

The Relationship Between E-Hailing Service Quality and User Satisfaction Among Johor, Malaysia

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Abstract

E-hailing services which provide accessibility and convenience have grown to be a major form of transportation in Johor, Malaysia. However, there are gaps in knowledge of how e-hailing service quality and user satisfaction relate to one another, particularly when it comes to aspects like comfort, price, safety, and accessibility. In addition to analysing the relationship between e-hailing service quality and user satisfaction in Johor, this study attempts to determine the elements that affect user satisfaction. Structured questionnaires were used to gather quantitative data from 384 respondents, and SPSS was used for descriptive statistics, reliability, and correlation analysis. According to the findings, price has a minor effect on user satisfaction, but comfort, safety, and accessibility all considerably affect to user satisfaction. Additionally, the quality of e-hailing services and overall user satisfaction are strongly correlated by according to the results. The study suggests more research into other aspects including technology innovation and environmental effect and highlights the significance of ongoing service quality improvement to raise users satisfaction. To give a more comprehensive picture of the dynamics of e-hailing services, future studies should also look at demographic and geographical differences.

1. Introduction

Transportation is essential for transporting commodities from a destination to another destination through many modes such as road, rail, air, and water. Businesses aim to reduce expenses associated with shipping size, method, and distance. In Johor, Malaysia has improved its transportation infrastructure, including e-hailing services such as GrabCar, Uber, MyCar, and Maxim, which are popular because to their price, convenience, and flexibility (APAD, 2024; Daphine Yeo Hooi Ann *et al.*, 2022). E-hailing platform relying on GPS and internet connectivity to provide reliable service, giving them a substantial edge over traditional taxis and public transportation. GrabCar, as a market leader, prioritises customer satisfaction, which is critical to long-term success. Customer satisfaction illustrates the relationship between expectations and service performance, which influences loyalty and market sustainability (Noraqila Balqis binti Norhisham *et al.*, 2022; Chia Kar Man *et al.*, 2019). However, there is limited research study on the relationship between e-hailing service quality and user's satisfaction among Johor, Malaysia. Addressing this gap is crucial for GrabCar's long-term success, as its shared economy model is based on providing high-quality service to customers and stakeholders (Ahamd Fadzil bin Mohamad, 2021).

E-hailing services in Johor, Malaysia, are becoming increasingly popular, particularly among young consumers, although factors like as accessibility, price, comfort, and safety have a considerable influence on customer satisfaction. Reports emphasise safety risks such as driver misbehaviour, harassment, accidents, and

robberies, all of which damage consumer confidence and comfort (Mohamad Niza Md Nor *et al.*, 2021; Lee Mei Ru, 2022). Despite these problems, there has been little study into the relationship between service quality and user satisfaction in Malaysia's ride-hailing industry. This study seeks to fill a research vacuum by investigating how was the service quality effects user satisfaction in Johor, Malaysia specifically across five service quality characteristics (Chia Kar Man *et al.*, 2019). This study focusses on e-hailing service towards users in Johor, Malaysia, with the goal of identifying the important elements impacting their satisfaction as well as the relationship between service quality and user satisfaction. Johor is chosen because it is the second most populated state in Malaysia. To guarantee trustworthy and relevant insights, data will be collected using online surveys targeting a wide range of demographic groups. The study focusses on understanding user satisfaction with e-hailing services in Johor, Malaysia, by analysing primary empirical data to determine the elements that influence user experiences.

2. Literature Review

2.1 Overview of E-Hailing

E-hailing is the process of booking transportation services, such as automobiles or taxis, electronically using computers or mobile devices. The technique uses GPS technology to provide exact location information, allowing riders to quickly schedule trips using smartphone apps. Collaborations between app developers and transportation providers have resulted in the development of e-hailing services, with famous worldwide examples including Uber and Ola (Ahmad Fadzil bin Mohamad, 2021). In Malaysia, e-hailing services like GrabCar and MyCar allow customers to schedule and pay for trips using smartphone apps supplied by Transportation Network Companies (TNCs). E-hailing, a type of public transportation that uses private automobiles, has grown in popularity in the digital era because to its simplicity, convenience, and broad internet connections (Daphine Yeo Hooi Ann *et al.*, 2022).

