Customer's acceptance of the e-hailing application. How well do ease, physical security, relative advantage, social influence, and trialablity matter?

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ABSTRACT

E-hailing services have a pivotal role in mitigating traffic congestion and decreasing the volume of private vehicles on the streets, thereby amplifying the effectiveness of the road transportation network. It provides income opportunities for drivers who can work flexible hours and utilize their own vehicles to earn money. Nevertheless, various obstacles stand in the way of the growth of e-hailing services, with customer acceptance being a prominent concern. Consequently, the primary objective of this research is to assess the extent to which the community embraces e-hailing applications, specifically focusing on Grabcar. By employing a systematic random sampling technique, a total of 345 individuals participated in this comprehensive study. The outcomes, analyzed through the lens of the Diffusion of Innovations Theory, reveal that the relative advantages, ease of use, trialability, social influence, and physical security significantly shape individuals' acceptance to adopt the Grabcar application. The findings of this study carry substantial implications for academic scholars and policymakers alike, guiding the creation of innovative strategies to optimize the potential of digital application services. As future research evolves, it may diverge from these findings to delve into qualitative aspects within this research realm, encompassing vital economic, social, and governance components. Such exploration would align with the ambitious pursuit of Sustainable Development Goals, reflecting a broader commitment to holistic societal advancement and responsible technological integration. Focusing solely on a specific region or demographic, this study's limitation could restrict its findings' broader applicability to a diverse population.

Contribution/Originality: This study presents valuable insights through empirical evidence that unveils intricate associations among scrutinized variables in the adoption of e-hailing services, an area with limited research. It emphasizes how perceptions influence the adoption and continuous utilization of innovative solutions such as Grab car e-hailing, particularly within the dynamic landscape of evolving transportation technologies.

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1. INTRODUCTION

Gig economy shows an alternative means of advanced transfer services to the economy and society. Shared mobility allows users to gain short-term access to transportation modes due to e-hailing services provided through Transportation Network Company (TNC) by matching passengers demanding mobility with resources provided by drivers (Jais & Marzuki, 2018). The number of tourists and users from various countries such as Malaysia, Singapore, Indonesia, Thailand, Vietnam, Philippines, Africa, Myanmar and Cambodia as the main e-hailing application is a significant market leader in Southeast Asia. For instance, an increasing number of Africans are selecting Malaysia as their top destination for pursuing higher education. This choice is influenced by the fact that Malaysia shares similarities with their home countries in terms of its multiracial, multiethnic, and multireligious. 1,377 new African students applied to Malaysian universities in September 2021 (Education Malaysia, 2022). Both potential students and tourists hailing from regions such as Africa, the Arab world, and China perceive Malaysia as an appealing option for both a memorable vacation and an affordable educational experience. However, these individuals often require reliable transportation, which is where e-hailing services play a crucial role.

Debuting in Malaysia during 2018, Grabcar initially launched in the Klang Valley before extending its presence to encompass various significant locales such as Johor Bahru, Penang, Kuching, Kota Kinabalu, Melaka, and other key urban centers. The public transport industry in Malaysia has undergone a significant transformation with the launch of the Grabcar application through digital platforms has had a massive impact on the industry and society. Forecasts show that e-hailing services is growing and become part of Malaysia's transport industry and network as it becomes a competitive way to help the domestic economy by providing jobs and making it easier for people to move. But some concerns, like too much regulation by the government, would slow the growth of e-hailing services (Jais & Marzuki, 2020). Public transit systems and transport networks are essential for getting the mass population to different places. With the rapid development of mobile internet, the Grabcar application is widely available to everyone, especially those living in the city, which can reduce the complexity of traffic congestion. In addition, the transport sector is the second-largest emitter of GHG, accounting for 20% of Malaysia's global greenhouse gas (GHG) emissions (Ramli, Kadir, Ismail, Othman, & Melo, 2021). Furthermore, the application offers details and presents the travel history, streamlining the process for an individual to oversee and guarantee the secure arrival of their destination.

E-hailing can be more cost-effective (Auer, Nagler, Mazumdar, & Mukkamala, 2022). However, there are numerous e-hailing concerns. Regulators deemed the sharing economy disruptive to the traditional economy (Adriano & Su, 2017) since it occasionally exceeded the rules. Demands and supplies were linked, making the transactions easier. So, worries about regulations on using e-hailing services have become a big problem that must be fixed. Baker (2015) found that these four problems were related to e-hailings which are a) labour regulations, b) consumer protection regulations, c) property rights, and d) the way services are treated differently. Apprehensions arose due to the shared business models employed by e-hailing services globally, including Malaysia. E-hailing services were previously deemed unlawful in Malaysia (Sukumaran, 2015) owing to a lack of regulatory framework governing their operations. Its impacting conventional transportation modes like taxis, which suffered a significant loss of clientele. This period witnessed instances of confrontations between taxi drivers and e-hailing service operators, reflecting the tensions prevailing at the time. Starting from 2016, the government initiated efforts to address e-hailing services in an equitable manner. The Malaysian Ministry of Transport tasked the Land Public Transport Agency with devising strategies to curtail the unauthorized utilization of e-hailing services. Subsequently, in 2017, this amendment was formally enacted. By July 2019, the Land Public Transport Agency had already issued licenses to 44 e-hailing enterprises (Jais & Marzuki, 2020).

