GAE
GLOBAL ACADEMIC EXCELLENCE

ANALYSING FACTORS IMPACTING CUSTOMER SATISFACTION IN E-HAILING SERVICES: A DART MODEL STUDY IN MALAYSIA

Mao-Seng Ting[1*], Kok-Hooi Beh[2], Wi-Her Ooi[3], Cindy May-Wei Keng [4]

[1]   School of Business and Management, Han Chiang University College of Communication (HCUC), Malaysia
       Email: tingms@hju.edu.my
[2]   Vice Chancellor Office, Han Chiang University College of Communication (HCUC), Malaysia
       Email: khbeh@hju.edu.my
[3]   School of Business and Management, Han Chiang University College of Communication (HCUC), Malaysia
       Email: H2108413007@hcu.edu.my
[4]   School of Business and Management, Han Chiang University College of Communication (HCUC), Malaysia
       Email: H2108413010@hcu.edu.my
*   Corresponding Author

Article Info:

Abstract:

People travel to various destinations using different modes of transportation, with taxis being among the most popular. In recent years, a new alternative known as e-hailing has emerged, offering innovative solutions to address the shortcomings of traditional taxi services. This study aims to examine the factors influencing customer satisfaction in e-hailing services using the DART model, which includes four components: Dialogue, Access, Risk Assessment, and Transparency. To achieve the study's objectives, a structured questionnaire was developed and distributed via Google Forms to individuals with prior e-hailing experience. A judgemental non-probability sampling method was used and 205 responses were received and analysed. Data were analysed using SPSS version 27, applying four main statistical techniques: factor analysis, reliability analysis, descriptive statistics, and multiple regression analysis. The findings offer practical insights for e-hailing providers to better understand which factors most significantly influence customer satisfaction. Aligning their services with the DART model can enhance customer trust, retention, and competitive advantage in today's digital transport environment.

Keywords:

DART Model, E-Hailing, Customer Satisfaction, Malaysia

Introduction

The introduction of e-hailing in 2009 through Uber and in 2012 through Lyft led to a transformation in the global transportation industry, allowing e-hailing services to grow and gain popularity among the public. These services initially developed in metropolitan areas, where residents were more exposed to technological advancements and infrastructure development. At present, due to the increasing number of individuals using the internet, e-hailing services have successfully expanded worldwide. E-hailing has become a new trend in the business world, and the growing network of such services has resulted in more intense competition within the e-hailing market (Jenal et al., 2021).

In the past, people travelled to their destinations using a variety of modes of transportation. Taxi services were among the most popular options. However, traditional taxi services were often criticised for issues such as delays, poor vehicle conditions, refusal to fulfil customers' requests, low service quality, and exorbitant fares. In recent years, a new alternative known as e-hailing has emerged, offering innovative solutions to address these shortcomings (Melan et al., 2021). Since the introduction of e-hailing, demand for such services has continued to grow, as they provide customers with a more convenient and reliable travel experience. Customers are particularly drawn to the reasonable pricing and the systematic, user-friendly process of booking a ride. Furthermore, e-hailing services allow customers to be dropped off at their exact destination, adding to the overall convenience and increasing their preference for using these services (Idros et al., 2020). This growing trend is reflected in statistical data, with Malaysia's e-hailing industry projected to generate revenue of US$510 million (RM2.29 billion) by 2025 (Free Malaysia Today, 2025). In term of e-hailing user in Malaysia, the number of people using e-hailing services in Malaysia is expected to increase to nearly 260% from 1.67 million in 2017 to 6.0 million in 2023 (see Figure 1) and is projected to have approximately 11.76 million ride-hailing users by 2030 (Ubaidillah et al., 2019; Statista, 2025)
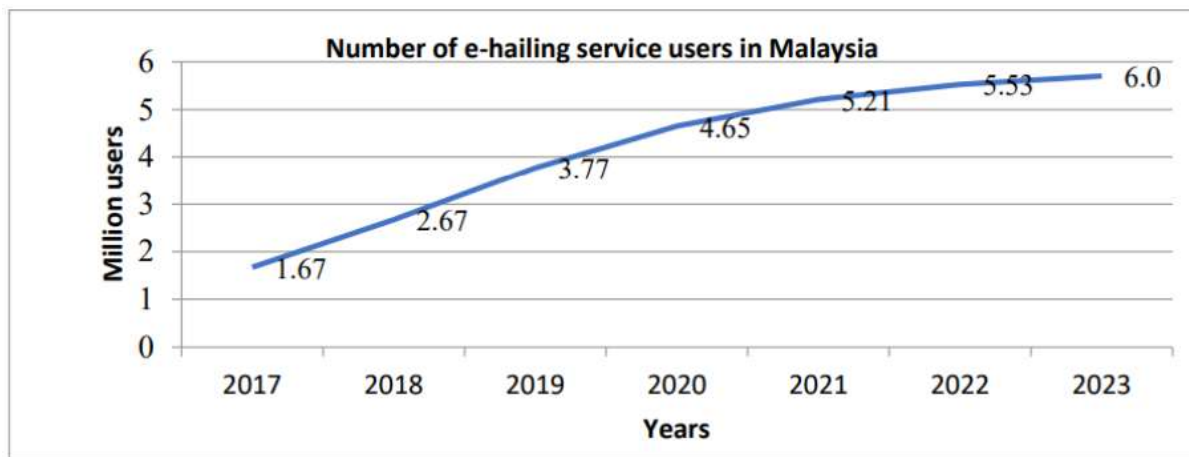

Figure 1 Number Of E-Hailing Service Users in Malaysia. Adopted From Ubaidillah Et Al (2019).