2.2 User Satisfaction

User satisfaction refers to a person's assessment of how well a product or service satisfies their expectations. The disconfirmation hypothesis states that pleasure occurs when expectations are positively surpassed, and discontent happens when expectations are negatively exceeded. User satisfaction is vital for evaluating product or service experiences, particularly for technology-based organisations. The balance between consumer expectations and actual experiences influences satisfaction, which has a substantial impact on a company's long-term success or failure (Azuati Mahmud *et al.*, 2022).

2.2.1 User Satisfaction towards E-Hailing

In Malaysia, e-hailing services have improved public transit and boosted business growth. User satisfaction is an important measure of service quality because pleased customers are more likely to return and recommend services through word-of-mouth, which fosters trust and business growth. Besides that, meeting or surpassing user expectations has a direct influence on satisfaction, providing organisations with a competitive advantage and growing market share (Mohamad Niza Md Nor *et al.*, 2021; Daphine Yeo Hooi Ann *et al.*, 2022). User satisfaction is critical for e-hailing services because it addresses customers' demands, improves service quality, and measures the advantages these services give. User satisfaction not only increase repeat business, but they also improve a company's reputation and long-term success.

2.2.2 Comfort and User Satisfaction towards E-Hailing

Passenger comfort has a huge impact on consumer satisfaction with e-hailing services. Customer system functionality, seating configurations, vehicle cleanliness, and the driver's demeanour are all important considerations. Cleanliness and interior design, particularly during the COVID-19 epidemic, were discovered to be crucial for passenger comfort and pleasure. Regular washing and sanitisation of cars is required to fulfil hygienic standards (Nur Afiqah binti Kamil *et al.*, 2022; Lee Mei Ru, 2022). The driver-passenger connection, as well as the state of the vehicle, all have an impact on ride comfort. Improved comfort increases client satisfaction and loyalty to e-hailing services.

2.2.3 Safety and User Satisfaction towards E-Hailing

Safety and security are crucial for gaining client trust in e-hailing services. Safety refers to users' emotional and physical well-being, whereas security entails personal data protection and service transparency. User especially for those travelling alone, prioritise safety over cost. Concerns include driver information, car condition, privacy, and insurance coverage. The automatic driver-assignment method may generate anxiety owing to a lack of options and uncertain driver backgrounds (Tan Jei Ru *et al.*, 2023). Grab and other e-hailing businesses address these

issues by adding safety measures like as driver background checks, required liability insurance, and data security. These steps assist to retain user confidence and emphasise the significance of safety in e-hailing services (Mat Yunoh *et al.*, 2020).

2.2.4 Price and User Satisfaction towards E-Hailing

Price is an important aspect for user satisfaction because it represents the value that customers are prepared to pay for a product or service. In Malaysia, the fair pricing of the e-hailing based on journey distance has a huge influence on customer service. Clear payment transparency inside the applications is also required. Furthermore, promotions and coupon redemption to increase user satisfaction and hence increasing the total value of e-hailing services. (Lee Mei Ru, 2022).

2.2.5 Accessibility and User Satisfaction towards E-Hailing

Accessibility is the ease with which products, services or activities may be obtained. Smartphone apps that provide real-time monitoring, car position updates and a variety of payment options make e-hailing more accessible. Customers may order trips, track vehicle progress and select pickup locations lowering wait times and removing the need to hail traditional taxis (Nur Afiqah binti Kamil *et al.*, 2022). This ease has a tremendous influence on user satisfaction. The ability to get real-time updates, select exact locations and track projected arrival times makes e-hailing systems more user-friendly and effective. These features save travellers time and effort, which enhances their entire experience (Mohamad Niza Md Nor *et al.*, 2021).

2.3 Conceptual Framework

Fig. 1 illustrates the research framework developed for this study. The framework highlights the relationship between four independent variables (IV); comfort, price, safety, and accessibility, and the dependent variable (DV), which is user satisfaction.

