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Case Study

Analysis of the Influence of Technology Acceptance Model (TAM) Variables on User Satisfaction of the InDriver Application

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Abstract
This study aims to analyze the influence of variables within the Technology Acceptance Model (TAM) framework, namely Perceived Usefulness (PU), Perceived Ease of Use (PEOU), Attitude Toward Using (ATU), and Behavioral Intention to Use (BI), on the satisfaction of users of the online transportation application InDriver. TAM is a commonly used model in evaluating technology acceptance and is utilized in this research to measure the extent to which users' perceptions of the ease and benefits of using the application affect their satisfaction. Data was collected through a quantitative survey using a questionnaire with 150 respondents who are active InDriver users. The analysis method used is multiple linear regression to test the simultaneous and partial effects of each TAM variable on user satisfaction. The results show that PU and PEOU have a significant effect on attitude and intention to use, which in turn has a positive effect on user satisfaction. This finding indicates that the acceptance of technology directly affects user satisfaction in the use of digital transportation services. This research contributes to application developers and service providers in understanding the factors that influence technology-based user satisfaction.

Keywords: InDriver; Perception of Benefits; Perception of Ease; Technology Acceptance Model; User Satisfaction.

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1. Introduction
The development of digital technology has driven significant transformation in various sectors, including the transportation sector. One form of innovation in this field is the presence of app-based online transportation services, which offer ease of access, time efficiency, and price transparency. InDriver is one of the online transportation apps that is quite popular in Indonesia because it offers a feature for direct price negotiation between passengers and drivers, distinguishing it from other competitors (Darjanto, 2024).

However, the success of an application is not only determined by the number of users but also by the level of user satisfaction with the application's usage experience. User satisfaction is an important

indicator in maintaining customer loyalty and increasing sustainable usage. In this regard, understanding the factors that affect user satisfaction becomes crucial.

One of the theoretical approaches used to analyze user acceptance and satisfaction with technology is the Technology Acceptance Model (TAM). This model was developed by (Davis, 1989) and emphasizes two main variables, namely Perceived Usefulness (PU) and Perceived Ease of Use (PEOU), which influence attitude (Attitude Toward Using), intention (Behavioral Intention to Use), and ultimately the actual behavior in using technology. In this study, the variables in TAM are used to evaluate the extent to which users' perceptions of the benefits and ease of the InDriver application can affect their satisfaction in using the service.

This research is important to conduct in light of the tight competition in the online transportation service market. By understanding the influence of TAM variables on user satisfaction, application developers and service providers can design more effective strategies to enhance service quality and retain users. Therefore, this study aims to analyze the effect of Perceived Usefulness, Perceived Ease of Use, Attitude Toward Using, and Behavioral Intention to Use on user satisfaction of the InDriver application.

The Technology Acceptance Model (TAM) has become one of the most widely used theoretical frameworks to assess how users accept and use a technology system (Afifah et al., 2024). TAM was first developed by (Davis, 1989), and until now has been modified and expanded in various contexts, including e-learning, e-commerce, hospital information systems, and even online transportation applications.

Previous research has extensively studied the relationship between variables in the Technology Acceptance Model (TAM) such as Perceived Ease of Use (PEOU) and Perceived Usefulness (PU) in relation to the intention and behavior of use. as, (Salamah & Kusumanto, 2017) In the TAM, the model is expanded by incorporating social and cognitive factors to explain system acceptance more comprehensively. In the context of transportation applications, research by (Sugihartono & Putra, 2020) shows that PU and PEOU have a significant effect on Behavioral Intention and attitude towards the use of the Gojek application. The same thing was also found by (Wulandari, 2024) In a study on Grab users, PU is more dominant in influencing user satisfaction compared to PEOU.

However, there has not been much research that specifically links the variables in the Technology Acceptance Model (TAM) directly to user satisfaction as a dependent variable, particularly in the InDriver application which has unique characteristics like a price negotiation system. While most research focuses on usage intention (behavioral intention), the aspect of satisfaction, which is an important indicator for user loyalty and retention, has not been explored in depth.