Despite the rapid growth and economic potential of Malaysia's e-hailing industry, several challenges continue to undermine its effectiveness and user trust. Firstly, service quality remains a major concern, particularly with regard to driver behaviour and communication barriers. Reports of rude, emotionally unstable, or unprofessional drivers have raised significant safety and satisfaction issues among passengers. Language barriers further

complicate interactions, often leading to misunderstandings and disputes (Fu, 2022). Secondly, accessibility issues limit the service's reach, especially among the elderly and rural populations. Many senior citizens are unfamiliar with smartphone technology, while rural users often face poor internet connectivity and limited driver availability in remote areas (Mohadis & Ali, 2014). Safety and security issues are becoming more prevalent. Reports of criminal activities including sexual assault, theft, and fraudulent schemes perpetrated by ride-hailing drivers have escalated, creating public anxiety especially among female passengers and undermining trust in these transportation services. (Malaymail, 2022; Mool, 2022; Riduan, 2022). Lastly, pricing transparency remains insufficient. Fares can fluctuate significantly during peak hours or late at night due to a lack of government regulation, often rendering rides unaffordable. Hidden fees, such as unreasonable cancellation charges, further contribute to user dissatisfaction (Cai, 2022). Collectively, these problems hinder the broader adoption and trust in e-hailing services in Malaysia. Addressing these issues is essential to ensure sustainable industry growth and enhance consumer confidence in digital mobility solutions. With competition intensifying among e-hailing service providers, it is crucial for companies to investigate the factors influencing customer satisfaction and implement appropriate improvements (Nor et al., 2021).

This study contributes to the understanding of customer satisfaction in the e-hailing industry by identifying key influencing factors using the DART (Dialogue, Access, Risk Assessment, and Transparency) model which remains underexplored in recent literature. It offers a timely and updated perspective, addressing a gap in current academic discourse. The findings are valuable for multiple stakeholders. For e-hailing companies, the study provides insights into customer expectations and areas for service improvement, enabling them to enhance user experience, retain existing users, and attract new ones. Improved satisfaction can also lead to increased revenue and a stronger brand reputation through repeat usage and positive word-of-mouth. For policymakers, this study highlights the potential link between rising e-hailing usage and higher corporate tax contributions, which could ultimately support national development and public welfare. Moreover, the research serves as a reference for scholars exploring consumer satisfaction within digital service platforms, particularly those seeking to apply the DART model in service quality studies. By examining customer satisfaction through a structured theoretical lens, this study adds depth to the academic understanding of digital transportation services and offers practical recommendations for enhancing e-hailing service delivery in Malaysia.

Literature Review

Customer Satisfaction towards E-hailing services
Customer satisfaction is one of the key factors that contribute to continued success in terms of increased profits and economic growth (Silalahi, 2017). It refers to customers' attitudes, feelings, and behaviours, which result from their various perceptions. Lee and Loi (2025) published findings on Grab Taxi, the region's most popular third-party taxi app. Their research examined the factors influencing customer satisfaction and how operators use these elements to gauge satisfaction levels. Customers who are satisfied with the service received from a company are likely to respond positively, repurchase, and demonstrate stronger brand loyalty. However, customer satisfaction is measured differently depending on individual expectations and needs, particularly in relation to cognitive criteria and perceived performance. Service providers must adapt their businesses by incorporating technology and improving supply chain efficiency when engaging with customers (Melan et al., 2021).

In Malaysia, e-hailing services have driven industry expansion and are regarded as a complement to the existing public transportation system. Today's customers have more information and options than ever before (Nor et al., 2021). Therefore, service providers must meet and continually improve their offerings to satisfy a wide range of customers, particularly in the e-hailing sector. Customer satisfaction is a key indicator of a company's past, present, and future performance. As a result, marketing specialists and researchers have long focused their efforts on this area. Customer satisfaction is defined as a customer's evaluation of a service or product as satisfactory or unsatisfactory, based on whether it meets or falls short of expectations (Kotler et al., 2024).

Customers will be satisfied when the products or services they purchase meet or exceed their expectations (Bismo et al., 2018). Customer satisfaction refers to the gap between expectations and actual performance and is defined as a customer's perception of the extent to which their needs have been fulfilled. It also represents a consumer's overall evaluation of a company's performance based on previous experiences. In the service industry, customer satisfaction is a critical metric for assessing service quality. Consequently, service quality is expected to have a significant impact on customer satisfaction (Nor et al., 2021).

According to Jin and Chen (2020), customer satisfaction is influenced by the interaction of expectations, perceived performance, and disconfirmation, as outlined in the Expectation–Confirmation Theory (ECT). ECT is a process-oriented framework that has been applied across various scientific disciplines. It suggests that customers form an initial expectation of a product or service before making a purchase. During the purchasing process, they develop a perception of the product or service, which they then compare to their initial expectations to determine the extent to which those expectations have been met. Ultimately, this comparison establishes the level of customer satisfaction.

Underlying Theory - DART Model
The underlying theory used in this research is the co-creation value model, also known as the DART model. The DART model serves as the foundation for constructing the e-hailing user satisfaction framework. It comprises four key elements: dialogue, access, risk assessment, and transparency. This model is employed as a framework for assessing and measuring customer satisfaction and engagement between businesses and customers (Jenal et al., 2021). According to Jenal et al. (2021), co-creation value is a theory that involves user participation in the development of services. It refers to the value created by companies in collaboration with users, integrating operations and available resources to evaluate the quality of services provided. The service received by users involves various activities and interactions. Co-creation interactions occur when businesses and users actively generate value, influence each other, and communicate directly through existing technological platforms.