Looking at the increasing trend of using this application, the authors intend to analyse the use of Grabcar application. Therefore, this study is to examine the determinants that influence the community's adoption of Grabcar e-hailing services in congested Historical Melaka. Statistics show that there is an increase in population in Melaka by year and in 2019 the total population has increased to 930,700 people by 7.20 percent from 2015. As Melaka is a The United Nations Educational, Scientific and Cultural Organization (UNESCO) world heritage site, the state of Melaka is a fast-growing tourist destination where tourists or locals prefer to use GrabCar for their easy journey to places of interest. The historical city of Melaka has witnessed a surge in its visitor count, with the local government recording an escalation to 4.79 million visitors in the initial quarter of 2019 compared to the preceding year. Moreover, the total number of visitors has culminated in an impressive 20 million during the Visit Melaka 2019 campaign.

Based on statistics show that 60 percent of state visitors are domestic tourists; of the five domestic tourists who reportedly visited the state of Melaka came from Selangor, Kuala Lumpur, Johor, Terengganu and Negeri Sembilan (Bernama, 2018). Therefore, in tourist state such as Melaka, the people outside the State flock in from various places and are joined together. Automatically, they formed diverse group of peoples. These groups of people constitute the biggest users of Grabcar services. Hence, based on the Diffusion of Innovations Theory, five factors - relative advantages, ease of use, trialability, social impact, and physical security - were selected as independent variables, with Grabcar application usage as the dependent variable. For the study's objective, questionnaires were provided to residents of Melaka, including tourists and visitors who utilise the Grabcar application. This research covers only one administrative district in Melaka, namely Melaka Tengah; the remaining two districts namely Alor Gajah and Jasin have not been covered because they are far from the city.

The subsequent section of this paper is as follows: The literature review will be discussed in the following section. The methodology section will then examine sample methods and questionnaires. The following section is the findings, in which the analysis results are tabulated and discussed. The conclusion section finally concludes.

2. LITERATURE REVIEW

2.1. Theoretical Foundation

Rogers' Diffusion of Innovations Theory (DIT) from Rogers (1976), analyzes the factors influencing the adoption of novelties, applicable to the context of Grab car e-hailing services. DIT becomes a valuable lens to analyze how consumers respond to the introduction of a service like Grab car e-hailing. The theory highlights factors like relative advantages, compatibility, trialability, observability, and less complexity, which determine the pace of innovation adoption. Davis (1989) Technology Acceptance Model (TAM) from 1989 is particularly relevant to understanding users' acceptance of the Grab car e-hailing service. TAM emphasizes perceived utility and simplicity, crucial in driving system utilization. This model underscores users' intentions to engage with technology, thereby shaping attitudes and actual usage patterns for the Grab car e-hailing service (Davis, 1989; Davis & Venkatesh, 2004; Venkatesh, Thong, & Xu, 2012). This research illuminates how these theories interplay in the context of embracing Grab car e-hailing services.

2.2. Acceptance of using E-hailing Grabcar Application

In recent years, the public transport industry in Malaysia has undergone a major transformation with the adoption of digital platforms that connect the services provided to customers. In this technological age, metropolitan communities utilise Grabcar applications for convenience and to minimise traffic congestion by providing comfortable and secure public transportation services. Five significant changes will impact the utilisation of e-hailing applications.

Relative Advantages. The comparative advantage is the extent to which the innovation is seen as superior to the concept it replaced (Rogers, Singhal, & Quinlan, 2014). Users can get a lot of benefits from e-hailing applications such as saving time and money, less stress for passengers and driving as well as users do not need to know the route. Ruangkanjanases and Techapoolphol (2018) found that drivers associated with e-hailing are more dedicated than conventional taxi drivers. The conventional ones prefer to charge unreasonable fares especially during peak hours, which leads to quick passenger acceptance. Since the travel-sharing service model is mostly based on offering safe and efficient transportation methods with a fixed price guarantee, it will give them the advantage of interacting with customers. In addition, passengers seek facilities and facilities to book trips and get drivers with a simple application-based taxi system such as e-hail application, so as to increase the purpose of passenger travel in using their services (Teo, Mustaffa, & Rozi, 2018). Hence the first hypothesis to be tested is:

H_1: There is a significant relationship between Relative Advantages on acceptance of e-hailing application.

