Factors Influencing the Decline in Use of The Nebengers Application

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Abstract

Nebengers is a popular ride-sharing application that helps many users find traveling companions and reduces the use of private vehicles in several regions in Indonesia. In 2022, there has been an increase in travel requests but a decrease in trip completion; in fact, only twenty-five percent of travel requests have been completed. This research aims to analyze the factors influencing the decline in trip completion in the Nebengers application based on the user's perspective. The identification process was carried out by conducting interviews with guided questions referring to the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) Model and the Systematic Literature Review (SLR) results. Thematic analysis was used to identify factors discovered during the interviews. The results of the thematic analysis are four themes of factors that influence the decline in use of the Nebengers application: Effort Expectancy, Facilitating Conditions, Hedonic Motivation, and Habit.

Keywords: Ride-sharing, Nebengers, SLR, Thematic Analysis, UTAUT2

Introduction

The Indonesian government is implementing various policies to create a more sustainable, healthy, and economically efficient urban environment. One of these policies aims to reduce the use of private vehicles (Regulation, 2018). Vehicles contribute significantly to air pollution, particularly exhaust emissions. The increase in motor vehicles also correlates with population density, which reduces open space and deteriorates the quality of the urban environment (Nguyen-Phuoc et al., 2022).

Based on data from the TomTom Traffic Index Ranking 2022, the capital city of Indonesia, Jakarta, ranks as the second most congested city in Southeast Asia and 29th out of 389 cities worldwide (TomTom Traffic Index Ranking 2022, 2023). Despite this, several government programs have successfully reduced congestion over the past few years by providing affordable public transportation for residents in major cities. Railways, Bus Rapid Transit (BRT), Mass Rapid Transit (MRT), city transport services, and some online vehicle services are integrated to meet the public's transportation needs and reduce traffic congestion (Regulation, 2018). The government also supports ride-sharing applications such as Nebengers, encouraging people to share rides and reduce the number of vehicles on the road.

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Nebengers is an application that originated from a Twitter community in 2011 (Nebengers, 2016). Its purpose is to enable vehicle owners with empty seats to share rides with others with the same destination, as developed by PT. Suitmedia Kreasi Indonesia, through its CSR program, this application aims to help urban residents share vehicles and support Smart City transportation solutions. Launched in August 2015, Nebengers has become one of Indonesia's most popular ride-sharing applications. The application helps users find travel companions and reduce the use of private vehicles. Nebenger users are spread across several major cities, such as Jakarta, Surabaya, Bandung, Yogyakarta, Bali, and Semarang. To improve security, the application features a verification system and user feedback.
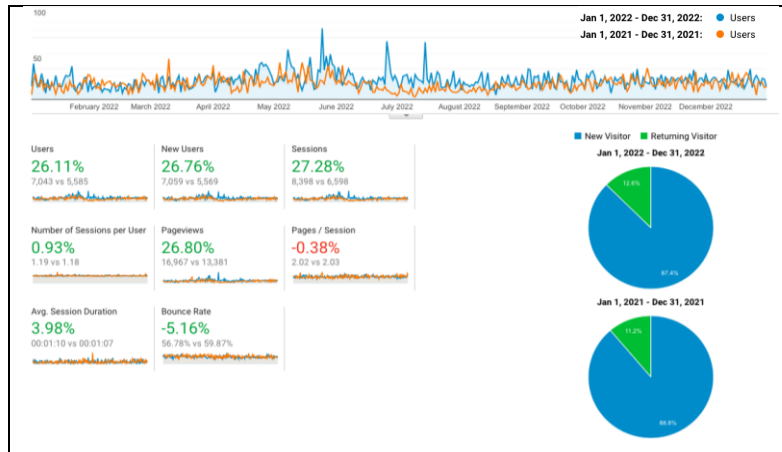

Figure 1. Visitors of nebengers.com

Source: (Google Analytics, 2022)