The co-creation value theory originates from two key schools of thought. The first is Prahalad and Ramaswamy's theory, which is grounded in competition theory, and the second is Vargo and Lusch's theory, based on Service-Dominant (S-D) logic (Jin & Chen, 2020). Prahalad and Ramaswamy emphasise the joint creation of customer experiences as the foundation of value creation, with effective interaction being the key to realising this value. In contrast, Vargo and Lusch highlight value-in-use, arguing that customers generate value by integrating and applying resources during consumption. However, Jin and Chen (2020) propose that co-creation value is a combination of both perspectives, where all parties must collaborate to enhance the overall consumer experience.

Dialogue (D)

For both parties, dialogue is a process of communication, deep involvement, and readiness to act. It entails more than just listening to customers and involves mutual learning and engagement between two equal problem solvers, ultimately resulting in a loyal customer base (Idros et al., 2018). Mohamed et al. (2015) described dialogue as a process of interaction, interactivity, and the ability to act. This component emphasises the method of communication between service providers or system developers and system users. Such interaction enhances knowledge and experience on both sides. According to Jenal et al. (2021), dialogue is characterised by engagement, interactivity, and responsiveness. It involves not only listening to customers but also understanding their needs from emotional, cultural, and societal perspectives. This element highlights how companies and customers communicate.

In the research by Elias et al. (2021), dialogue is defined as interaction and two-way communication between businesses and e-hailing customers to understand their feelings, experiences, and problems, and to work collaboratively to resolve issues using various communication methods. Previous studies support the importance of dialogue in e-hailing services. Jenal et al. (2021) found that the implementation of dialogue within the DART model improved customer satisfaction. Similarly, Idros et al. (2020) emphasised that dialogue, as part of the value co-creation model, significantly influences customer satisfaction. Elias et al. (2021) also confirmed a strong relationship between dialogue and customer satisfaction in the context of e-hailing. Through two-way communication, e-hailing providers can better meet customer needs and expectations, thereby enhancing satisfaction. Based on this, the following hypothesis is proposed:

H1: Dialogue will positively influence customer satisfaction in e-hailing services in Malaysia.

Access (A)

Access begins with knowledge and tools. Through the company's platform, customers are able to access and manage data in the most efficient manner. They can gain access to various experiences tailored to their individual needs (Idros et al., 2020). According to Jenal et al. (2021), access starts with the provision of information and tools that enable customers to retrieve system data. Customers can utilise intermediary devices and appropriate sources to obtain accurate information. This element helps bridge the digital divide by allowing all users equal access to the same information. Similarly, Mohamed et al. (2015) stated that access involves a process beginning with information and equipment that facilitates user interaction with system data. Access is crucial to ensure that all relevant information is delivered through proper channels, and that its accuracy is maintained to support the continuity of user interaction. Furthermore, Elias et al. (2021) defined access as a platform that enables e-hailing consumers to obtain information and services easily, supported by interactive websites or mobile apps that are user-friendly and display essential information.

According to Jenal et al. (2021), the implementation of access within the DART model has improved customer satisfaction in e-hailing services. Idros et al. (2020) also highlighted that access, as part of the value co-creation model, has a significant influence on customer satisfaction. Likewise, Elias et al. (2021) found a strong relationship between access and customer satisfaction in the context of e-hailing. Access plays a crucial role in shaping user satisfaction by ensuring that information and services are readily available and easily accessible. Based on this, the following hypothesis is proposed:

H2: Access will positively influence customer satisfaction in e-hailing services in Malaysia.

Risk Assessment (R)

According to the article by Jenal et al. (2021), risk assessment refers to a user's behaviour and decision-making after being made aware of the potential dangers associated with using the service. While using the service, companies must inform users of any possible risks involved. The user then decides whether to continue using the service despite being aware of these risks. This element ensures users are informed about the hazards they may encounter if they choose to proceed. Similarly, Elias et al. (2021) explained that consumers must be prepared to accept and manage the risks if they wish to continue using e-hailing services. Companies are responsible for informing users about potential risks before, during, and after the service experience. Idros et al. (2020) also noted that "risk" refers to the possibility of endangering customers. Since customers play an active role in value co-creation, companies must clearly communicate the associated risks, and customers must be willing to manage and tolerate them.

Risk involves the probability of negative outcomes and reflects consumer preparedness to accept those risks. Mohamed et al. (2015) emphasised that users must be aware of the risks involved in using the system, which indirectly promotes its usage, as informed users are more confident and ready to engage. According to Jenal et al. (2021), the implementation of risk assessment within the DART model has improved customer satisfaction in e-hailing services. Likewise, Idros et al. (2020) found that risk assessment in the value co-creation model significantly influences customer satisfaction. Elias et al. (2021) also confirmed a significant relationship between risk assessment and customer satisfaction in the e-hailing context. When consumers are willing to continue using the service despite being aware of potential risks, risk assessment plays a critical role in shaping satisfaction. Based on this, the following hypothesis is proposed:

H3: Risk assessment will positively influence customer satisfaction in e-hailing services in Malaysia.