Ease of Use. Consumers tend to be more receptive to programs perceived as simpler than alternative applications. According to Bugembe (2010) and Nurjanah, Prabumenang, and Aditya (2023) ease of use is focused on the principle of convenience itself, which means that users can use the software easily. Karahanna, Straub, and Chervany (1999) and Roh and Park (2019) study revealed a significant positive influence of perceived ease of use on the intention of potential users to adopt the application. Thus, predicted ease of use reflects how end-users will perceive technology and its acceptance (Ma & Liu, 2004; Venkatesh & Davis, 2000). Thus, people can use mobile services because they consider them useful (Noor, 2011). Geradin (2015) and Reyes et al. (2023) identified were the advantages of the Grabcar application, which offer real-time updates on the requested car's location and enable progress tracking through smartphones. This feature holds particular value for tourists, providing them with a convenient method to request Grab trips directly from their current location. As a result, they are relieved from the need to walk to a taxi stand or avail of other forms of public transportation (Wan et al., 2016).

H_2: There is a significant relationship between Ease of Use on acceptance of e-hailing application.

Trialability. Trialability is the level of innovation that may have been experienced before (Rogers et al., 2014). Trialability refers to whether consumers are more likely to accept new technologies given a free trial. Tryable innovations provide less certainty to consumers where users can learn by doing so. If users have experience or experiment with technology, they can influence the use of that technology. Karjaluoto, Püschel, Mazzon, and Hernandez (2010) reported that new creative ideas with trialability functions are implemented more frequently than those not offered. Reliability can also reduce the uncertainty associated with adoption (Tan & Teo, 2000). In the progress of early adoption agreements, trialability can foster trust. Trialability will increase confidence in the initial decision-making process. Individual knowledge will increase throughout the trial period and allow initial confidence to grow slowly.

In addition, trialability can also influence consumer attitudes towards using services (Changchun, Haider, & Akram, 2017). According to Kumar and Dash (2014) consumers use a late adaptation of innovative technologies. If consumers are allowed to check, they recognise the purchase or use of products and services faster than those who are not allowed to experiment. Providing trialability can lead to early use when people are allowed to use the app on their mobile phones and tablets for a while. To develop applications, trialability features can attract more users and lead to use.

H_3: There is a significant relationship between Trialability on acceptance of e-hailing application.

Social influence. Social influence or subjective norms refer to the level of individuals who believe that other relevant people will agree on certain behaviours (Du, Zhu, Lv, & Sun, 2012). The subjective rule is that the majority believe that he has or has no problem doing the act (Lim, Yeo, Goh, & Gan, 2018). Others believe that he should use innovation (Chong, Darmawan, Ooi, & Lin, 2010). It can be hypothesized that social influence can be a source by friends, family, mass media, peers, colleagues, neighbours or groups that have a direct relationship to influence a person's intentions or develop his or her attention and action (Ajzen, 1991). In addition, individuals often rely on feedback and suggestions when it comes to technology (Acheampong, Ertem, Kappler, & Neubauer, 2017). Social influence can also be an indication to share their experiences with other user and enable them to use new facilities as

Grabcar (Nah, Ismail, Ramayah, Hassan, & Hanaysha, 2019). including the impact of social media, will play a role in shaping decisions and prompting the dissemination of both advantages and disadvantages concerning certain topics. This dissemination could potentially lead to audiences becoming excessively well-informed (Kadir, Zakaria, Abd Aziz, & Premananto, 2022; Mahendra & Septiany, 2018).

H₄: *There is a significant relationship between Social Influence on acceptance of e-hailing application.*

Physical Security. According to Chern, Kong, Lee, Lim, and Ong (2018) security refers to a set of programs and procedures for verifying sources of information and ensuring privacy and integrity to avoid any problem on network and data. Perceived safety, i.e. in service quality, travel features i.e. individual safety, travel duration, connection accuracy, and transfer time are critical benchmarks in tourists' decision to use public transport (Chowdhury & Ceder, 2013). One of the significant contributors to choose public transport is personal safety, particularly for female passengers, which has been a primary concern and attention in travel-sharing services (Lin & Dula, 2016). Flores and Rayle (2017) found that users choose any service that feels safe for them. Therefore, Grabcar with Global Positioning System (GPS) to track driver, passengers, and travel information can ensure the safety of passengers while traveling.