Despite its numerous benefits, the Nebengers application experienced a decline in users in 2022 compared to 2021. As shown on Figure 1, website visitors decreased in 2022, with only 7,000 visitors, and peaked at 77 on May 25, 2022. The total number of users who installed the application from January 1, 2021, to December 31, 2022, was 18,815,000 Android users and 5,235,000 iOS users. However, active users in 2022 reached only 24,000, marking a 17.3% decrease from the previous year. The most active day was July 8, 2022, with 652 users, a 161.8% increase from 2021, while the least active day was February 15, 2021, with 232 users. The period from February to March 2022 recorded the lowest application usage, whereas usage remained stable from July to December 2022. User engagement duration fluctuated from January 1, 2021, to December 31, 2022
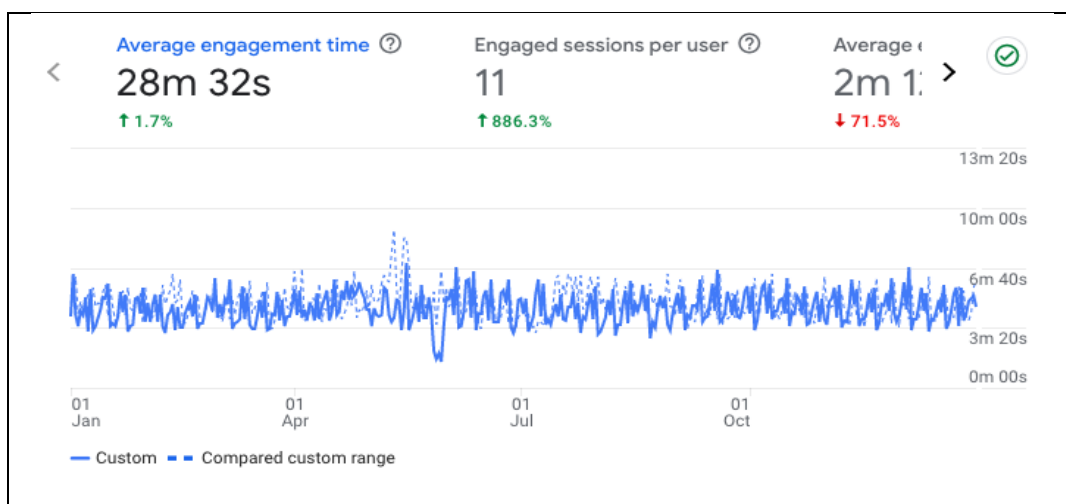

Figure 2. User Engagement of the Nebengers Application 2021-2022

Source: **(Google Analytics, 2022)**

Figure 2 shows on active days, users of the Nebengers application stay on the app for approximately 132 seconds. The longest engagement duration was recorded on May 11, 2021, with users staying for

over 231 seconds (3 minutes and 51 seconds). Ride request engagement, which indicates how many users clicked or requested to join a ride, reached 37,000 events with 4,200 users from January to December 2022. Although users decreased by 20%, ride requests in 2022 slightly increased compared to 2021. In the first half of 2022, the number of events and users was lower than in 2021, but this trend reversed in the second half of 2022.
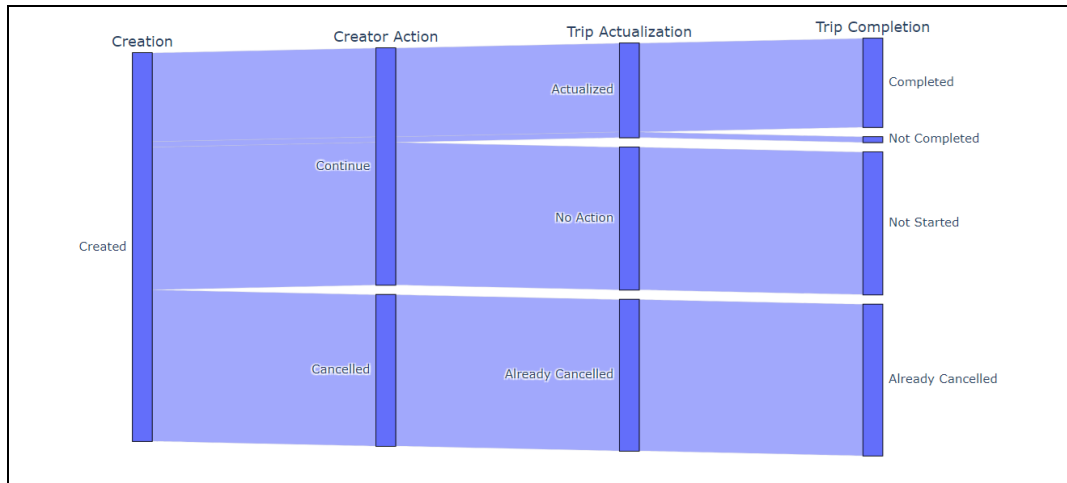

Figure 3. Nebengers Application Ride Report 2021-2022

Source: **(Google Analytics, 2022)**

Based on the analytics report in Figure 3, despite numerous ride requests made on the Nebengers application, only about a quarter of these requests result in completed journeys, with many trips not being started despite not being canceled. The report also indicates that out % of the total ride requests approved in 2022, only 66% were completed without cancellation. Overall, the total number of ride requests in 2022 was lower than the previous year, indicating a decline in Nebengers application usage.

We have conducted a search for previous studies and found no research related to Nebengers in Indonesia. Then we conducted a global search using the SLR method and found several studies related to ride hailing. Previous studies have shown factors that influence customer loyalty in using ride hailing, but still have some shortcomings. For example, the sample of respondents who did not fully involve ride-hailing users conducted by Nguyen-Phuoc et al. (2021) can affect the validity of the results obtained. In addition, several studies also do not provide recommendations for further research. Then the scope of the research space is still limited to certain countries/regions so that it cannot represent other areas such as research conducted by Belgiawan et al. (2022) and Nguyen-Phuoc et al. (2022).

