected the overall e-hailing preference and greatly impacted thousands of e-hailing drivers' incomes. Hence, the major challenge in restoring the pre-pandemic normalcy in e-hailing service could be overcome by understanding the factors influencing the user's adoption. Therefore, using a purposive sampling technique, this quantitative study is conducted to identify the effects of knowledge about e-hailing operations, attitude towards e-hailing apps, perception on e-hailing operational characteristics, and preference for alternative travel modes, towards intention to adopt e-hailing service amongst 415 urban residents in Kuala Lumpur, Malaysia. The results showed that compatibility, safety, and alternative travel mode of rail and private car were the significant factors that determine the intention to adopt e-hailing services. These findings will help government agencies restore e-hailing operations' ability to fulfil their societal roles by paying close attention to what consumers need in adopting their transportation desires.

Keywords: E-Hailing, E-hailing; Services Adoption, Operational Characteristics, Alternative Travel Modes Preference

Introduction

The number of e-hailing operators has increased due to the high acceptance and adoption of the services' demand. According to Boon-Chui Teo (2018), the e-hailing concept emerged in Malaysia in late 2013 with the first operator's name Uber. It was then followed by Grab (formerly known as MyTeksi) in 2014. Since then, the number of e-hailing operators has increased with new entrants' involvement in the sharing market. According to the recent data provided by Land Public Transport Agency (APAD), there are 46 registered e-hailing companies under APAD until November 2019, whilst more than 80% of 46,000 respondents have experienced using e-hailing services in Malaysia. It was also found that reliability and

affordability were the main motivation factors for users to opt for e-hailing services. Therefore, this study aims to enhance the understanding of shared technology of e-hailing service adoption by understanding its various determinants, including the knowledge and attitude of users, the e-hailing operational characteristics, and the alternative travel modes preference among Malaysian local context.

Literature Review

E-hailing is an alternative way of transportation that can also be called carpooling and car-sharing (Eva, 2020). Generally, e-hailing is a type of transportation used by at least two passengers to commute to the same destination (TCRP Research Report, 2020). According to Wang, Winter, and Tomko (2018), all e-hailing rides are either arranged in advance or changed according to passengers' requirements. E-hailing refers to an activity where a passenger requests a ride via mobile applications that can also be known as ridesharing, ride-sourcing, a vehicle for hire, paratransit, or on-demand ride service (Contreras & Paz, 2018).

E-hailing Service Adoption

The concept of adoption decision was fused from the Theory of Planned Behavior (TPB) by Ajzen (2005). According to Joia and Altieri (2018), e-hailing users more likely to be among people who are young, educated, having a high income, and living in urban areas. E-hailing adoption in South East Asia was highlighted by Charoen (2015), who showed the most favourable constructs of travel adoption is the knowledge on the operations, the user's attitude towards the mobile applications, operational characteristics of the services, and satisfaction with alternative travel modes. The advancement of mobile technology and applications are booming and resulting operators to grab the opportunity in developing relationships with passengers via mobile applications (Zhang, 2017). In an online survey conducted by APAD in 2016 and reported by Patrick (2016), it has been found that 69.5% of Malaysian prefer to use mobile applications to book an e-hailing service. A total of 71.3% of Malaysian chose to use e-hailing services due to its reliability, whilst 64.3% of the respondents prefer e-hailing services due to its affordability. Currently, Grab as the biggest e-hailing operator in Malaysia receives, on average, 1 million ride bookings per day, with an average waiting time of fewer than 6 minutes (Nakano, 2019). This result indicates that most Malaysians do doubtlessly favour e-hailing applications.

Theory of Acceptance Model (TAM) is the most familiar model to study the acceptance of e-hailing services (Wang et al., 2018). The constructs of knowledge on e-hailing operations, attitudes towards e-hailing apps, and perception on e-hailing operational characteristics were fused from TAM. Generally, it can be said that the attitudes of an individual can influence their adoptions of e-hailing. Safety of the e-hailing service could determine the user's adoption as well. Since passengers can get information about drivers beforehand, the e-hailing service can be perceived as safe (Andreas & Christoffer, 2016). The preference for alternative travel modes was fused from Unified Theory of Acceptance and Use of Technology (UTAUT) by Venkatesh, Morris, Davis, and Davis (2003). UTAUT is used to access the likelihood of success for new technology introductions. UTAUT model has also been affiliated in the transportation research field. For example, Rahman et al (2017), adopted UTAUT to analyse drivers' acceptance of navigation technology; advances driver assistance systems (ADAS). Generally, the research findings on UTAUT showed that it could be applied to people adoption of new transportation technology. Therefore, it is possible to implement the UTAUT model to

investigate influential factors behind e-hailing services adoption in Kuala Lumpur, Malaysia, as per the following framework:

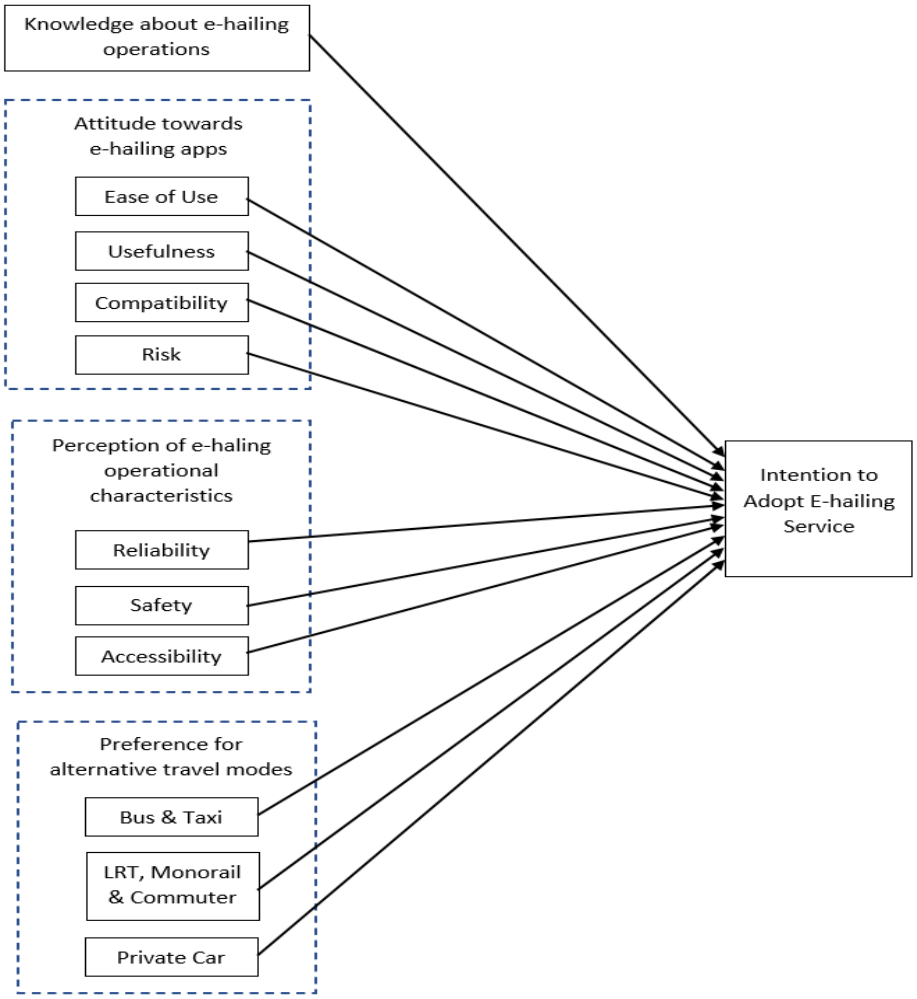

Figure 1: Research Framework

Intention to Adopt E-hailing Service

Adoption intention is defined as the intention of a person's decision or plan to carry out an action (Boon-Chui Teo, 2018). Study performed by Lin, Qiang, Hu-Chen, and Hui (2017) found that passengers' satisfaction with facilities, services, convenience, and service quality possessed a strong intention for passenger to ride and re-ride e-hailing services.

Knowledge about E-hailing Operations

An insufficient level of information on e-hailing platforms is the main reason people not using the services (Chaube, Kavanaugh & Perez-Quinones, 2010). Generally, a lack of details about e-hailing services causes people to not being aware of the existence of such services. A study performed by Malichová et al (2020) aimed to reduce the knowledge gap by addressing users' views and perspectives on e-hailing services while adopting the passengers' viewpoint. The study found that gaining knowledge of shared transport operations can significantly contribute to the adoption of e-hailing services among broader groups of people.