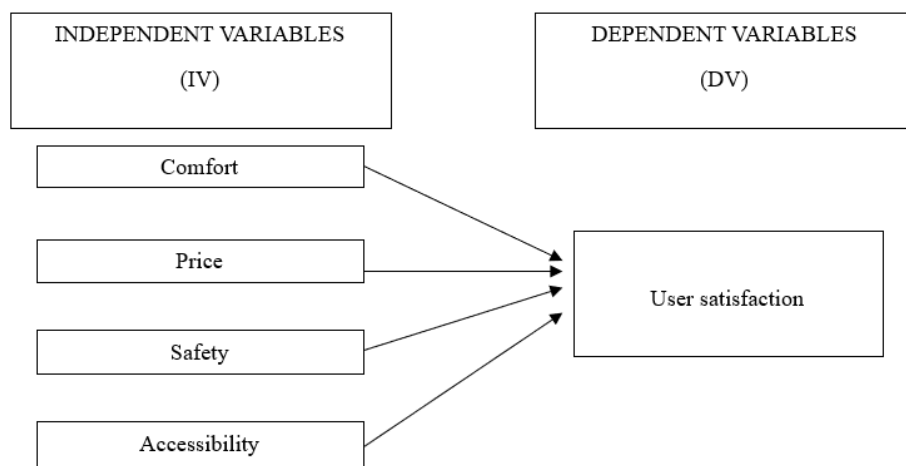


Fig. 1 Research Framework

3. Research Methodology

The study used quantitative approaches, with a focus on numerical data, to discover trends, test hypotheses, and examine causal linkages. This approach collected data using questionnaires, with respondents drawn at random from Johor, Malaysia. To satisfy the study's aims, data was analysed using SPSS software with several analyses including reliability analysis, descriptive analysis, normality tests, and correlation analysis. Quantitative approaches offered a systematic way to studying the correlations between variables (Simplilearn, 2023; Pritha Bhandari, 2020).

3.1 Population and Sampling Method

The targeted population consist of the users that stay in Johor, Malaysia. According to a study, there are 34.31 million of population in Malaysia (Population & Demographic Statistic Division, 2024). While, there are 4.09 million of population who were stay in Johor, Malaysia (Population & Demographic Statistic Division, 2024). Sampling is the process of selecting a subset of the population for study to save time and money. This study employed simple random sampling, a technique in which every individual in a homogenous group has an equal chance of being chosen, resulting in impartial representation. To establish the sample size, researchers used the

Krejcie and Morgan (1970) method, which yielded 384 respondents for this study. In the Appendix 1, shows details of the sampling procedure and computations used to achieve accurate population representation.

3.2 Research Instrument

A research instrument is a methodically and scientifically constructed tool that is used to gather, quantify, and evaluate data pertaining to research alignments and interests. Generally, the kind of study an investigator is conducting—qualitative, mixed-method, or quantitative—determines the instrument that will be best used. Surveys, tests, questionnaires, achievement/aptitude tests, interviews, scales like measuring and weighing tapes, government archives, oral histories, focus group discussions and experiments, observation forms, tally sheets, and other methods are examples of possible instrument types (Awu Issac Oben, 2021). This research employed a Google e-Form to collect data from 384 Johor, Malaysia volunteers. The questionnaire included three sections: demographic profile, independent factors, and user satisfaction. The study used nominal and ordinal scales in Section A for gender and demographic information, and a five-point Likert scale in Sections B and C. The Google e-Form questionnaire employs a Likert scale to measure respondents' level of agreement or disagreement on specific subjects. The Likert scale is used in this study to make it easier for respondents to answer questions. The data collected throughout the study was analysed using the Statistical Package for the Social Sciences (SPSS) software.

3.3 Data Collection Procedure

In this study, primary data was gathered utilising a quantitative research method, namely questionnaires. To achieve the research aims a questionnaire with closed-ended questions was created. The researcher received validation from the Faculty of Technology Management & Business, University Tun Hussien Onn Malaysia, in the form of an official document certifying their academic standing and the permission of their research project. Data gathering used a random sample approach with road users being requested to complete the survey and the procedure takes around two months (Mazhar *et al.*, 2021). The questionnaire was delivered digitally through Google Forms and shared on online platforms such as Facebook and WhatsApp in order to engage with the desired audience and collect feedback on e-hailing service satisfaction.