Transparency (T)

Transparency refers to the clarity and openness of information provided through the system for users' convenience. It ensures that information is easier to understand, allowing users to utilise the system more effectively. Transparent information is essential to facilitate user engagement with the system (Mohamed et al., 2015). According to Idros et al. (2020), transparency involves the mutual trust developed between customers and businesses. When a company provides accurate and openly accessible information, customers are more likely to trust the service. Elias et al. (2021) stated that trust between consumers and e-hailing firms is built through efforts to protect customer privacy and ensure the delivery of reliable information. Similarly, Jenal et al. (2021) noted that transparency involves a company's strategies and efforts to gain users' trust and confidence. By sharing detailed and accurate information, including pricing, costs, and earnings, companies aim to reassure users of the reliability and comprehensiveness of their services.

Jenal et al. (2021) reported that implementing transparency within the DART model positively affects customer satisfaction in e-hailing services. Idros et al. (2020) identified transparency as a key determinant of customer satisfaction, while Elias et al. (2021) confirmed a significant relationship between transparency and satisfaction in the e-hailing context. Transparency plays

a crucial role in influencing customer satisfaction, as e-hailing firms strive to protect users' privacy and ensure service integrity. Based on this, the following hypothesis is proposed:

H4: Transparency will positively influence customer satisfaction in e-hailing services in Malaysia.

Research Framework

This research focuses on exploring the factors that influence customer satisfaction in e-hailing services. Based on previous studies, four key factors are identified as having a positive impact on customer satisfaction: dialogue, access, risk assessment, and transparency. The research model of this study is illustrated in Figure 1.
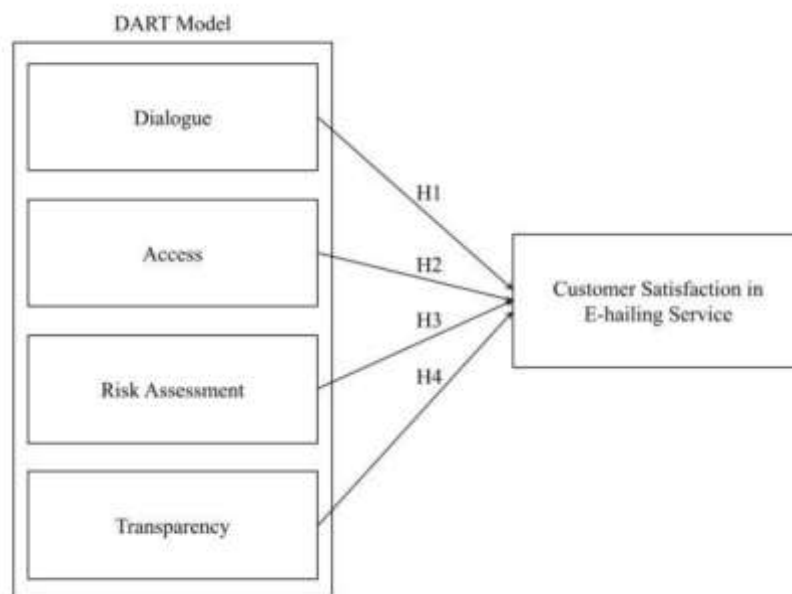

Figure 1: Research Model for Dialogue, Access, Risk Assessment, Transparency and Customer Satisfaction In E-Hailing Service
Source: self-made

Research Methodology

This study adopts a quantitative research methodology, also known as survey research, involving the use of structured questionnaires with predetermined response options to collect data from a large number of respondents. It aims to gather specific information based on a formalised, systematic process using numerical data (Basias & Polalis, 2018). Additionally, causal research is employed to examine cause-and-effect relationships between variables (Sekaran & Bougie, 2019). The target population consists of Malaysian consumers aged 18 and above who have prior experience using e-hailing services. This criterion ensures relevant and reliable responses aligned with the study's focus on customer satisfaction in the e-hailing industry. A non-probability sampling method was used, specifically convenience sampling, due to its cost-effectiveness and ease of data collection (Sekaran & Bougie, 2019). Respondents were selected based on their availability and willingness to participate. According to rule of thumb guidelines (Hill, 1988), the minimum sample size was determined to be at least 50, as the study includes four independent and one dependent variable.

Data were collected using an online survey distributed via Google Forms through platforms such as WhatsApp, Instagram, and Messenger. This method was chosen for its efficiency, accessibility, and real-time data availability. Google Forms was used for its cost-effectiveness and ability to streamline the data collection process. For data analysis, the study applied four statistical techniques: descriptive analysis, factor analysis, reliability analysis, and multiple regression analysis. These analyses were conducted using IBM SPSS version 27, which allowed for systematic testing of the hypotheses and interpretation of findings. This comprehensive methodology ensures that the research is data-driven, reliable, and well-aligned with its objective to identify key factors influencing customer satisfaction in Malaysia's e-hailing services.

Data Analysis and Result

Statistics of Respondents' Profile

The respondents' demographic data were analysed using descriptive statistics. Table 1 provides an overview of the respondents' demographic information. The data were collected through an online survey conducted via the Google Form platform. The demographic information includes age, nationality, experience with using e-hailing services, gender, ethnicity, and education level. A total of 350 survey forms were distributed online, and 205 completed responses were used for data analysis.