In this study, the research question is: "What are the factors influencing users' decisions not to complete ride requests on the Nebengers application?". Factors such as timing suitability, driver or passenger availability, service reliability, and social or psychological factors such as trust and comfort may be exciting areas to investigate. The model used in this selection is UTAUT2, which is a development of the UTAUT model, with the addition of new constructs and focusing on consumers by understanding the adoption and use of technology in the consumer context, in line with this research which aims to find out how customers respond to the use and impact of the Nebengers application. This is why UTAUT2 was chosen and is more relevant for research related to the Nebengers application.

Literature Review

This study uses a Systematic Literature Review (SLR), which involves a straightforward research question, a systematic search process, data extraction, and data presentation, regardless of whether researchers explicitly label their study as a systematic literature review. According to Kitchenham and Charters (2007), searching using SLR involves several steps:
    a. Defining the research question
        The research question for this study is: What are the factors influencing users' decision not to complete ride request on the Nebengers application?

b. Selecting journal databases as the sources of search by determining keywords
The related research search uses databases IEEE Explorer, ScienceDirect, Scopus, and Emerald Insight. The keywords used are "Ride Hailing Loyalty", "Ride Hailing Cancellation".

c. Establishing search criteria (Inclusion and Exclusion Criteria)
The criteria used are publication in Indonesian or English, in the form of journals or proceedings published in the last five years, can be downloaded in full text and are peer-reviewed papers.

The document search was conducted using pre-determined databases on December 9th, 2023, with two specified keywords, yielding diverse results. From each database used, the search results for the keyword "Ride-hailing loyalty" were as follows: IEEE Explore yielded four documents, ScienceDirect yielded 210 documents, Emerald Insight yielded 89 documents, and Scopus yielded 17 documents, totaling 320. Subsequently, the database search with the keyword "Ride-hailing cancellation" produced the following results: IEEE Explore yielded five documents, ScienceDirect yielded 137 documents, Emerald Insight yielded 13 documents, and Scopus yielded five documents, totaling 160. Therefore, the total number of documents obtained using these two keywords was 480 documents. The next step is selecting documents relevant to the research questions as shown in Figure 4.
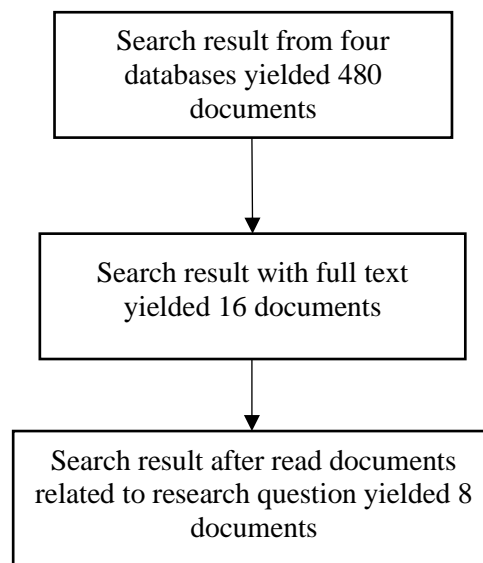

Figure 4. Documents Search Results

Based on these 8 documents, we performed a 3C + 2S analysis: Compare, Contrast, Criticize, Synthesize, and Summarize to find out the relevance between previous studies. The results of the analysis will be explained in Table 1.

Table 1. 3C+2S Analysis

Process	Description
Compare	All studies focus on customer satisfaction and loyalty towards using ride-hailing. (Belgiawan et al., 2022; Loa & Habib, 2021). Nguyen-Phuoc et al. (2020); Nguyen-Phuoc et al. (2021) examine the factors that influence customer loyalty towards using ride-hailing such as risk, cost, waiting time. Research (Li et al., 2023; Loa & Habib, 2021) examines factors that influence the rate of order cancellation and the effectiveness of imposing order cancellation penalty fees in increasing customer loyalty. Furthermore, research by Azzahro et al., (2020) discusses factors that can increase the loyalty of online motorcycle taxi drivers (partners).
Contrast	• Belgiawan et al. (2022); Nguyen-Phuoc et al. (2021); and Nguyen-Phuoc et al., (2022) conducted research by considering factors that influence customer loyalty, such as psychological factors, travel time, risk, price and green values, while Loa & Habib (2021)) compared factors by considering old and new users,