Travelling with anonymous drivers by taxi causes passengers to be confused about their safety. The Grabcar application provides users with useful information such as name, phone number, photo and plate number. When requesting a ride using the Grab application, users can track the process of Grabcar via smartphone without thinking about the time a regular taxi will arrive (Geradin, 2015).

H₅: *There is a significant relationship between Physical Security on acceptance of e-hailing applications.*

It is, however, necessary to further study the importance of all factors of relative advantages, ease of use, trialability, social influence and physical security on the use of the Grabcar application.

3. RESEARCH METHODOLOGY

Melaka is a Malaysian state located in the Malay Peninsula's southern section, adjacent to the Strait of Malacca. Its capital is Malacca City, often known as the Historic City, which was included to the UNESCO World Heritage List on July 7, 2008. With 1664km² in size, the total population of Melaka in 2021 is about 933, 200 people. Especially in Malacca City, the size and population ratio have led to dense congestion. In recent years, there has been a growing need to comprehend the relationship between community and mobility viewpoints. Moreover, in a tourist state such as Historical Melaka, people from all over the world congregate and form communities. Sixty percent of state visitors are domestic tourists, while the remaining are international tourists, according to statistics (Bernama, 2018). They spontaneously formed a diversified mix of people. These demographics represent the majority of Grabcar customers.

This study examines the factors affecting the acceptability of the Grabcar e-hailing application. Although there are various e-hailing services in Malaysia, the Klang Valley is where they are most prevalent. Consequently, Grabcar is the only e-hailing service operating in Melaka during the study period. Hence, the study's sample encompasses both Melaka residents and tourists utilizing the Grabcar app, spanning diverse age groups to gauge e-hailing app acceptance. Online surveys were distributed at random, with responses collected through the Google platform. In total, 345 complete and usable responses were collected, with 26.7 per cent of the respondents being male while 73.3 per cent were female. The profiles of the respondents are summarised in Table 1.

This research employs a quantitative methodology to assess the impact of various factors – namely, relative advantages, ease of use, trialability, social influence, and physical security – on the adoption of the Grabcar application within the Melaka community. The survey questionnaire was divided into three sections: Part A covered respondent demographics, Part B contained inquiries about the independent variables (relative advantages, ease of use, trialability, social influence, and physical security), and Part C addressed the dependent variable (acceptance of the e-hailing application). The questionnaire comprised 26 items employing a five-point Likert scale ranging from strongly disagree to strongly agree, applicable to all variables.

Survey data were collected from January to February 2020 and subsequently processed using the SmartPLS software. The analysis encompassed several steps. Firstly, model validity was assessed through factor analysis. Secondly, the structural model's integrity was examined by evaluating standard root coefficients and t-statistics that exceeded a threshold of 1.645 (t > 1.645).

4. FINDINGS AND DISCUSSION

4.1. Demographic Characteristics of Respondents

The results in Table 1 indicate the characteristics of the study's respondents. Most respondents were women (73.3 percent). Respondents aged between 18-20 years (22.9 percent) and the highest group of respondents were between 22 and 30 (58.8 percent) while the rest exceeded 31 years. Most are students (51.3 percent) and staff working in the private sector (21.2 percent). The highest number of respondents earned a monthly income below RM2, 500 (75.9 percent). From the survey, respondents rarely use e-hailing applications (60.0 percent) and 13.6 percent of respondents use 2-3 times a week. A study showed that they have an e-hailing application and used it to get services from Grabcar.

Table 1. Characteristics of the sample.

Characteristics	Frequency (N=345)	Percentage (100%)
Gender		
Male	92	26.7
Female	253	73.3
Age		
18-20	79	22.9
21-30	203	58.8
31-40	30	8.7
41-50	20	5.8
51 and above	13	3.8
Profession		
Employee private sector	73	21.2
Employee public sector	56	16.2
Self-employed	24	7.0
Unemployed or seeking for a job	15	4.3
Student	177	51.3
Monthly income		
Below RM2,500	262	75.9
RM 2,501 − RM 3,500	20	8.4
RM 3,501 − RM 4,500	11	3.2
RM 4,501 − RM 5,500	19	5.5
RM 5,501 and above	24	7.0
Frequency of usage the app		
Daily	8	2.3
2 − 3 times a week	47	13.6
Once a week	37	10.7
Once a month	38	11.0
Rarely	207	60.0
Other	8	2.3

4.2. Measurement Model

Following the guidance of Fornell and Larcker (1981), the assessment of convergent validity involved computations of item reliability, internal consistency, and average variance extracted (AVE). The outcomes of the measurement model are displayed in Table 2. Notably, all factor loadings fall within the range of 0.603 to 0.886, surpassing the threshold of 0.50. Additionally, the Composite Reliability (CR) values, surpassing 0.70, signify robust construct reliability. Importantly, all factor loadings maintain a range of 0.603 to 0.886, exceeding the 0.50 benchmark. Among the factors, the highest AVE value, at 0.728, corresponds to "physical security," while the lowest, at 0.572, pertains to "ease of use." As emphasized by Pahlevan and Sharif (2018), an AVE exceeding 0.5 signifies the establishment of convergent validity for the constructs.