Attitude towards E-hailing Apps

Attitude is defined as an individual's overall evaluation of performing a behaviour (Davis, Bagozzi, & Warshaw, 1989). According to TPB, attitude impacts users' behavioural intention, which in turn influences their actual conduct (Ajzen, 2005). Yasaman and Nicholas (2018) define attitude towards e-hailing as a way of thinking about e-hailing. According to them, e-hailing participation intention is an indicator that a person is ready to adopt e-hailing services. Generally, attitude towards a behaviour is the negative or positive value that a person holds to perform a specific action. As stated by Yasaman and Nicholas (2018), individuals with a positive attitude towards e-hailing show higher behavioural intention to participate in e-hailing.

Perception of E-hailing Operational Characteristics

Research performed by Ruangkanjanases and Techapoolphol (2018) found the main operational characteristics that boost the popularity of e-hailing services. It includes travel speed, reliability, passengers' safety, accessibility, and quality of service. Carol, Maryam, and Daniel (2017) studied the reasons people adopt e-hailing services. The results of their study indicate that people or passengers are more likely to use e-hailing services when they feel safe and secure with the service provides by e-hailing operators. In the same study, Grab was found to have a better quality of service compared to its rivals which attract users to use their service and placed them to be the leader in the e-hailing arena.

Preference for Alternative Travel Modes Preference

Travellers are assumed to choose a transport mode to travel from their origins to their destinations by evaluating the characteristics of various available alternatives of transport modes either using bus and taxi, light railway transit (LRT), monorail and commuter, or own private car. According to Joia and Altieri (2018), e-hailing services provides a more flexible, convenient, and faster option compared to other public transport. Transport ownership is the dominant factor affecting travel modes preference. Households with more cars indicate a higher probability of driving and a lower likelihood of using public transportation (Wang et al., 2018). Dhawan (2018) found that individuals with fewer vehicles at home are more likely to use e-hailing services. Generally, individuals with limited and no alternative travel modes preference are more likely to adopt e-hailing services.

Methodology

E-hailing or e-hailing users in Kuala Lumpur, Malaysia have been selected for this study, and target respondents consist of people from the age group of 18 years until 55 years old. Purposive sampling was employed for this study as the sampling here was confined by specific types of people who can provide the desired information. The sample size calculation for this study was based on Tabachnick, Fidell, and Osterlind (2001), who recommended a five-to-one ratio for each item to be factor analysed. Since there are 71 items in the questionnaire that represents the six variables, this study should obtain at least 355 responses as sample size. Out of 1000 questionnaires distributed, only 415 responses were useable and yielded a survey response rate of 41.5 per cent. All items were answered by the respondents using a five-point Likert scale. Measurements were adapted from well-known works of literature, i.e. Mallat, Rossi, Tuunainen, and Öörni (2008), Lu, Yao, and Yu (2005) for knowledge about e-hailing operations (4-item), Mallat et al. (2008), Hoffmann (2007), Lu et al. (2005) for attitude towards e-hailing apps (18-item; 4-dimension of ease of use, usefulness, compatibility, and

risk), Mallat et al. (2008), Gupta (2010) for perception on e-hailing operational characteristics (12-item; 3-dimension of reliability, safety, and accessibility), Gupta (2010), Hoffmann (2007) for preference for alternative travel modes (32-item; 3-dimension of bus & taxi, LRT, monorail, & commuter, and private car), Keong (2015), Wang et al. (2018), Hoffmann (2007) for intention to adopt e-hailing service (4-item).

Findings and Discussion

Table 1: Respondents' Demographic Profiles

Gender	58.6% Female, 41.4% Male
Age	54.9% (26 – 35 Years), 19% (19 – 25 Years), 17.8% (36 – 45 Years), 7.7% (46 – 55 Years) and 0.2% (below 18 and over 56 Years)
Employment type	41 % Private Sector, 35.4% Student, 15.4% Government Sector, 7.7% Private Business, 0.2% Housewife and Retiree
Education level	97.3% University Graduate, 2.2% SPM Holder and 0.5% Secondary School.
Monthly household income	25.3% RM2500 – RM3999, 21.2% RM 4000 – RM6999, 19.5% Below RM1200, 19% RM1200 – RM2499 and 14.9% RM7000 and above.
Main purpose of traveling	46.5% Work Purposes, 24.6% Academic Purposes, 18.3% Leisure Purposes and 10.6% Shopping Purposes.
Car ownership	76.9% own a car and 23.1% do not own a car.