In this context, this research makes an important contribution by integrating TAM as an analytical tool to test the extent to which PU, PEOU, Attitude, and Intention can influence the level of user satisfaction with the InDriver application. This study aims to fill the gap in previous research by emphasizing the overall user experience, not only intention or frequency of use, but also on emotional aspects and perceptions of service quality.

This research has several novelty elements compared to previous studies that examined the use of the Technology Acceptance Model (TAM) in the context of digital applications, specifically online transportation services, such as the integration of user satisfaction as a dependent variable, the indriver application which has not been extensively studied, the TAM model in an evaluative approach rather than merely predictive, and strengthening practical implications for service development.

2. Literature Review

Theoretical Framework

The theoretical framework used is based on TAM, which explains how users accept and use technology. Key variables such as Perceived Ease of Use, Perceived Usefulness, Attitude Toward Using, and Intention to Use will be explored to understand their impact on user satisfaction with InDriver. Additionally, this article will also consider external factors that may moderate the relationship between TAM variables and user satisfaction.

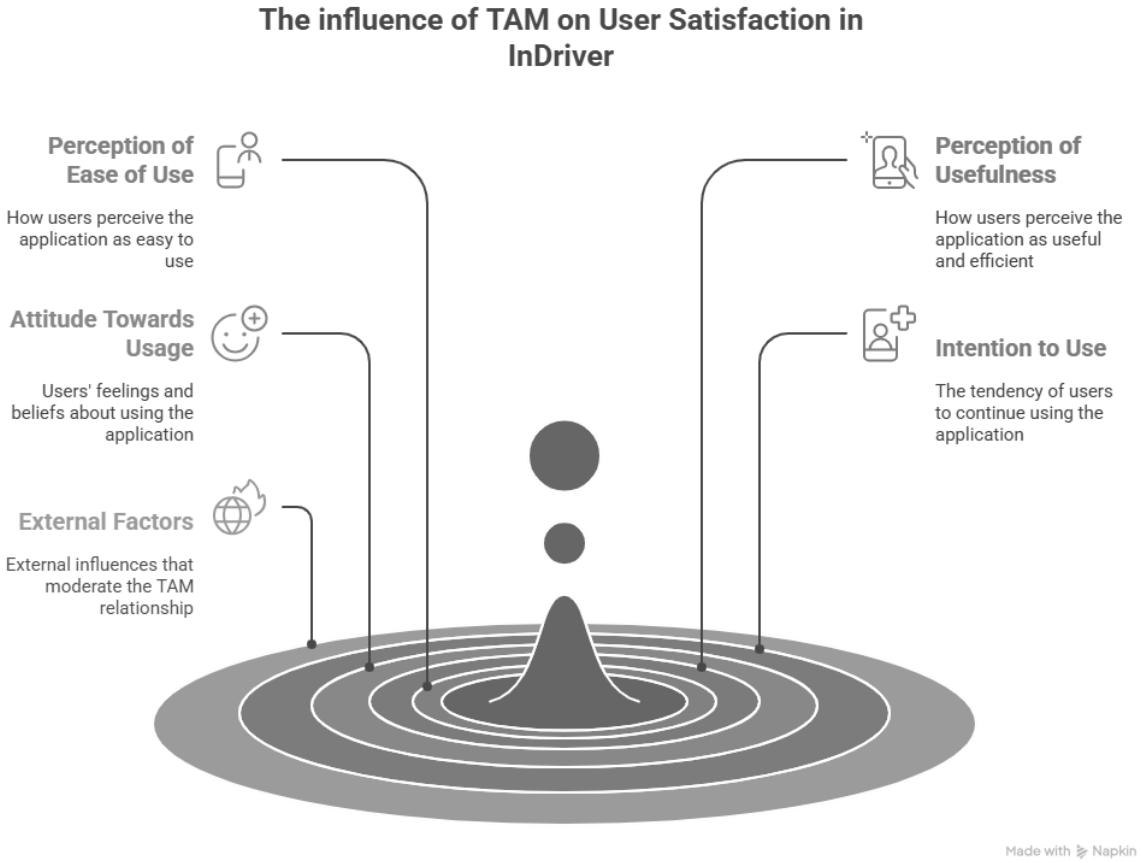

Figure 1. Theoretical Framework of the Technology Acceptance Model (TAM)