Table 2. Measurement model.

Construct	Items	Loading	CR	AVE
Acceptance	AD1	0.779	0.936	0.708
	AD2	0.863		
	AD3	0.872		
	AD4	0.858		
	AD5	0.832		
	AD6	0.841		
Ease of use	EU1	0.686	0.868	0.572
	EU2	0.603		
	EU3	0.832		
	EU4	0.861		
	EU5	0.771		
Physical security	PS1	0.796	0.889	0.728
	PS2	0.886		
	PS3	0.875		
Relative advantages	RA1	0.783	0.908	0.622
	RA2	0.821		
	RA3	0.752		
	RA4	0.843		
	RA5	0.816		
	RA6	0.71		
Social influence	SI1	0.794	0.821	0.605

Construct	Items	Loading	CR	AVE
	SI2	0.829		
	SI3	0.705		
Trialability	TA1	0.815	0.838	0.634
	TA2	0.753		
	TA3	0.82		

Table 3 confirms the discriminant validity has been achieved by showing a greater AVE value than its correlation with other constructs.

Table 3. Path coefficient assessment.

Variables	AD	EU	PS	RA	SI	TA
Acceptance (AD)						
Ease of use (EU)	0.719					
Physical security (PS)	0.791	0.776				
Relative advantages (RA)	0.769	0.737	0.69			
Social influence (SI)	0.672	0.581	0.655	0.544		
Trialability (TA)	0.658	0.737	0.651	0.679	0.571	

The outcomes of hypothesis testing for the primary model have been succinctly documented in Table 4, delineating the orientation of the relationship through positive or negative indications, along with the determination of significance denoted by t-values. H1 through H5 explore the impact of ease of use, physical security, relative advantages, social influence, and trialability, respectively, on the acceptance of the e-hailing application.

Table 4. Hypothesis testing.

Hypothesis	Relationship	Beta	SE	t-value	Decision
H_1	EU -> AD	0.114	0.058	1.961	Supported
H_2	PS -> AD	0.296	0.062	4.804	Supported
H_3	RA -> AD	0.339	0.053	6.457	Supported
H_4	SI -> AD	0.163	0.041	3.932	Supported
H_5	TA -> AD	0.075	0.045	1.676	Supported

Note: $*p < 0.05$.

All five variables are significantly positive with the adoption of e-hailing applications. More specifically, for H1 the beta coefficient is 0.114, H2 explained the beta coefficient of 0.296, H3 explained the beta coefficient is 0.339, H4 with beta coefficients 0.163 and H5 with 0.075. it specifies that the five of the hypotheses (H1, H2, H3, H4 and H5) were statistically significant when the result was accepted at t > 1.645. Figure 1 shows the model and results.
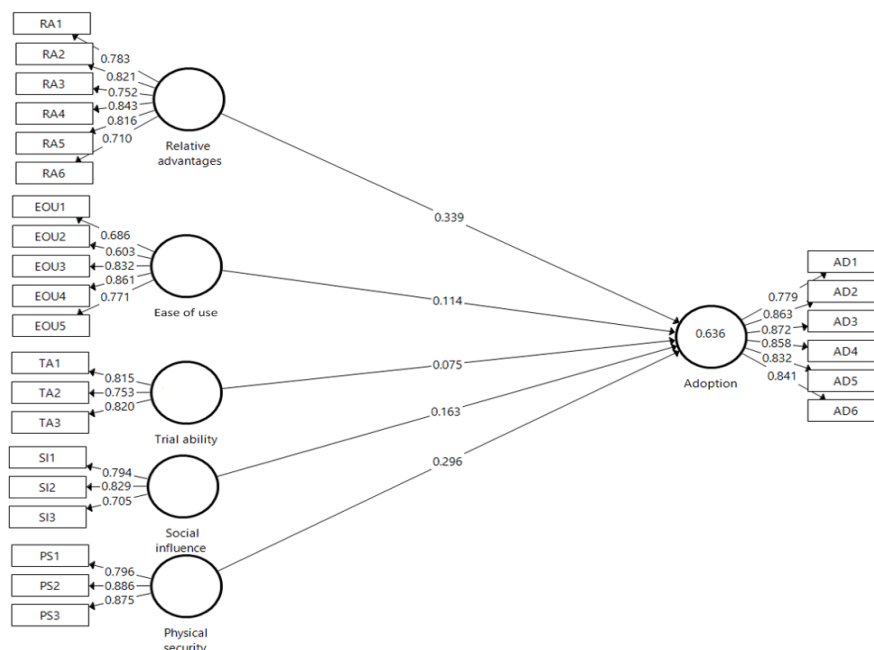

Figure 1. The research model.