Process	Description
	• Li et al., (2023) and Wang et al. (2020) conducted research focusing on the effect of penalties on transaction cancellations by customers on increasing loyalty, while Azzahro et al. (2020) conducted research focusing on loyalty drivers factors. • The eight studies used different techniques, such as Belgiawan et al. (2022) using the Hybrid Choice Model (HCM), then Loa & Habib (2021) using the Zero-inflated ordered probit (ziop) method, Li et al. (2023) and Wang et al. (2020) using the Modeling Framework while Azzahro et al. (2020), Nguyen-Phuoc et al. (2020), Nguyen-Phuoc et al. (2021), and Nguyen-Phuoc et al. (2022) using the CEB-SEM and PLS-SEM methods. • Although all studies assume that the factors that influence customer loyalty are cost, risk and waiting time, Li et al. (2023) and Wang et al. (2020) state that cancellation penalties are also very important.
Criticize	Although the eight studies provide very important views and insights into the needs of this research, this study is still considered to have several shortcomings. For example, the sample respondents who have not fully involved ride-hailing users conducted by Nguyen-Phuoc et al. (2021) can affect the results' validity. In addition, several studies also do not provide recommendations for further research. Then, the scope of the research space is still limited to certain countries/regions so that it cannot represent other areas such as the research conducted by Belgiawan et al. (2022) and Nguyen-Phuoc et al. (2022).
Synthesize	Overall, several factors influence ride-hailing user loyalty: psychological factors, risk perception, cost, waiting time, driving time, application usability, post-order support, service quality, comfort, reliability, and promotion. However, priorities and impacts can vary depending on context and circumstances.
Summarize	These eight studies provide useful insights into customer loyalty in using ride-hailing services that can help companies improve their services so that development focuses more on customer needs. Although there are some differences in methodology and research focus, the findings of the eight studies show that psychological support, risk perception, cost, waiting time and service quality are some of the main factors influencing customer loyalty.

Ride Hailing and Ride Sharing

With rapid advancements in GPS technology and wireless communication, on-demand ride-sourcing applications such as Uber and DiDi have swiftly expanded and gained global popularity (Wang et al., 2020). Ride-hailing is "a platform that enables individuals to book and pay for transportation services from professional or part-time drivers through a mobile application" (Nguyen-Phuoc et al., 2020). Also known as ride-sourcing, ride-hailing refers to services for individuals book transportation via online booking applications. Urban mobility in many cities worldwide has been influenced by the flexibility and convenience offered by services like taxis alongside public transportation such as trains and buses. During peak hours, when demand exceeds available vehicles, users face challenges in booking rides even though ride-hailing offers significant advantages (Nguyen-Phuoc et al., 2022).

Ride-hailing services provide users with comprehensive information about their journey, including price and duration, by using booking applications equipped with user-friendly interfaces. Consequently, this capability has empowered ride-hailing services to transform and redefine how individuals travel within urban environments. The global surge in ride-hailing service usage has been remarkable, benefiting millions of passengers. It is projected that this market will grow to approximately $47 billion from 2020 to 2024, with an annual growth rate of 15% based on analysis covering 25 different service providers such as Lyft, Uber, Grab, or Carshare (Nguyen-Phuoc et al., 2021).

Perspective on the Use of Ride-Hailing Services

In the study conducted by Nguyen-Phuoc et al. (2021), five key factors underpinning customers' continued use of ride-hailing services were identified: the quality of the booking application, perceived quality of post-booking services, value benefits of use, intention for continued use, and word-of-mouth promotion (WOM). Human actions, including the decision to use ride-hailing services, can be understood through the Theory of Planned Behavior (TPB), a psychosocial model explaining human behavior. The core idea is that attitudes, subjective norms, and perceived behavioral control influence the intention to behave, directly determining the behavior itself. Intention reflects the extent to which a person is willing to engage in or undertake an action (Nguyen-Phuoc et al., 2022).

The research by Nguyen-Phuoc et al. (2022) explains that two psychological factors influence human behavior in using ride-hailing services: perceived risk and price sensitivity. Traffic congestion challenges in metropolitan cities like Jakarta and Surabaya have compelled urban dwellers to seek alternative solutions. Ride-hailing services have emerged as an effective answer due to their speed and affordable fares (Azzahro et al., 2020). Customer satisfaction in public transportation is measured based on their evaluation of the service compared to their prior expectations. At the same time, loyalty is defined as the intention to reuse the service based on previous positive experiences (Lierop et al., 2018).

Unified Theory of Acceptance and Use of Technology (UTAUT)

Venkatesh and colleagues introduced the Unified Theory of Acceptance and Use of Technology (UTAUT) in 2003, integrating eight major technology adoption theories. These include the Theory of Planned Behavior (TPB), Technology Acceptance Model (TAM), TPB and TAM Integration (C-TAM-TPB), Theory of Reasoned Action (TRA), Motivation Model (MM), and others within this category (Patil & Undale, 2023). The model has been widely recognized for explaining how users adopt technology (Patil & Undale, 2023; Venkatesh et al., 2003). It has been tested in various contexts and effectively predicts technology adoption (Patil & Undale, 2023).

UTAUT consists of four primary constructs, namely: 1. Performance Expectancy (PE) determines the extent to which an individual believes using the system will enhance their job performance; 2. Effort Expectancy (EE) measures how easily individuals believe they can use information technology; 3. Social Influence (SI) measures how individuals perceive social pressure from influential people to use information technology; and 4. Facilitating Conditions (FC) measure individuals' belief that support from the organization and available infrastructure facilitates or supports the use of information technology.