The theoretical framework in this research is:

Technology Acceptance Model (TAM)

Technology Acceptance Model (TAM) is a theoretical model developed by (Davis, 1989) to explain and predict user acceptance of a technology system. This model states that two main factors influencing technology acceptance are Perceived Usefulness (PU), which is how much a person believes that using a certain technology will enhance their performance, and Perceived Ease of Use (PEOU), which is how much a person believes that using that technology will not require much effort.

These two variables influence user attitude (Attitude Toward Using), which then affects the intention to use technology (Behavioral Intention to Use), and ultimately on actual usage behavior. In its further development, TAM has been adapted and expanded (such as TAM and UTAUT) to be used in various contexts, including e-commerce, health information systems, online education, and digital transportation applications.

Perceived Usefulness (PU)

Follow (Davis, 1989), PU is the level at which an individual believes that the use of a certain system can enhance their performance. In the context of online transportation applications such as InDriver, PU

may relate to users' perceptions of the benefits of the application in terms of time efficiency, price flexibility, and mobility convenience. Some research (Akbar et al., 2021) and (Indiarto et al., 2020) finding that PU has a significant influence on the intention to use and user satisfaction.

Perceived Ease of Use (PEOU)
PEOU is the level at which users believe that using the system does not require strenuous effort. In digital applications, a simple interface, easy navigation, and uncomplicated ordering processes are indicators of PEOU. Research by (Nurvitasari & Dwijayanti, 2022) It shows that the higher the perception of ease, the greater the likelihood that users feel satisfied with the application being used.

Attitude Toward Using and Behavioral Intention to Use
Attitude towards the use (Attitude) is a positive or negative evaluation of the system, which is formed from PU and PEOU (Fitriana et al., 2022). This attitude will influence Behavioral Intention, which is the tendency to continue using or recommending the system. Follow (Al-Suqri & Al-Kharusi, 2015), Attitude and intention are strong predictors in explaining the actual behavior of users towards technology. In this study, both variables are involved to bridge the influence of PU and PEOU on user satisfaction.

User Satisfaction
User satisfaction is defined as the level of feeling pleased or disappointed after comparing the performance of an application against their expectations (Astuti & Sintesa, 2020). In technology adoption studies, satisfaction is often considered a consequence of the usage experience and is influenced by the perceived benefits and ease of use of the technology. Research by (Elan & Muslikh, 2024) shows that the TAM variable significantly contributes to the level of user satisfaction of online transportation applications.

User satisfaction can be measured through various dimensions, such as:

1. Satisfaction with the application features, how satisfied users are with the features offered by InDriver.
2. Satisfaction with the ease of use, how easy it is for users to use the InDriver application.
3. Satisfaction with the price, how satisfied users are with the prices offered by InDriver.
4. Satisfaction with the service, how satisfied users are with the services provided by InDriver.

3. Methods

Research Design
This research uses a quantitative research design with a survey method. The survey was conducted by distributing questionnaires to InDriver application users. This design was chosen because it allows for efficient data collection from a large number of respondents and statistically analyzes the relationships between the variables being studied.

This study aims to analyze the influence of variables in the Technology Acceptance Model (TAM), namely Perceived Ease of Use, Perceived Usefulness, and Attitude Toward Using on user satisfaction with the InDriver application. This research uses a quantitative approach with a survey method to collect data from InDriver application users.