Collectively, these factors play a pivotal role in shaping an individual's inclination to integrate e-hailing applications into their lifestyle. The research affirms the significance of H1 in influencing the acceptance of such applications. The user-friendly interface and intuitive navigation of the Grabcar app have effectively fostered its

adoption. Furthermore, the app's incorporation of features like real-time tracking and driver identification contributes to its popularity by addressing concerns related to personal safety, substantiating the impact of H2. Similarly, the study establishes the significance of H3 in influencing e-hailing app acceptance. The notion of relative advantage suggests that individuals are more inclined to embrace novel technologies if they perceive them to offer advantages such as convenience and reliability over conventional alternatives like taxis. In terms of social influence, H4 findings support the notion that peer experiences and reviews within social networks substantially steer individuals towards adopting new technologies. Additionally, the provision of trial opportunities, including initial user discounts, amplifies the app's allure, confirming the importance of H5.

5. CONCLUSIONS

This study provides information regarding the usage of the Grabcar application in Melaka. Samples were picked from users of the Grabcar application, including residents of Melaka and tourists older than 18 years old. The conclusion of the research is that relative advantages, ease of use, trialability, social influence, and physical security have a significant effect in the acceptability of Grabcar applications. The widely recognised significance of physical security and ease of use holds a pivotal role in driving the adoption of e-hailing services. This is consistent with research conducted in India, which found that tracking the taxi driver is one of the most attractive features of e-hailing, alongside flexible payment options, shorter waiting times, effortless booking, and advance fare (Dhawan & Yadav, 2018). This demonstrates that people's physical safety and their ease with technological advancements are high. When the system is secure and ease to use, individual embrace towards new devices. This preference is a testament to the growing affinity for new devices and services that prioritize both security and simplicity, mirroring an evolving societal stance towards technological integration. The TAM model utilised in this study is essential for harmonising middle-class everyday mobility habits. It is important for the formation of a new identity, using five factors - relative advantage, ease of use, trialability, social influence, and physical security of community acceptance of new applications of e-hailing services. In addition, this study successfully explained the acceptability of the Grabcar application by examining the use of innovative services to improve the efficiency of the transport system. The empirical insights garnered from this study hold potential to make meaningful contributions to the field of economics, particularly by shedding light on consumer inclinations towards adopting e-hailing and other digital services. These findings can serve as a valuable reference point for relevant authorities and marketers alike, offering guidance when engaging with diverse segments of tourists and adults. The knowledge extracted from this research has the capacity to inform strategic decisions and policy formulations that cater effectively to the preferences and behaviors of distinct consumer groups, thereby enhancing the overall efficiency and effectiveness of digital service provision and marketing efforts. Furthermore, extending its application to a broader population enhances comprehensive comprehension. This approach enables differentiation and adaptation of perspectives from influential groups with distinct identities, contributing to a more encompassing understanding within a wider context.The research outcomes affirm efforts aimed at promoting greater public transportation utilization among Malaysians. Consequently, it becomes imperative to fortify government initiatives to enhance the efficiency of the transportation system. To this end, both governmental and commercial sectors should implement a comprehensive incentive framework with a specific focus on engaging younger consumers. The utilization of Grabcar software stands as a strategic endeavor to sway public opinion towards embracing the dominant gig economy within the market. The Ministry of Transport, alongside government bodies like the Land Public Transport Commission, bears the responsibility of devising robust and streamlined strategies. These strategies should culminate in an integrated system that serves the community effectively, addressing the pressing issue of traffic congestion. This is especially vital during peak hours and in major cities where a significant portion of the populace relies on personal vehicles. Future studies might deviate from these findings to explore the qualitative dimensions of this research field, capturing the economic, social, and governance (ESG) facets and striving to attain Sustainable Development Goals (SDGs).

REFERENCES

Acheampong, M., Ertem, F. C., Kappler, B., & Neubauer, P. (2017). In pursuit of sustainable development goal (SDG) number 7: Will biofuels be reliable? *Renewable and Sustainable Energy Reviews*, 75, 927-937. https://doi.org/10.1016/j.rser.2016.11.074

Adriano, A. M. M., & Su, C. (2017). Out with the old, in with the new: A study on the vehicle hailing preferences of Filipino taxi riders based on participation intent. *International Journal of Real Estate Studies*, 11(1), 75-81.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211.