The three primary constructs, Behavioral Intention (BI) and Use Behavior (UB), predict Intention to Use Technology (ITU). The model has been tested in various situations and has proven effective in explaining how users adopt technology. It has been reported that these four constructs are moderately influenced by gender, age, experience, and voluntariness of use.

Unified Theory of Acceptance and Use of Technology Extended (UTAUT2)

In 2012, Venkatesh et al. conducted research introducing UTAUT2, an adaptation of the UTAUT model focused on consumer contexts. This extension incorporated three additional constructs: Hedonic Motivation, Price Value, and Habit. It was demonstrated that hedonic motivation significantly influences behavioral intention, moderated by age and gender. Similarly, within the same demographic variables, price also impacts behavioral intention. Habit directly and indirectly affects technology usage, illustrating individual consumer variations (Venkatesh et al., 2012).

From the UTAUT 2 model by Venkatesh et al. (2012), three additional factors are elucidated: Hedonic Motivation, Price Value, and Habit.

Hedonic Motivation is the satisfaction derived from using technology, which plays a significant role in technology adoption. Research in Information Systems indicates that Hedonic Motivation directly influences the acceptance and use of technology. Price Value, which combines product or service quality with its monetary cost, is also crucial in determining the perceived value of a technology. Habit

shape user behavior toward technology, where experience reflects the duration from initial use to habit formation over a specific period, such as three months.

Methodology

Research Design

Research design is a plan or scheme designed to collect, calculate, and analyze data to answer research questions. (Sekaran & Bougie, 2016). The research design is described in Table 2.

Table 2. The Research Design

Element	Information
Classification	Case study
Research methods	Qualitative
Types of research	Applied research
Object of research	Nebengers application
Research instrument	Interview questions
Data source	Primary and secondary data
Data collection	Literature study, observations, and interviews with Nebengers application users.
Data analysis	Thematic Analysis

Research Model

The research framework used as the theoretical basis is crucial. The researcher employed the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) in this study. Developed by Venkatesh et al. (2012), UTAUT2 represents an advancement from UTAUT, incorporating additional constructs and focusing on consumer contexts to better understand the adoption and use of technology. UTAUT2 is particularly relevant for research concerning applications like Nebengers.

Research Instrument

The research instrument used in this research is the interview. The questions given are open-ended questions with references to previous research. The readability test is carried out to minimize ambiguous questions. The list of research instruments can be found in Table 3.

Table 3. The Research Questionnaire

No.	Questionnaire	Reference
1	What is your experience using the Nebengers application? Is there anything that is missing or even makes you not interested in using the application again?	(Venkatesh et al., 2012; Lierop, Badami, & El-Geneidy, 2018; Ma, Xin Zhang, & Wang, 2019)
2	Have you ever had an unpleasant experience while traveling using Nebengers?	(Venkatesh et al., 2012; Lierop, Badami, & El-Geneidy, 2018)
3	Are there any technical problems you feel need to be improved when using the Nebengers application?	(Venkatesh et al., 2012; Lierop, Badami, & El-Geneidy, 2018; Ma, Xin Zhang, & Wang, 2019)
4	Are you overall satisfied with the Nebengers application? Are there any factors that reduce your comfort or interest in using Nebengers again?	(Venkatesh et al., 2012; Lierop, Badami, & El-Geneidy, 2018)
5	Do you think the prices at Nebengers are commensurate with the benefits you get? Are there things that make the costs incurred not worth it?	(Venkatesh et al., 2012; Lierop, Badami, & El-Geneidy, 2018)
6	Has there been a change in your habits of using the Nebengers application? What caused the shift and	(Venkatesh et al., 2012; Lierop, Badami, & El-Geneidy, 2018;

No.	Questionnaire	Reference
	influenced you to stop using Nebengers or cancel the trip?	Nguyen-Phuoc et al., 2022; Nguyen-Phuoc et al., 2020)
7	What is your experience using the Nebengers application? Is there anything that is missing or even makes you not interested in using the application again?	(Ma, Xin Zhang, & Wang, 2019)

Research Participant

Research participants were determined using a purposive sampling technique because it follows qualitative research, and the assessment results are considered appropriate for answering research questions and producing research objectives (Saunders et al., 2023). The minimum sample size that must be met when using a qualitative interview approach is 5-25 respondents (Saunders et al., 2016). We conducted contextual interviews with five respondents willing to conduct interviews online via the Zoom Meeting application. The criteria for selecting sources were respondents who had or were currently using the Nebengers application and, in their history of use, had experienced problems related to completing travel requests, whether cancellation or no action. Respondent contact was obtained through PT Suitmedia Kreasi Indonesia and the distribution of Google forms on social media. The respondent profiles can be seen in Table 4.

Table 4. Respondent Profiles

Code	Gender	Age (y.o)	Occupation
WP	Male	30	Project Manager
HG	Male	42	BUMD Employee
RE	Male	37	Private Employee
RF	Male	35	Private Employee
RS	Female	31	Business Owner

Data Collection

Data collection was carried out using primary and secondary data. Primary data was obtained through interviews with sources with specific requirements according to research needs. Secondary data was obtained from document studies and observations of Nebengers. The interviews conducted were contextual interviews with five respondents who had a history of decreasing use of the Nebengers application, especially trip completion. This interview took place for one day on June 15, 2024, with a duration for each respondent ranging between 28 – 70 minutes and was documented in the form of an interview transcript.