Table 1: Profile Respondents

Demographic Variables		Frequency	Percentage (%)
Age	18-25 years old	158	77.1
	26-41 years old	39	19.0
	42-57 years old	8	3.9
	Total	**205**	**100**
Nationality	Malaysian	205	100
	Total	**205**	**100**
Have you had experience e-hailing service before?	Yes	205	100
	Total	**205**	**100**
Gender	Male	73	35.6
	Female	132	64.4
	Total	**205**	**100**
Ethnicity	Malay	16	7.8
	Chinese	182	88.8
	Indian	7	3.4
	Total	**205**	**100**
Education Level	High school or lower	7	3.4
	Diploma/College level	47	22.9
	Bachelor Degree	147	71.7
	Master Degree	3	1.5
	Doctoral Degree	1	0.5
	Total	**205**	**100**

Source: self-made

Based on Table 1, the majority of respondents were in the 18–25 age group, accounting for 77.1% of the total, while the 26–41 and 42–57 age groups contributed 19.0% and 3.9% respectively. All respondents were Malaysian and had prior experience using e-hailing

services. Female respondents made up the majority (64.4%) of the sample, while male respondents accounted for 35.6%. In terms of ethnicity, the majority of respondents were Chinese (88.8%), followed by Malay (7.8%) and Indian (3.4%) participants. Regarding education level, respondents holding a bachelor's degree formed the largest group, representing 71.7% of the total, followed by those with a diploma or college-level education, who made up 22.9% of the sample.

Factor Analysis
Factor analysis involves expressing the values of observed and correlated variables as functions of several underlying factors to identify the most significant ones (Sekaran & Bougie, 2019). There are two main types of factor analysis: Confirmatory Factor Analysis (CFA) and Exploratory Factor Analysis (EFA). CFA is used when the structure of the variables is based on existing theories or previous research, whereas EFA is employed to uncover the underlying structure without a predetermined number of factors. Since all measurement items in this study are adapted from the underlying theory, the DART model, and established studies, CFA is deemed appropriate for validating the measurement model. The measurement items for the independent variables are adapted from past studies, in which the variables have been clustered into four distinct factors, namely Dialogue (D), Access (A), Risk Assessment (R), and Transparency (T). Meanwhile, the dependent variable, Customer Satisfaction (CS), is also adapted from previous studies and has already been clustered into a single factor.

To conduct factor analysis, the researcher first performed Principal Component Analysis (PCA), a statistical technique that applies an orthogonal transformation to convert a set of potentially correlated variables into a set of linearly uncorrelated variables known as principal components. Following this, Varimax rotation was applied to enhance interpretability (Sekaran & Bougie, 2019). In the principal component extraction and Varimax rotation process, the number of factors was set to four to align with the proposed research framework.

To validate whether the measurement items accurately reflect the intended constructs, the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity were applied. The KMO assesses the adequacy of the sample for factor analysis, with values closer to 1 indicating stronger suitability, while Bartlett's Test examines whether the correlation matrix significantly differs from an identity matrix, thereby indicating sufficient correlations among variables (Bartlett, 1954; Kaiser, 1974). In this study, a KMO value of at least 0.6 and a Bartlett's Test significance level below 0.05 were used as benchmarks. All independent variables were tested collectively, while the dependent variable was assessed individually. Tables 2 and 3 present the results of the factor analysis for both the independent and dependent variables.

In Table 2, the factor loading scores for all measurement items exceed 0.4, meeting the minimum cut-off value recommended by Hair et al. (2017), except for Transparency 6 (T6), which was subsequently removed. Hair et al. (2017) advise using a 0.4 cut-off value, provided the average variance extracted (AVE) is greater than 0.5. Only the highest factor loading scores were reported. In addition, Transparency 5 (T5) was removed because it loaded into a different cluster, thereby disrupting the Varimax rotation process. Regarding the KMO and Bartlett's Test of Sphericity, the factor analysis of independent variables yielded a KMO score of 0.840, which is above the acceptable cut-off of 0.6 (Kaiser, 1974). Bartlett's Test result was below 0.05, indicating that the data were appropriate for factor analysis (Bartlett, 1954).

As shown in Table 3, the factor loading scores for all measurement items for the dependent variable also exceeded 0.4, satisfying the minimum threshold recommended by Hair et al. (2017). The KMO value was 0.718, which is above the acceptable threshold of 0.6 (Kaiser, 1974). Additionally, Bartlett's Test result was below 0.05, further confirming the data's suitability for factor analysis (Bartlett, 1954).

Table 2: Factor Analysis for All Independent Variables

Item	Component			
	1	**2**	**3**	**4**
Dialogue 1 (D1)			0.732	
Dialogue 2 (D2)			0.766	
Dialogue 3 (D3)			0.727	
Dialogue 4 (D4)			0.496	
Dialogue 5 (D5)			0.546	
Dialogue 6 (D6)			0.623	
Access 1 (A1)	0.505			
Access 2 (A2)	0.739			
Access 3 (A3)	0.783			
Access 4 (A4)	0.752			
Access 5 (A5)	0.756			
Access 6 (A6)	0.507			
Access 7 (A7)	0.512			
Risk Assessment 1 (R1)				0.740
Risk Assessment 2 (R2)				0.742
Risk Assessment 3 (R3)				0.646
Risk Assessment 4 (R4)				0.468
Risk Assessment 5 (R5)				0.579
Transparency 1 (T1)		0.401		
Transparency 2 (T2)		0.781		
Transparency 3 (T3)		0.801		
Transparency 4 (T4)		0.838		
Transparency 5 (T5) - deleted	0.414			
Transparency 6 (T6) – deleted	0.391			
Transparency 7 (T7)		0.413		
Transparency 8 (T8)		0.482		
KMO				0.840
Barlett's Test of Sphericity				<0.05

Note: Item T5 and T6 were deleted due to the wrong Varimax rotation process and low factor loading value respectively.