Auer, S., Nagler, S., Mazumdar, S., & Mukkamala, R. R. (2022). Towards blockchain-IoT based shared mobility: Car-sharing and leasing as a case study. *Journal of Network and Computer Applications*, 200, 103316. https://doi.org/10.1016/j.jnca.2021.103316

Baker, D. (2015). *The opportunities and risks of the sharing economy*. Testimony before the Subcommittee on Commerce, Manufacturing, and Trade of the U.S. House of Representatives Committee on Energy and Commerce, in the hearing on "The Disrupter Series: How the Sharing Economy Creates Jobs, Benefits Consumers, and Raises Policy Questions". Washington D.C.

Bernama. (2018). *Melaka recorded the arrival of more than 3.7 Million tourists.* Retrieved from Http://Www.Astroawani.Com/Berita-Bisnes/Melaka-Catat-Kedatangan-Lebih-8-73-Juta-Pelancong-183032

Bugembe, J. (2010). *Perceived usefulness, perceived ease of use, attitude and actual usage of a new financial management system: A case of Uganda national examinations board.* Doctoral Dissertation, Makerere University.

Changchun, G., Haider, M. J., & Akram, T. (2017). Investigation of the effects of task technology fit, attitude and trust on intention to adopt mobile banking: Placing the mediating role of trialability. *International Business Research*, 10(4), 77-91. https://doi.org/10.5539/ibr.v10n4p77

Chern, Y. X., Kong, S. Y., Lee, V. A., Lim, S. Y., & Ong, C. P. (2018). *Moving into cashless society: Factors affecting adoption of e-wallet.* Doctoral Dissertation, UTAR.

Chong, A. Y.-L., Darmawan, N., Ooi, K.-B., & Lin, B. (2010). Adoption of 3G services among Malaysian consumers: An empirical analysis. *International Journal of Mobile Communications*, 8(2), 129-149. https://doi.org/10.1504/ijmc.2010.031444

Chowdhury, S., & Ceder, A. A. (2013). Definition of planned and unplanned transfer of public transport service and user decisions to use routes with transfers. *Journal of Public Transportation*, 16(2), 1-20. https://doi.org/10.5038/2375-0901.16.2.1

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

Davis, F. D., & Venkatesh, V. (2004). Toward preprototype user acceptance testing of new information systems: Implications for software project management. *IEEE Transactions on Engineering Management*, 51(1), 31-46. https://doi.org/10.1109/tem.2003.822468

Dhawan, S., & Yadav, P. (2018). E-Cab hailing: A study on consumer behaviour. *ELK Asia Pacific Journal of Marketing and Retail Management*, 9(3), 1-17. https://doi.org/10.31511/eapjmrm.2018v09i03001

Du, H., Zhu, G., Lv, T., & Sun, X. (2012). Factors affecting purchase intention on 3G value-added services. *Jindal Journal of Business Research*, 1(2), 139-152. https://doi.org/10.1177/2278682113477448

Education Malaysia. (2022). *Statistics on international student applications for Malaysia's tertiary education.* Retrieved from https://educationmalaysia.gov.my/student-data/

Flores, O., & Rayle, L. (2017). How cities use regulation for innovation: The case of Uber, Lyft and Sidecar in San Francisco. *Transportation Research Procedia*, 25, 3756-3768. https://doi.org/10.1016/j.trpro.2017.05.232

Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. *Journal of Marketing Research*, 18(3), 382-388. https://doi.org/10.1177/002224378101800313

Geradin, D. (2015). Should uber be allowed to compete in Europe? And if so how? *Competition Policy International*, 15-11.

Jais, A. S., & Marzuki, A. (2018). *Proposing a muslim-friendly hospitality regulatory framework using systems approach.* Paper presented at the Proceedings of the 2nd Mini Symposium on Islamic Tourism 19th-20th April.

Jais, A. S., & Marzuki, A. (2020). E-hailing services in Malaysia: Current practices and future outlook. *Planning Malaysia*, 18(3), 128-141. https://doi.org/10.21837/pm.v18i13.780

Kadir, J. M. A., Zakaria, N. B., Abd Aziz, N. N., & Premananto, G. C. (2022). The nexus between media transparency and attitude for risk management during a disaster. *Asian-Pacific Management Accounting Journal*, 17(1), 203-221.