3.4 Data Analysis

3.4.1 Pilot Study

A pilot study is a brief feasibility study designed to assess several aspects of the approaches that will be employed in a larger, more comprehensive, or confirmatory investigation. A pilot test's goal is to improve the questionnaire so that respondents can comprehend and react to the questions. Prior to collecting real data using the study equipment, this test is crucial. Before collecting any real data, pilot studies should be conducted to guarantee the calibre of research talks and data accuracy. In order to verify the dependability of the study instruments, reliability tests were employed for the pilot testing in this study. The same set of research tools should be used for all tests, and subjects from the research population should participate in the study. Measurement precision is referred to as reliability, and reliability increases with accuracy level.

3.4.2 Reliability Analysis

The purpose of reliability analysis is to offer a unique assessment of the internal consistency and reliability of the variables under investigation. The goal of the reliability test is to determine consistency in both the pilot and real studies. Cronbach's Alpha (α) or reliability coefficient of 1.00 shows complete reliability, whereas values of 0.00 or less suggest surveys are unreliable. A range of 0.80 to 0.90 is commonly utilised in research (Salkind, 2012).

3.4.3 Descriptive Analysis

Descriptive analysis is the first step in the whole data analysis process. This tool is used to exhibit data in a more clear and ordered format. In descriptive analysis, two types of measurements are used: variability measures and central tendency measures (Ng Siao Le, 2022). The mean or average of the data in this study was computed using the central tendency measure. The assessment also indicates the amount of agreeableness based on Wiersma's mean interpretation. The average of mean values between 1.00 and 2.33 indicates weakness, 2.34 to 3.67 indicates moderateness, and 3.68 to 5.00 indicates highness. The respondent profile in this study, which comprised gender, age, education level, occupation, e-hailing experience and duration of service is described using descriptive analysis.

3.4.4 Normality Test

Normality analysis calculates the chance that data for a random variable will be regularly distributed and determines if the data set was well-modeled. The most well-known normality tests are the Kolmogorov-Smirnov and Shapiro-Wilk tests. Because the sample size in this study is higher than 50, Kolmogorov-Smirnov was used, whereas Shapiro-Wilk was used in the study with a sample size of fewer than 50.

3.4.5 Correlation Analysis

Correlation analysis is used to access the relationship between dependent variable and independent variables. The dependent variable is the user satisfaction while the independent variable is the quality of e-hailing transport. The Pearson and Spearman correlation indices are the two most commonly used ones. The first one is used when the data follow a normal distribution and measures the linear relationship between two continuous random variables; the second is used when the data do not follow a normal distribution and measures any monotonic relationship between two continuous random variables; both indices range from -1 to 1 (Alessandro Rovetta, 2020).

4. Results and Discussion

Researchers distributed 384 questionnaires to respondent of the users of e-hailing services. Based on Krejcie & Morgan (1970), there must have 384 respondents to answer the questionnaires. However, there are 350 sets of questionnaires that have been successfully returned to the researcher. The response rate of this study is 91.15%. The questionnaires response rate is stated in Table 1 below.

Table 1 Survey return rate

| Population | Sample Size | Questionnaire Distribute | Questionnaire Returned | Percentage |
|------------|-------------|--------------------------|------------------------|------------|
| 4,090,900 | 384 | 384 | 350 | 91.15% |

4.1 Reliability Analysis of Pilot Study

Table 2 below shows the Cronbach's Alpha value of the pilot study was carried out for this research. There were two variables included factors of services of e-hailing transport and user satisfaction. The first variable was contained with five factors with five items for each and the Cronbach's Alpha value ranged from 0.61 to 0.71. The Cronbach's Alpha for the five items of user satisfaction in e-hailing service quality is 0.66. According to Sekaran & Roger (2016), reliabilities lower than 0.60 was considered as poor and value in the range of 0.60 to 0.70 are acceptable then higher than 0.70 is good. Thus, the internal consistency reliability used in the study can considered as acceptable and can be used for the actual data collection.