Table 2: Descriptive and Reliability Analysis

Variables	Mean	Reliability (Cronbach's Alpha)
Knowledge about e-hailing operations	3.87	0.96
Attitude towards e-hailing apps		
- Ease of Use	4.17	0.95
- Usefulness	4.18	0.90
- Compatibility	4.08	0.89
- Risk	3.77	0.85
Perception of e-haling operational characteristics		
- Reliability	4.02	0.94
- Safety	3.75	0.92
- Accessibility	4.06	0.86
Preference for alternative travel modes		
- Bus & Taxi	2.43	0.93
- LRT, Monorail & Commuter	2.67	0.99
- Private Car	3.15	0.97
Intention to adopt e-hailing service	3.13	0.98

Based on Table 2, it was found that mean for all variables in this study were considered high except for preference for alternative travel modes and intention to adopt e-hailing service

that were moderate. Based on Table 3, only four out of eleven independent variables that were significant, i.e. user's attitude on compatibility of e-hailing apps and safety perception of e-hailing operational characteristics were found to be positively related to the intention of adopting e-hailing service. Whilst two preference for alternative travel modes i.e. rail transport and private car were found to negatively related to intention to adopt e-hailing service.

Table 3: Multiple Regression Analysis (Dependent variable: Intention to adopt e-hailing service)

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	-1.596	.278		-5.745	.000
Knowledge about e-hailing operations	.144	.081	.077	1.779	.076
Attitude towards e-hailing apps					
Ease of Use	.019	.138	.009	.135	.892
Usefulness	-.065	.134	-.032	-.486	.627
Compatibility	.334	.092	.170	3.641	.000
Risk	-.061	.080	-.033	-.757	.449
Perception of e-haling operational characteristics					
Reliability	-.088	.089	-.044	-.994	.321
Safety	.192	.072	.114	2.673	.008
Accessibility	.106	.113	.053	.938	.349
Preference for alternative travel modes					
Bus & Taxi	-.023	.060	-.015	-.387	.699
LRT, Monorail & Commuter	-.244	.050	-.242	4.866	.000
Private Car	-.586	.041	-.591	14.280	.000
F value	95.058				
Sig.	.000				
R square	.850				

Conclusion

Overall, this study has contributed to enhance understanding of e-hailing adoption determinants in restoring pre pandemic normalcy. The findings suggest, in order to push ridership number to pre pandemic level, compatibility factors of e-hailing related applications and e-hailing operational safety compliance are two important determinants of user's intention to adopt the services. On the other hand, this study affirms that users in Kuala Lumpur, Malaysia preferred rail transport and own car as an alternative for e-hailing. This could be because Kuala Lumpur is a city that is well served by rail services and city dwellers rely heavily to train services and for passenger who are not within walking distance of a station, typically combine their train journey with a bus trip or driving and parking at the station. Hence, e-hailing adoption could be further enhanced by improving the compatibility

of its apps and safety of its operations, plus to market it in the area of no rail transport and less private car ownership. Future researcher can contribute to body of knowledge in terms of the non-users of e-hailing services. Research opportunity in investigating the factors influencing their decision to dismiss the adoption of new technology can be conducted.

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References

Ajzen, I. (2005). *Attitudes, personality, and behaviour.* UK: McGraw-Hil Education.

Andreas, F., & Christoffer, W. (2016). *Want to Take a Ride with Me?: The intention of Generation Y to Use Uber.* Sweden: Jonkoping University; International Business School.

Boon-Chui Teo, M. A. (2018). Passengers ride intention towards e-hailing services. *Malaysian Journal of COnsumer and Family Economics Vol. 21*, 153-163.

Carol, L., Maryam, R., & Daniel, L. (2017). What Are the Concerns of Using a Ridesharing Service?: An Investigation of Uber Emergent Research Forum Paper. Research Gate.

Charoen, D. (2015). Grabtaxi: A taxi revolution in Thailand. *International Journal of Management, 1(9)*, 154-157.