Karahanna, E., Straub, D. W., & Chervany, N. L. (1999). Information technology adoption across time: A cross-sectional comparison of pre-adoption and post-adoption beliefs. *MIS Quarterly: Management Information Systems*, 23(2), 183-213. https://doi.org/10.2307/249751

Karjaluoto, H., Püschel, J., Mazzon, J. A., & Hernandez, J. M. C. (2010). Mobile banking: Proposition of an integrated adoption intention framework. *International Journal of Bank Marketing*, 28(5), 389-409. https://doi.org/10.1108/02652321011064908

Kumar, A., & Dash, K. M. (2014). Factor exploration and multi-criteria assessment method (AHP) of multi-generational consumer in electronic commerce. *International Journal of Business Excellence*, 7(2), 213-236. https://doi.org/10.1504/ijbex.2014.059549

Lim, K., Yeo, S., Goh, M., & Gan, J. (2018). A study on consumer adoption of ride-hailing apps in Malaysia. *Journal of Fundamental and Applied Sciences*, 10(6S), 1132-1142.

Lin, M., & Dula, C. (2016). Grab Taxi: Navigating new frontiers. *Asian Management Insights*, 3(2), 40-45.

Ma, Q., & Liu, L. (2004). The technology acceptance model: A meta-analysis of empirical findings. *Journal of Organizational and End User Computing*, 16(1), 59-72. https://doi.org/10.4018/joeuc.2004010104

Mahendra, I., & Septiany, N. (2018). Analysis of the factors that influence student interest in using the grab application (case study: STMIK Nusa Mandiri students, Jakarta). *Jurnal Ilmu Pengetahuan Dan Teknologi Komputer*, 4(1), 9-16.

Nah, N. S. M., Ismail, S., Ramayah, T., Hassan, Z. R. A., & Hanaysha, J. R. (2019). Modelling the use of grabcar ridesharing services. *International Journal of Recent Technology and Engineering*, 8(2S2), 316-323. https://doi.org/10.35940/ijrte.b1055.0782s219

Noor, M. M. (2011). Determining critical success factors of mobile banking adoption in Malaysia. *Australian Journal of Basic and Applied Sciences*, 5(9), 252-265.

Nurjanah, S., Prabumenang, A. K. R., & Aditya, S. (2023). Understanding repurchase intention of online marketplace customers in Jakarta with trust as intervening. *Jurnal Dinamika Manajemen Dan Bisnis, 6*(2), 1-22.

Pahlevan, S. S., & Sharif, N. H. (2018). *Structural equation modeling with AMOS*. Tehran: Artin Teb.

Ramli, A. R., Kadir, J. M. A., Ismail, N., Othman, A. A., & Melo, P. C. (2021). Fuel subsidies, fuel consumption, and road transport emissions: A systematic review. *Environment-Behaviour Proceedings Journal, 6*(16), 275-281. https://doi.org/10.21834/ebpj.v6i16.2721

Reyes, A. Z. M., Hernandez, R. A. D., Cruz, J. M. L., Padre Juan, E. G., Marasigan, J. A. L., Balboa, I. K. P., & Wong, Y. H. (2023). *Implementing RFID technologies for automated guided vehicles in industry 4.0*. Paper presented at the In International Conference on Human-Computer Interaction (pp. 439-456). Cham: Springer Nature Switzerland.

Rogers, E. M. (1976). New product adoption and diffusion. *Journal of Consumer Research, 2*(4), 290-301. https://doi.org/10.1086/208642

Rogers, E. M., Singhal, A., & Quinlan, M. M. (2014). Diffusion of innovations. In An integrated approach to communication theory and research. In (pp. 432-448): Routledge.

Roh, M., & Park, K. (2019). Adoption of O2O food delivery services in South Korea: The moderating role of moral obligation in meal preparation. *International Journal of Information Management, 47*(1), 262-273.

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*(1-10), 43-48.

Sukumaran, T. (2015). *SPAD will clamp down on private vehicles used as taxis. The Star Online*. Retrieved from https://www.thestar.com.my/News/Nation/2015/06/30/SPAD-to-clamp-down-uber-grabcar?utm_source=dlvr.it&utm_medium=twitter

Tan, M., & Teo, T. (2000). Factors influencing the adoption of internet banking. *Journal of the Association for Information Systems, 1*(1), 1-44.

Teo, B.-C., Mustaffa, M. A., & Rozi, A. M. (2018). To grab or not to grab? Passenger ride intention towards e-hailing services. *Malaysian Journal of Consumer and Family Economics, 21*(1), 153-163.

Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science, 46*(2), 186-204. https://doi.org/10.1287/mnsc.46.2.186.11926

Venkatesh, V., Thong, J. Y., & Xu, X. (2012). Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. *Management Information Systems Quarterly, 36*(1), 157-178. https://doi.org/10.2307/41410412

Wan, W., Mohamad, A., Shahib, N. S., Azmi, A., Kamal, S. B. M., & Abdullah, D. (2016). A framework of customer's intention to use Uber service in tourism destination. *International Academic Research Journal of Business and Technology, 2*(2), 102-106.