Table 2 Reliability test for pilot study

| Variables | Cronbach's Alpha | N-item in scale | Interpretation |
|---|------------------|-----------------|----------------|
| Independent Variables (Internal Factors) | | | |
| Comfort (C) | 0.61 | 5 | Acceptable |
| Price (P) | 0.71 | 5 | Good |
| Safety (S) | 0.70 | 5 | Good |
| Accessibility (A) | 0.68 | 5 | Acceptable |
| Dependent Variable | | | |
| User Satisfaction (US) | 0.66 | 5 | Good |

4.2 Reliability Analysis of Actual Study

Table 3 below shows the Cronbach's Alpha value of the actual study was carried out for this research. There were two variables included factors of services of e-hailing transport and user satisfaction. The first variable was contained with five factors with five items for each and the Cronbach's Alpha value ranged from 0.63 to 0.71. The Cronbach's Alpha for the five items of user satisfaction in e-hailing service quality is 0.67. According to Sekaran & Roger (2016), reliabilities lower than 0.60 was considered as poor and value in the range of 0.60 to 0.70 are acceptable then higher than 0.70 is good. Thus, the internal consistency reliability used in the study can considered as acceptable.

Table 3 Reliability test for actual study

| Variables | Cronbach's Alpha | N-item in scale | Interpretation |
|--|------------------|-----------------|----------------|
| Independent Variables (Internal Factors) | | | |
| Comfort (C) | 0.63 | 5 | Acceptable |
| Price (P) | 0.71 | 5 | Good |
| Safety (S) | 0.70 | 5 | Good |
| Accessibility (A) | 0.68 | 5 | Acceptable |
| Dependent Variable | | | |
| User Satisfaction (US) | 0.67 | 5 | Good |

4.3 Demographic Analysis

Table 4 below shows the demographic of respondents, which includes gender, age, academic, occupational, e-hailing experience, and frequency of using the e-hailing service. The table illustrates the majority of respondents of the male and female is same (50%), while the majority of respondent ages is 21 - 23 years old (42.9%), the majority of respondent academics is Bachelor’s Degree (28.9%), Private Sector (24.6%), respondents chose “yes” for the e-hailing experience (51.1%) and frequency of using the e-hailing service for once a week (30.9%).

Table 4 Summary of demographic analysis

| Demographic | Details | Frequency | Percentage (%) |
|-------------------------------------|------------------------|-----------|----------------|
| Gender | Male | 175 | 50 |
| | Female | 175 | 50 |
| | Total | 350 | 100 |
| Age | 18-20 years old | 61 | 17.4 |
| | 21-23 years old | 150 | 42.9 |
| | 24-26 years old | 98 | 28 |
| | 27 years old and above | 41 | 11.7 |
| | Total | 350 | 100 |
| Academic | SPM | 36 | 10.3 |
| | Diploma | 84 | 24 |
| | Bachelor’s Degree | 101 | 28.9 |
| | Master’s Degree | 97 | 27.7 |
| | PHD | 32 | 9.1 |
| Occupation | Total | 350 | 100 |
| | Government Sector | 51 | 14.6 |
| | Private Sector | 86 | 24.6 |
| | Self- Employment | 84 | 24 |
| | Student | 84 | 24 |
| E-Hailing Experience | Unemployed | 45 | 12.9 |
| | Total | 350 | 100 |
| | Yes | 179 | 51.1 |
| How Often You Use E-Hailing Service | No | 171 | 48.9 |
| | Total | 350 | 100 |
| | Everyday | 39 | 11.1 |
| | Not Everyday | 67 | 19.1 |

| | | |
|-----------------------|-----|------|
| Once a week | 108 | 30.9 |
| More than once a week | 88 | 25.1 |
| A few time | 48 | 13.7 |
| Total | 350 | 100 |

4.4 Descriptive Analysis

Table 5 below presents the descriptive analysis of user satisfaction, focusing on the independent variables of comfort, price, safety, and accessibility, as well as the dependent variable, user satisfaction. All the independent variables exhibit high and moderate mean values, with comfort at 4.01, price at 3.54, safety at 3.79, and accessibility at 3.61, indicating that respondents rated these factors as high and moderate influential. Similarly, the dependent variable, user satisfaction, also demonstrates a moderate mean of 3.59, with a standard deviation of 1.11, reflecting consistent agreement among respondents. This data underscores the significance of these e-hailing service quality factors for user satisfaction in the context of e-hailing service.