Data Analysis

Data analysis will be conducted using thematic analysis. The thematic analysis aims to find themes or patterns in data collection (such as interviews, observations, documents, or diaries) (Saunders et al., 2023). In this research, thematic analysis can be used to understand the factors underlying human attitudes and actions, especially concerning decreasing trip completion in the Nebengers application. We do six steps to analyze data including data familiarization, data coding, initial theme generation, theme development and review, theme refining, defining, and naming, and writing up. In this study, data analysis is conducted by Atlas.ti software. The output of this phase is the factors that influence the decline in the use of Nebengers applications.

Result

Validation of the research results was carried out with the owner of the Nebengers application. The results of the interview are included in the interview transcript for analysis. Thematic analysis was

chosen for this qualitative research. It produced a theme of factors that influence the use of the Nebengers application. The research result can be seen in Table 5.

Table 5. The Research Result

Theme	Subtheme	Description
Effort Expectancy	Interface Clarity	The ease factor of using the Nebengers interface
Facilitating Conditions	Accessibility	The ease factor of getting a vehicle
	Resource Availability	Resource availability factor (hardware, software)
	Support Availability	Factor in the availability of technical support
	Infrastructure Support	Organizational support factor for the use of Nebengers
Hedonic Motivation	Convenience	Ease of service factor
Habit	Financial risk	Risk factors for cost aspects

Effort Expectancy

On the theme of effort expectancy, respondents agreed that there were problems with the display of notifications and location. Problems with them include the notification display causing delays in finding important information on the Nebengers application. Quoted from an interview with one of the respondents as follows:

"The downside is that it can be updated. It's the same as it is now. Sometimes, when there's an incoming message on the application, there's no notification, so the person requesting the application doesn't get caught, so they have to answer immediately. For example, if you open the application, you will see an incoming message." [W0305]

Meanwhile, problems with location made it difficult for respondents to create a meeting point for drivers and users who use the Nebengers application. Quoted from an interview with one of the respondents as follows:

"At least this is the only thing that seems to get lost if we search for the starting point and ending point, like that; if we open a trip like that, usually if we type one word, it will come out of the locations that we usually use as points. start, that's it." [W0202a]

"Sometimes at the end of the month, I type Semanggi, it doesn't come out, so we have to go back to the map, we look for it, the point is on the map, then we mark it ourselves, sometimes the shape isn't a word, it's like a coordinate like that. Maybe it's a bit difficult for the passenger who is used to it; for example, they complained several times, Bang Riko, how come the point has changed?" [W0202b]

Facilitating Conditions

On the facilitating conditions theme, respondents agreed that there were problems with the facilities provided by the Nebengers application and technical support from PT Suitmedia Kreasi Indonesia. Respondents complained about obstacles in application development. They even considered the application's sustainability because they saw no income for the operational costs. The following are excerpts from interviews with several respondents.

"For the application itself, this is the term because, at the moment, it doesn't hold anything; yes, the term doesn't pay much attention to awareness. So it's just like that, there's no development." [W0302]

"But not satisfied with the development of the application because it was never developed" [W0105]

"Hopefully this is sustainable, the CSR is sustainable, the operators too, the developers for this maintenance are also sustainable too" [W0207]

Respondents also complained about the lack of a reporting feature to report users or adverse events in Nebengers' operations. Several obstacles, such as sexual harassment, blocked users, and incidents while traveling, require users to use the report feature. The following are excerpts from interviews with several respondents.

"What is surprising is that there is no Report feature yet. So, who do you report to? This is a big question, considering the prevalence of sexual harassment in Indonesia. Just in case a passenger or driver does this, there is someone you can rely on. The thing is, I've seen drivers who only accept female passengers. "So, yes, you can report it directly, and then the complaint can be handled by Nebengers." [W0103]

"But recently, I have encountered a passenger who I could say was blocked; blocked means he often cancels suddenly for various reasons. Usually, I don't approve the application" [W0201]

"For all this time, what, during, maybe that time, when my car was carrying Nebengers, it broke down in the middle of the road. Fortunately, there is a Nebengers Whatsapp group, too, right? When I broke down in the middle of the journey, I immediately called them to ask if there were any that were still behind or not, if there were any that were empty or not, and if you pass them on to those that were empty. So we can communicate with each other. Sometimes, at Nebengers, the captain also shares it live. So you know where this one is, where this one is, you know that. So, who is still behind, just in case, for example, if there is trouble at the front, those at the back can help each other. Thank God we were united all this time." [W0301]

Then, respondents also complained about the absence of the community column that previously existed in the application. The following are excerpts from interviews with respondents.