Chaube, V., Kavanaugh, A., & Perez-Quinones, M. (2010). Leveraging social networks to embed trust in rideshare programs. *In Proceedings of the 43rd Hawaii International Conference on System Sciences*, (pp. 1-8). Honolulu.

Contreras, S., & Paz, A. (2018). The effects of ride-hailing companies on the taxicab industry in Las Vegas, Nevada. *Transport Resources Part A*, 63-70.

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology: A comparison of two theoretical modesls. *Management Science, 35 (8)*, 982-1003.

Dhawan, S. (2018). E-Cab Hailing: A Study on Consumer Behaviour. *ELK Asia Pacific Journal of Marketing and Retail Management*.

Eva, M. (2020). *Users' Perception of Value of Travel Time and Value of E-hailing Impacts on Europeans' E-hailing Participation Intention.* Slovakia: Department of International Research Projects.

Gupta, T. (2010). Ease of Use in Public Transportation: User Psychology and Perspective Analysis. Department of Architecture, Birla Institute of Technology, Mesra, Ranchi.

Hoffmann, V. (2007). Book Review: Five editions (1962-2003) of Everett Rogers: Diffusion of Innovations. Knowledge and Innovation Management, 64.

Joia, L. A., & Altieri, D. (2018). Antecedents of continued use intention of e-hailing apps from the passengers' perspective. *The Journal of High Technology Management Research*.

Keong, W. E. (2015). Factors Influencing Malaysian Taxi Drivers Behavioral Intention to adopt Mobile Taxi Application. *International Journal of Economics, Commerce and Management, 3(11)*, 1-150.

Lin, H., Qiang, L., Hu-Chen, L., & Hui, L. (2017). Passenger Satisfaction Evaluation of Public Transportation. *Sustainability*, 1-17.

Lu, J., Yao, J. E., & Yu, C.-S. (2005). Personal innovativeness, social influences and adoption of wireless Internet services via mobile technology. The Journal of Strategic Information Systems, 14(3), 245- 268.

Malichová, E., Pourhashem, G., Kováčiková, T., & Hudák, M. (2020). Users' Perception of Value of Travel Time and Value of E-hailing Impacts on Europeans' E-hailing Participation Intention. *Journal of Sustainability ,12*, 1-19.

Mallat, N., Rossi, M., Tuunainen, V. K., & Öörni, A. (2008). *An Empirical Investigation of Mobile Ticketing Service Adoption in Public Transportation.* Personal and Unbiquitous Computing.

Nakano, T. (2019). *Grab warns Malaysia to brace for higher fares and longer waits*. Retrieved from Asian Review: https://asia.nikkei.com/Business/Startups/Grab-warns-Malaysia-to-brace-for-higher-fares-and-longer-waits

Patrick, L. (2016). *Taxi poll shows Uber, GrabCar the choice*. Retrieved from The Star: https://www.thestar.com.my/news/nation/2015/12/04/more-people-prefer-taxi-apps-services/

Rahman, M., Lesch, M., Horrey, W., & Strawderman, L. (2017). Assessing the utility of TAM, TPB, and UTAUT. *Accident Analysis & Prevention, Vol 108*, pp. 361-373.

Ruangkanjanases, A., & Techapoolphol, C. (2018). Adoption of E-hailing Applications: A Comparative Study Between Female and Male Users in Thailand. *Journal of Telecommunication, Electronic and Computer Engineering, 10*, 43-48.

Tabachnick, B. G., Fidell, L. S., & Osterlind, S. J. (2001). Using multivariate statistics.

TCRP Research Report. (2020). *Shared Mobility and the Transformation of Public Transit.* Retrieved from TCRP Research Report:: http://www.trb.org/Main/Blurbs/174653.aspx

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. MIS quarterly, 425-478.

Wang, Y., Winter, S., & Tomko, M. (2018). Collaborative activity-based e-hailing. *Journal of Transport Geography, 72*, 131-138.

Yasaman, A., & Nicholas, E. (2018). Why do people rideshare? An experimental study. *Transportation Research Part F 55*, 9-24.

Zhang, T. O. (2017). Generation Y's positive and negative eWOM: Use of social media and mobile technology. *International Journal of Contemporary Hospitality Management, 29(2)*, 732-761.