Source: self-made

Table 3: Factor Analysis for Dependent Variable

Item	Component
Customer Satisfaction 1 (CS1)	0.898
Customer Satisfaction 2 (CS2)	0.872
Customer Satisfaction 3 (CS3)	0.851
KMO	**0.718**
Barlett's Test of Sphericity	<0.05

Source: self-made

Based on the result from the factor analysis (see Table 2 and 3), both T5 and T6 were deleted in this study. Table 4 shows the summary of all independent variables, namely Dialogue (D), Access (A), Risk Assessment (R), Transparency (T) and dependent variable namely Customer Satisfaction (CS) and their items were retained.

Table 4 Summary of Independent and Dependent Variables

Independent Variables	Item Retained
Dialogue (D)	D1, D2, D3, D4, D5, D6
Access (A)	A1, A2, A3, A4, A5, A6, A7
Risk Assessment (R)	R1, R2, R3, R4, R5
Transparency (T)	T1, T2, T3, T4, T7, T8
Dependent Variables	**Item Retained**
Customer Satisfaction (CS)	CS1, CS2, CS3

Note: Item T5 and T6 were deleted due to the wrong Varimax rotation process and low loading value respectively.
Source: self-made

Reliability Analysis

In reliability analysis, assessing Cronbach's Alpha value is applied. According to Kline (1999), the Cronbach's Alpha value of all the variables must meet the minimum acceptable limit of 0.7. Based on the reliability test result in Table 5, all the significant variables have Cronbach's Alpha above the cut-off value of 0.7. Hence, the items retained for each of the variables proceed for multiple regression analysis in the next section.

Table 5 Summary of the Reliability Analysis for the Major Variables

Variable	Number of Items	Number of Items Dropped	Number of Items Shifted	Cronbach's Alpha
Dialogue (D)	6	0	0	0.819
Access (A)	7	0	0	0.863
Risk Assessment (R)	5	0	0	0.746
Transparency (T)	6	2	0	0.818
Customer Satisfaction (CS)	3	0	0	0.844

Source: self-made

Multiple Regression Analysis (MRA)

Multiple regression analysis was conducted to test the proposed hypotheses outlined in the earlier section. One regression model was developed to examine the relationship between the

dependent and independent variables. As discussed previously, four hypotheses were proposed in this study. Based on the results presented in Table 6, 42.5% (R^2 = 0.425) of the variation in Customer Satisfaction (CS) is explained by the four independent variables: Dialogue (D), Access (A), Risk Assessment (R), and Transparency (T). This indicates a weak model fit. According to Hair et al. (2017), a Variance Inflation Factor (VIF) value below 3.33 suggests that multicollinearity is not a significant concern. In this study, all VIF values were below 3.33, indicating that multicollinearity is not a serious issue.

Regarding the regression results, Dialogue (D) has a beta value of 0.233 and a t-value of 3.197, indicating a significant relationship with Customer Satisfaction (CS). Therefore, Hypothesis 1 is accepted. Similarly, Access (A) has a beta value of 0.176 and a t-value of 2.579, showing a positive and significant relationship with Customer Satisfaction at the 5% significance level, thus supporting Hypothesis 2. Risk Assessment (R) demonstrates a beta value of 0.309 and a t-value of 4.548, indicating a significant relationship at the 1% significance level; hence, Hypothesis 3 is supported. Lastly, Transparency (T) has a beta value of 0.195 and a t-value of 2.586, also indicating a positive and significant relationship with Customer Satisfaction. Therefore, Hypothesis 4 is supported as well.

Table 6 Result of Multiple Regression Analysis

Independent Variables	Dependent Variable – Customer Satisfaction (CS)		VIF Value
	Beta	**t-value/p-value**	
Dialogue (D)	0.233	3.197***	1.668
Access (A)	0.176	2.579**	1.770
Risk Assessment (R)	0.309	4.548***	1.258
Transparency (T)	0.195	2.586***	1.664
R square	0.425		
R square change	0.421		

Note: *$p<0.1$, **$p<0.05$, ***$p<0.01$
Source: self-made

Findings and Implication
In this study, Hypothesis H1 is supported, indicating that dialogue positively influences customer satisfaction in e-hailing services. This result aligns with the findings of Jenal et al. (2021), who stated that the implementation of dialogue in the DART model within e-hailing services improved customer satisfaction. It is also consistent with Idros et al. (2020), who noted that dialogue in the DART model, also known as the value co-creation model, has a significant impact on customer satisfaction. Furthermore, it supports the findings of Elias et al. (2021), who confirmed a significant relationship between dialogue and customer satisfaction in e-hailing services.

To facilitate communication between users and e-hailing firms, companies should ensure that dialogue is always accessible by offering various communication methods. For example, implementing an Automated Virtual Assistant (AVA) to handle common customer enquiries can improve the efficiency of customer service. Additionally, a simple feedback and rating system should be incorporated, enabling users to easily provide input to the company. Multiple communication channels such as live chat, email, and phone support should also be made available to accommodate different user preferences. Moreover, e-hailing companies should invest in training frontline staff in empathetic communication skills to improve dialogue

quality. Clear, respectful, and responsive interactions foster trust and create a more personalised user experience. When users feel heard and understood, their satisfaction levels increase, leading to higher user retention and more favourable word-of-mouth recommendations. This human-centric approach, combined with digital tools, can enhance the quality of engagement and strengthen long-term customer relationships.