"In the early days of Nebengers, there was a community column. Now the community column has been removed." [W0402]

Meanwhile, respondents also need a waiting list, reschedule, and payment features when using the Nebengers application. Until now, the absence of the following three features has been communicated manually via short message. The following are excerpts from interviews with respondents.

"Well, if someone cancels suddenly like that, then that's the waiting list; you can tell us that someone has canceled. Can I come? Oh yes, I can come. So there's news like that." [W0303]

"Usually, I inform passengers if the time will be canceled or the time will be rescheduled." [W0407]

"What needs to be improved is the chat and payment features. Until now, as far as I know, because there is no third party, Nebengers do not receive any commission, and payments are made manually between the driver and the passenger. "For now, because we are used to cashless or no cash, it would be better if we added a direct payment feature to the driver, maybe Nebengers could also make a profit from there" [W0504]

Regarding travel availability, respondents complained about the problem of seat slots on vehicles that needed to match the application and reality, resulting in trips that were ultimately carried out without the application or the term' private route'. The following are excerpts from interviews with several respondents.

"Regarding the availability of Nebengers, when we need something urgently, sometimes it's available, sometimes it's not there, or sometimes it can be canceled. For example, we have confirmed with the driver, but on the one hand, it turns out that the driver can suddenly, unilaterally cancel. Maybe he initially set a seat slot, for example, 4, but it turned out that his friend was joining Nebengers, so he prioritized someone he knew first, right? "Finally, people who have already joined may be unilaterally canceled by the Driver" [W0105b]

"Most of those who already know, mostly don't use applications and choose direct conversation by WhatsApp" [W0302b]

Hedonic Motivation

Regarding the hedonic motivation theme, respondents agreed that an SOP (standard operating procedure) is needed when using the Nebengers application. They stressed the importance of clear communication, and the absence of an SOP disrupts user comfort. SOPs are required for passengers and drivers. The following are responses from respondents during interviews when discussing driver SOPs.

"For example, we have confirmed with the driver, but on the other hand it turns out that the driver can also suddenly, unilaterally cancel. Maybe he initially set a seat slot, for example, 4, but it turned out that his friend was joining Nebengers, so he prioritized someone he knew first, right? "Finally, people who have already joined may be unilaterally canceled by the Driver" [W0105b]

"Yes, more than one post, one trip, more than that. Vehicle one at one o'clock, for example, first post at 5 o'clock, second post at 6 o'clock, second post, third post again and again. The term is spam, so those who use Nebengers are too lazy to search and scroll down because most of them are close to that one person. Most of it comes from travel. I already know the Nebengers, too. So make more than one schedule, even more than five, it could be five" [W0302c]

Meanwhile, the responses from respondents during interviews when discussing passenger SOPs were as follows.

"At Nebengers, we use a booking system; I remember that booking at Nebengers doesn't limit the number of people riding, so it can be in two or three different cars; from my understanding, it can be more than one." [W0107]

"Because if not, maybe the driver will be harmed if that happens. He applied, and there was no punishment for the passenger; he applied to everyone first. Then, in the end, he canceled at the last minute." [W0202c]

Habit

On the Habit theme, respondents complained that the habit of unilateral cancellation of the use of the Nebengers application resulted in financial losses for respondents. Respondents stated this during the interview in the following quote.

"The biggest thing is that it's a sudden cancellation like that, right? "The thing is, we also give savings to others." [W0303]

"The issue is, if the driver of the bet doesn't apply, he could suffer a loss. He applies, no punishment for the passenger, and then suddenly cancels at the last minute." [W0202c]

Discussions

The frequency of construct emergence during thematic analysis can be seen in Table 6.

Table 6. Number of Initial Theme in the Construct

No.	Construct	Frequency
1	There is a unilateral cancellation	15
2	Travel availability constraints	9
3	There is no payment feature	11
4	There is no reschedule feature	1
5	There is no waiting list feature	1
6	There is no reporting feature	5
7	The community column does not exist	1
8	Application development constraints	15
9	Problematic chat feature	3
10	Problematic location feature	14
11	Problematic notification feature	2

No.	Construct	Frequency
12	There is no SOP for travel drivers	6
13	There is no SOP for traveling passengers	13

After doing thematic analysis, the result shows that the final result of factor mapping consists of 4 factors, which can be seen in Table 7.