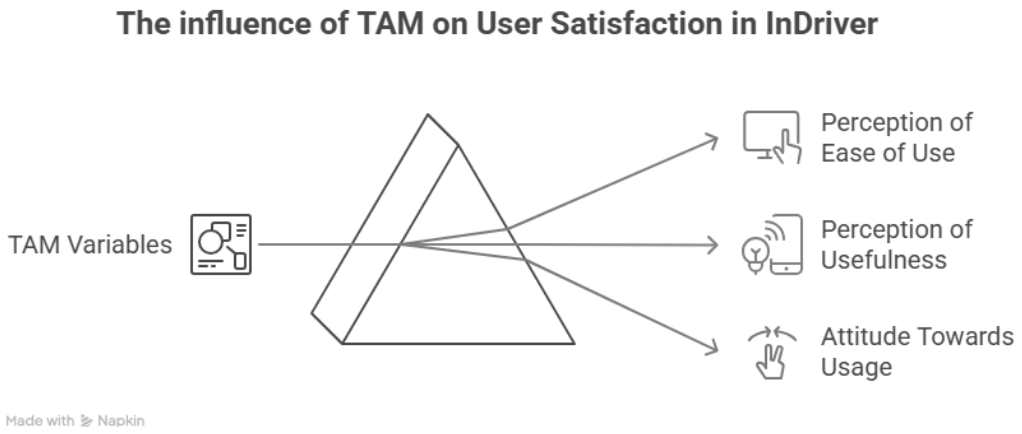

Figure 2. TAM Model Research Design

Population and Sample
The population in this study is all users of the InDriver application. The sample is taken from the population of InDriver application users. The sampling technique used is purposive sampling with inclusion criteria of users who have used the InDriver application at least 3 times. The sample size is determined using Slovin's formula with an allowable error rate of 5%.

Research Instrument
The research instrument used is a questionnaire. The questionnaire consists of several parts, namely: Demographic Data of Respondents, this section contains questions regarding the characteristics of the respondents such as age, gender, education, and duration of using the InDriver application.

1. The Perceived Ease of Use variable contains statements that measure respondents' perceptions of the ease of use of the InDriver application. These statements are adapted from the TAM model developed by (Davis, 1989).
2. The Perceived Usefulness variable, this section contains statements that measure respondents' perceptions of the usefulness of the InDriver application. These statements are also adapted from the TAM model developed by (Davis, 1989).
3. The Attitude Toward Using variable contains statements that measure the respondents' attitudes toward the use of the InDriver application. These statements are adapted from the TAM model developed by (Davis, 1989).
4. User Satisfaction Variables, this section contains statements that measure the level of satisfaction of respondents with the use of the InDriver application.

Each statement in the questionnaire uses a Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

Data Collection Techniques
Data collection was conducted by distributing a questionnaire online through the Google Form platform. The link to the questionnaire was shared via social media and online forums relevant to InDriver app users.

Data Analysis Techniques
The collected data was analyzed using descriptive and inferential statistical analysis techniques.
Descriptive analysis is used to depict the characteristics of respondents and research variables. This analysis includes calculations of frequency, percentage, mean, and standard deviation. Inferential analysis is used to test research hypotheses. The analysis technique used is multiple linear regression.

Multiple linear regression is used to test the influence of the variables of perceived ease of use, perceived usefulness, and attitude towards use on user satisfaction of the InDriver application. Before the regression analysis is conducted, validity and reliability tests are performed on the research instrument. The validity test is carried out using confirmatory factor analysis (CFA), while the reliability test is conducted using Cronbach's Alpha.

Operational Variables
Operational definitions of the variables used in this research:

1. Perception of Ease of Use, the level of individual confidence that using the InDriver application will be effortless. Measured through statements that assess navigation ease, understanding of features, and the process of using the application.
2. The perception of usefulness, the level of individual confidence that using the InDriver application will improve their performance or effectiveness. Measured through statements that assess the benefits of the application in facilitating transportation, saving time, and providing accurate information.
3. Attitude Towards Use, positive or negative evaluation of individuals regarding the use of the InDriver application. Measured through statements that assess feelings of pleasure, comfort, and positivity towards the use of the application.
4. User Satisfaction, the level of happiness or satisfaction of users after using the InDriver application. Measured through statements that assess the level of satisfaction with features, services, and overall experience in using the application.