Table 5 Summary of Descriptive Test

| | Mean | Standard Deviation | Interpretation |
|-----------------------|------|--------------------|----------------|
| Independent Variables | | | |
| Comfort | 4.01 | 0.79 | High |
| Price | 3.54 | 1.10 | Moderate |
| Safety | 3.79 | 1.05 | High |
| Accessibility | 3.61 | 1.10 | Moderate |
| Dependent Variables | | | |
| User Satisfaction | 3.59 | 1.11 | Moderate |

4.5 Normality Test

Table 6 shows the p-value for the comfort, price, safety, accessibility and user satisfaction in e-hailing service quality is less than 0.001. The result of the test for normality shows that the p-values for the independent variables and dependent variable are less than 0.001. So, because this data is not normally distributed, the research will proceed with the Spearman correlation analysis.

Table 6 Summary of Normality Test

| | Kolmogorov-Smirnov ^a | | | Shapiro-Wilk | | |
|--|---------------------------------|-----|-------|--------------|-----|-------|
| | Statistic | df | Sig. | Statistic | df | Sig. |
| Independent Variable | | | | | | |
| Comfort | 0.152 | 350 | <.001 | .960 | 350 | <.001 |
| Price | 0.134 | 350 | <.001 | .963 | 350 | <.001 |
| Safety | 0.120 | 350 | <.001 | .960 | 350 | <.001 |
| Accessibility | .095 | 350 | <.001 | .966 | 350 | <.001 |
| Dependent Variable | | | | | | |
| User Satisfaction in E-Hailing Service Quality | .095 | 350 | <.001 | .964 | 350 | <.001 |

4.6 Correlation Analysis

The Spearman correlation analysis reveals significant positive relationships between various factors and user satisfaction. Comfort have weak positive correlates with user satisfaction, with a coefficient of 0.340, indicating that comfort is linked to weak positive satisfaction levels. Price has a moderate positive correlation with user satisfaction, with a coefficient of 0.550, demonstrating better than comfort's satisfaction. Besides that, safety also exhibits a moderate positive correlation of 0.434. This means that improved Safety is associated with an increase

in user satisfaction or outcomes. Finally, accessibility Table 7 shows the strongest correlation, with a coefficient of 0.816, highlighting that accessibility as the most influential factor affecting user satisfaction among the variables analysed. All these relationships are significant at the 0.01 level (2-tailed).

Table 7 Summary of Correlation Analysis

| | Comfort | Price | Safety | Accessibility | User Satisfaction |
|-------------------|---------|---------|---------|---------------|-------------------|
| Comfort | 1.000 | 0.549** | 0.333** | 0.155** | 0.340** |
| Price | | 1.000 | 0.548** | 0.442** | 0.550** |
| Safety | | | 1.000 | 0.491** | 0.434** |
| Accessibility | | | | 1.000 | 0.816** |
| User Satisfaction | | | | | 1.000 |

** Correlations is significance at the level 0.01 (2-tailed)

5. Conclusion

This study highlights the importance of service quality in determining user satisfaction with e-hailing services in Johor, Malaysia. Accessibility, safety, affordability, and comfort are all important variables that influence customer satisfaction. Accessibility and safety appear as particularly important, with easy booking systems, dependable app functioning, and strong security measures all significantly improving the user experience. Transparent and cheap pricing tactics improve users' sense of value, resulting in more satisfaction and loyalty.

The study admits limitations, such as its narrow emphasis on a specific geographic region and reliance on self-reported data, which may limit the findings' generalisability. However, it makes concrete recommendations for service providers to close gaps, such as improving comfort, tightening safety standards, assuring accessibility, and enacting equitable pricing policies.

In conclusion, e-hailing businesses must adapt to changing client requirements in order to remain competitive. Future study should broaden the scope by investigating qualitative aspects and including a larger geographic context to gain a better understanding of e-hailing service quality and its influence on user satisfaction.

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Conflict of Interest

Authors declare that there is no conflict of interests regarding the publication of the paper.

Author Contribution

The authors confirm contribution to the paper as follows: **study conception and design:** Chen De Lun and Muhammad Ammar Shafi; **data collection:** Chen De Lun and Muhammad Ammar Shafi; **analysis and interpretation of results:** Chen De Lun and Muhammad Ammar Shafi; **draft manuscript preparation:** Chen De Lun and Muhammad Ammar Shafi. All authors reviewed the results and approved the final version of the manuscript.

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