Table 7. The Factor Mapping

Factors	Subtheme	Initial Theme
Effort Expectancy	Interface Clarity	Problematic chat feature; Problematic location feature; Problematic notification feature
Facilitating Conditions	Accessibility	Travel availability constraints
	Resource Availability	There is no payment feature; There is no reschedule feature; There is no waiting list feature
	Support Availability	There is no reporting feature; The community column does not exist
	Infrastructure Support	Application development constraints
Hedonic Motivation	Convenience	There is a unilateral cancellation
Habit	Financial risk	There is no SOP for travel drivers; There is no SOP for traveling passengers

Meanwhile, the other three factors, Performance Expectancy, Social Influence, and Price Value, do not influence the decline in the use of the Nebengers application. The comprehensive factor mapping research has provided us with a clear understanding of the factors influencing the decline in trip completion in the Nebengers application. The results are detailed in Figure 5.
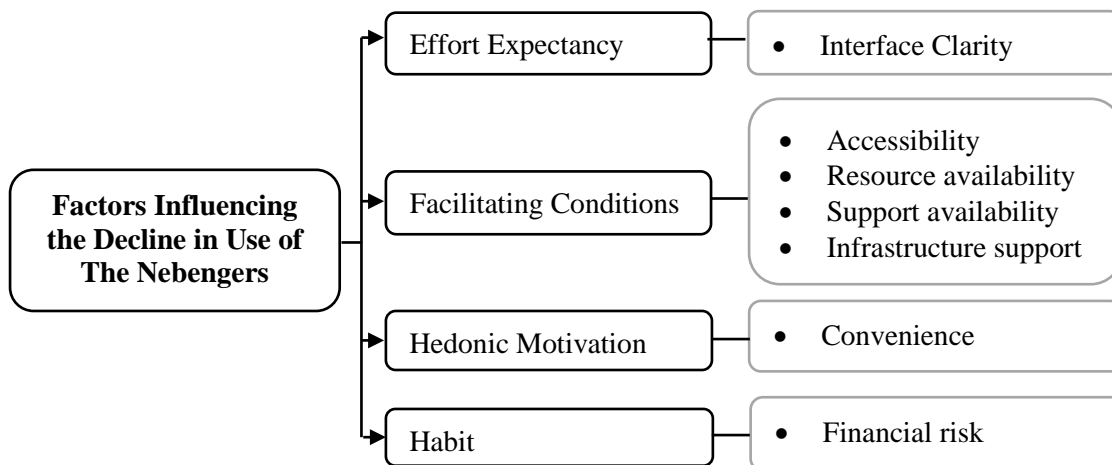

Figure 5. Final Result of Mapping Factors Influencing the Decline in Use of The Nebengers

The first study conducted on Nebengers application users showed similarities in the negative perceptions experienced by each user and their desires for application improvements. Nebengers users prioritize interface clarity, application support, convenience, and, in this case, the implementation of standard operating procedures and financial risk. The clarity of the interface of this transportation application has been discussed by Nguyen-Phuoc et al. (2021), who agrees with the importance of application quality as a whole process for continuous usage intention. The process in question is the

quality when ordering in and after ordering in the application. Meanwhile, regarding order cancellation, which causes a lack of user convenience (Wang et al., 2020), supported by the creation of the Confirmed-Order Cancellation Rate (COCR) shows similarities with this study, including suggestions for potential improvement by appropriately designed penalty or compensation strategies (Li et al., 2023) which Nebengers owners can implement.

Research by Nguyen-Phuoc et al. (2022) states that three factors, namely perceived benefits of the booking app, perceived sales promotion, and perceived service quality, which affect customer loyalty in ride-hailing Vietnam, turn out that only two are related to Nebengers in Indonesia. The perceived sales promotion factor is not included among the factors influencing the decline in using the Nebengers application. This is directly proportional to research by Belgiawan et al. (2022) that shows that cost is negatively significant in ride-sourcing choice. The comfort and reliability variables are significant, so application support for user comfort is important. Ultimately, this study shows that to maintain users, Nebengers owners ensure their service quality meets users' expectations to increase trust and satisfaction, which affects users' loyalty.

Conclusions

The study identified themes of factors that influence the use of the Nebengers application, namely: (1) Effort Expectancy Factor Theme with the sub-theme Interface Clarity, (2) Facilitating Conditions Factor Theme with sub-themes Accessibility, Resource availability, Support availability, and Infrastructure support, (3) Hedonic Motivation Factors theme with Convenience sub-theme, (4) Habit Factors Theme with Financial risk sub-theme.

The theoretical implications of this study lie in its contribution to the growing body of knowledge surrounding ride-sharing platforms and user experience design. By identifying critical features such as notifications, location services, payment systems, and community engagement, the research provides a framework for understanding how these elements influence user satisfaction and adoption. Furthermore, it highlights the importance of integrating user-specific needs, such as distinguishing between driver and passenger roles, to refine theoretical models of user behavior in shared mobility ecosystems. This study also underscores the intersection of technology and policy, emphasizing the need to examine governmental measures and their theoretical impact on user behavior and market dynamics in the ride-sharing industry.

The practical implications of the study are particularly relevant for developers and policymakers. For Suitmedia, the findings provide actionable insights to enhance the Nebengers app by prioritizing features that meet user needs and align with operational policies and resources. Implementing Standard Operating Procedures (SOPs) for users can also improve platform reliability and user trust. Additionally, understanding the role of marketing strategies in increasing user numbers offers a strategic direction for application promotion. Lastly, the study suggests that policymakers should consider how regulations to reduce private vehicle use could indirectly boost ride-sharing adoption, enabling a more sustainable transportation system in Indonesia.

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