Following that, H2 is also accepted, indicating that access has a positive relationship with customer satisfaction in e-hailing services. This finding aligns with Jenal et al. (2021), who reported that the implementation of access in the DART model improved customer satisfaction in e-hailing services. Similarly, Idros et al. (2020) highlighted that access within the DART model has a significant influence on customer satisfaction, while Elias et al. (2021) also confirmed a strong relationship between access and customer satisfaction in the e-hailing context.

E-hailing firms should ensure that access is consistently available by providing comprehensive and user-friendly information facilities within their platforms. This includes clear navigation, accessible fare estimates, driver details, and real-time tracking. In addition, companies should employ skilled and professional technical staff to promptly address and resolve system malfunctions to avoid disruptions that could negatively affect the user experience. Another implication is the importance of designing mobile apps and websites that are inclusive and accessible to all users, including those with disabilities or limited digital literacy. This may involve features such as multilingual support, larger fonts, voice commands, or simplified user interfaces. Improving digital accessibility not only increases user satisfaction but also broadens the customer base by including previously underserved populations.

Next, H3 is supported, indicating that risk assessment positively influences customer satisfaction in e-hailing services. This finding aligns with Jenal et al. (2021), who stated that the implementation of risk assessment in e-hailing services contributed to improved customer satisfaction. It also corresponds with the findings of Idros et al. (2020) and Elias et al. (2021), who both confirmed a significant relationship between risk assessment and customer satisfaction in the context of e-hailing services.

E-hailing companies must ensure that users are aware of potential risks or consequences associated with using the service. For instance, companies can clearly outline all potential risks in the 'Terms & Conditions' section for users to review before proceeding. Additionally, firms should implement proactive strategies such as conducting regular system maintenance and updates to minimise the risk of technical failures, thereby reinforcing user trust and confidence in the platform. Another important implication is the implementation of visible safety measures, such as emergency contact features, ride-sharing with real-time tracking, and verified driver profiles. These tools not only reduce perceived risk but also enhance users' sense of security during the ride. When customers feel protected, their overall satisfaction with the service increases, leading to greater trust and loyalty.

Finally, H4 is supported, indicating that transparency has a positive impact on customer satisfaction in e-hailing services. This finding is consistent with the study by Jenal et al. (2021), which highlighted that greater transparency in e-hailing services enhances customer satisfaction. Similarly, the results are in line with Idros et al. (2020) and Elias et al. (2021), who both confirmed a significant relationship between transparency and customer satisfaction in the context of e-hailing.

The positive relationship between transparency and customer satisfaction suggests that e-hailing service providers should integrate transparency as a core component of their service strategy. By clearly displaying fare calculations, providing real-time ride tracking, and sharing detailed driver profiles, companies can build customer trust and reduce perceived risks. This increased clarity helps users feel more secure and informed, leading to higher satisfaction levels. When customers feel that the service is honest and open, they are more likely to remain loyal and recommend the platform to others. Therefore, transparency can serve as a competitive advantage in a crowded e-hailing market. The strong association between transparency and customer satisfaction also highlights the need for regulatory bodies and industry stakeholders to develop formal guidelines and standards promoting transparency in e-hailing services. These could include mandatory disclosures on fare structures, safety protocols, and complaint resolution mechanisms. Establishing such standards would not only protect consumer interests but also create a level playing field for service providers. Clear, enforceable policies can ensure that all platforms operate with accountability and customer-focused practices. Ultimately, these efforts would strengthen public confidence in e-hailing services and support the sustainable growth of the industry.

Recommendation and Conclusion

Based on the limitations faced in this study, three key recommendations are proposed for future research. Firstly, researchers are encouraged to extend the data collection period beyond three months. A longer duration would allow for broader outreach and engagement, resulting in a larger and more diverse sample size. This would, in turn, enhance the accuracy and generalisability of the research findings. Secondly, future researchers should consider seeking sponsorship, particularly from relevant industry players such as e-hailing companies like Grab. With sponsorship, more resources can be allocated for logistics, outreach, and possibly incentives for respondents. In return, sponsors can gain valuable insights from the findings to improve their services. Lastly, to address the issue of non-responsiveness due to unfamiliarity with digital forms, it is recommended to prepare a short tutorial video. This video should demonstrate how to access, navigate, and complete the questionnaire using platforms such as Google Forms. Sending the video along with the questionnaire link may increase participation rates, especially among less tech-savvy respondents. Collectively, these strategies aim to improve data quality, enhance participation, and promote industry-research collaboration in future studies on e-hailing services.

The purpose of this study is to determine the factors affecting the customer satisfaction in e-hailing service. The underlying theory used for this study is the DART model. Online surveys are used for data collection in this research. Online surveys are employed in this study since they can improve productivity and save time. The information gathered through online surveys is immediately accessible and is simply transferable to software for data analysis. A Google Form is used to generate an online survey, and the link is delivered to responders via social media channels including WhatsApp, Instagram, and Messenger. By determining the customer satisfaction, e-hailing companies can also locate areas for improvement. In this regard, this study can serve as a resource for e-hailing companies in order to keep up with the growth of the transport sector in Malaysia.

Acknowledgement

References

Bartlett, M.S. (1954). A note on the multiplying factors for various chi square approximation. *Journal of Royal Statistical Society, 16* (B), 296-298.

Basias, N., & Pollalis, Y. (2018). Quantitative and qualitative research in business & technology: Justifying a suitable research methodology. *Review of Integrative Business and Economics Research, 7*, 91-105.

Bismo, A., Sarjono, H., & Ferian, A. (2018). The effect of service quality and customer satisfaction on customer loyalty: A study of grabcar services in Jakarta. *Pertanika Journal of* Social *Sciences & Humanities, 26*, 33-47.

Cai, J.L. (2022, May 19). Taxi riders increase by 40% due to high e-hailing charges during peak hours. China Press. Retrieved from https://www.chinapress.com.my/?p=2972514

Elias, N. F., Jenal, R., Mohamed, H., Hanawi, S. A., Mohd Amin, H., Yeganegi, R., & Mohd Idros, N. A. N. B. (2021). e-Service Innovation Through Malaysian Consumer Perspectives: Case Studies of e-Hailing and e-Hypermarket. *Business Innovation with New ICT in the Asia-Pacific: Case Studies*, 305-323.

Free Malaysia Today (2025, January 25). From convenience to chaos: the unseen struggles of Malaysia's e-hailing drivers. Retrieved from https://www.freemalaysiatoday.com/category/opinion/2025/01/23/from-convenience-to-chaos-the-unseen-struggles-of-malaysias-e-hailing-drivers

Fu, S. Y. (2022, May 6). The cost of private-hire taxis in Singapore has doubled. People interviewed: The increase is outrageous. Oriental Daily. Retrieved from https://www.orientaldaily.com.my/news/international/2022/05/06/484624

Hair J. F. Jr., William C. Black, Barry J. Babin , Rolph E. Anderson (2017). *Multivariate Data Analysis*, 8th ed. England: Pearson Education Limited.

Hill, R. (1998). What sample size is "enough" in internet survey research. *Interpersonal Computing and Technology: An electronic Journal for the 21st Century, 6*(3-4), 1-12.

Idros, N. A. N. M., Mohamed, H., & Jenal, R. (2018). Determinant factors of customer satisfaction for e-hailing service: A preliminary study. *International Conference of Reliable Information and Communication Technology*, 803-811.

Idros, N. A. N. M., Mohamed, H., & Jenal, R. (2020). Customer Satisfaction of E-hailing: An Item Development. *International Journal of Management, 11* (11), 1157-1165.

Jenal, R., Mohamed, H., Hawani, S. A., Idros, N. A. N. M. (2021). User satisfaction index of e-hailing services based on co-creation value. *Journal of Theoretical and Applied Information Technology, 99*(10), 2445-2457.

Jin, R., & Chen, K. (2020). Impact of value cocreation on customer satisfaction and loyalty of online car-hailing services. *Journal of Theoretical and Applied Electronic Commerce Research, 16*(3), 432-444.

Kaiser, H. (1974). An index of factorial simplicity. *Psychometrika, 39* (3), 1-6.

Kline, T. J. (1999). The team player inventory: Reliability and validity of a measure of predisposition toward organizational team-working environments. *Journal for Specialists in Group Work, 24*(1), 102-112

Kotler, P., Keller, K. L., Chernew, A. (2024). *Marketing management* 17/e. England: Pearson Education Limited.

Lee, N. T. & Loi, E. (2025, April 3). Grab's entry into taxi market allows it to gain reliable supply of drivers, vehicles: Experts. Retrieved from https://www.straitstimes.com/singapore/transport/grabs-entry-into-taxi-market-allows-it-to-gain-reliable-supply-of-drivers-vehicles-experts

Malaymail. (2022, May 19). E-hailing driver arrested for allegedly outraging modesty of woman. Malay Mail. Retrieved from https://www.malaymail.com/news/malaysia/2022/05/19/e-hailing-driver-arrested-forallegedly-outraging-modesty-of-woman/7723

Melan, M., Osman, N. H., Prapinit, P., Uttayaratana, N., & Hassan, M. G. (2021). Comparative Study on the Customer Satisfaction towards the Services of E Hailing in Malaysia and Thailand. *Journal of Tianjin University Science and Technology, 54*(12), 141-152.

Mohadis, H. M., Ali, N. M. (2014). A Study of Smartphone Usage and Barriers Among the Elderly. *2014 3rd International Conference on User Science and Engineering (i-USEr)*, 109-114.

Mohamed, H., Elias, N. F., Mukhtar, M., Yahya, Y., Hanawi, S. A., Jenal, R., & Zurita Wan Ahmad, W. A. (2015). Model Nilai Cipta-Sama dalam Sistem Pengukuran Prestasi. *Jurnal Pengurusan, 45*, 155-163.

Mool, J. A. (2022, May 12). Fraud: E-hailing driver charged. Daily Express. Retrieved from https://www.dailyexpress.com.my/news/192264/fraud-e-hailing-driver-charged/

Nor, M. N. M., Sabri, S. M., & Isa, N. F. M. (2021). E-Hailing Service Satisfaction: A Case Study of Students in a Higher Education Institution in Perlis, Malaysia. *Jurnal Intelek,16*(2), 138-150.

Riduan, J. (2022, March 31). Cops hunt for e-hailing driver who tried to molest, rob passenger. New Strait Times. Retrieved May 21, 2022, from https://www.nst.com.my/news/crime-courts/2022/03/784930/cops-hunt-e-hailing-driverwho-tried-molest-rob-passenger

Sekaran, U., & Bougie, R. (2019). *Research methods for business: A skill building approach*, 8th Edition. United Kingdom, UK: John Wiley & Sons.

Silalahi, S. L. B., Handayani, P. W., & Munajat, Q. (2017). Service quality analysis for online transportation services: Case study of GO-JEK. *Procedia Computer Science, 124*, 487-495.

Statista (2025). Ride-hailing – Malaysia. Retrieved from https://www.statista.com/outlook/mmo/shared-mobility/ride-hailing/malaysia