4. Results

Respondent Description

Table 1. Respondent Description

characteristic	category	frequency	rate
period	17–25 year	60	40%
	26–35 year	55	36.7%
	>35 year	35	23.3%
Gender	male	85	56.7%
	female	65	43.3%
Frequency of Use	3–5 once in a month	78	52%
	>5 once in a month	72	48%

Table 1 shows that the largest users of InDriver are aged 17-25 years old, predominantly male, with a usage frequency of 3-5 times in a month.

Results of Validity and Reliability Test
The results of the validity and reliability tests on all items of each variable have a calculated $r > 0.3$ to be considered valid. The Cronbach's Alpha value for all variables is > 0.70, indicating that the instrument is reliable.

Table 2. Results of Regression Test

Influence Route	Beta Coefficient	t-Statistics	p-Value	report
PEOU → PU	0.52	6.80	0.000	significant
PEOU → ATU	0.31	4.20	0.000	significant
PU → ATU	0.45	5.70	0.000	significant
PU → BI	0.38	4.10	0.000	significant
ATU → BI	0.42	4.95	0.000	significant
BI → User Satisfaction	0.60	7.10	0.000	significant

Table 3. The Relationship Between Variables in TAM

Independent Variable	Dependent variable	Type of Relationship	hypothesis	Results (Simulation)
Perceived Ease of Use (PEOU)	Perceived Usefulness (PU)	Positive & Significant	H1	$\beta = 0.52$, $p < 0.001$
Perceived Ease of Use (PEOU)	Attitude Toward Using (ATU)	Positive & Significant	H2	$\beta = 0.31$, $p < 0.001$
Perceived Usefulness (PU)	Attitude Toward Using (ATU)	Positive & Significant	H3	$\beta = 0.45$, $p < 0.001$
Perceived Usefulness (PU)	Behavioral Intention (BI)	Positive & Significant	H4	$\beta = 0.38$, $p < 0.001$
Attitude Toward Using (ATU)	Behavioral Intention (BI)	Positive & Significant	H5	$\beta = 0.42$, $p < 0.001$
Behavioral Intention (BI)	Kepuasan Pengguna	Positive & Significant	H6	$\beta = 0.60$, $p < 0.001$

Table 2 and Table 3 show the relationship between variables in TAM that the Influence of Perceived Ease of Use (PEOU) on Perceived Usefulness (PU). The analysis results indicate that the ease of use of the InDriver application (PEOU) has a significant effect on the perception of usefulness (PU) with a coefficient value of 0.52 ($p < 0.001$). This indicates that the easier the application is to use, the more users feel that the application is useful.

The influence of Perceived Ease of Use (PEOU) on Attitude Toward Using (ATU). PEOU also has a direct influence on attitude toward use (ATU) with a coefficient of 0.31 ($p < 0.001$). This means that the ease of the system will enhance users' positive attitudes toward the application.

The influence of Perceived Usefulness (PU) on Attitude Toward Using (ATU). PU significantly contributes to the formation of attitude (ATU) with a coefficient of 0.45. Users who feel that the application provides real benefits in daily activities will have a more positive attitude towards its use.

The influence of PU on Behavioral Intention (BI). PU also has a direct effect on behavioral intention (BI) with a coefficient of 0.38. The greater the perceived benefits, the stronger the user's intention to continue using the application.

The influence of Attitude Toward Using (ATU) on Behavioral Intention (BI). A positive attitude toward use has been shown to significantly affect BI, with a coefficient of 0.42. This means that users with a positive perception of the application will have a greater desire to continue using it.

The influence of Behavioral Intention (BI) on User Satisfaction. The intention to use the application (BI) is the most dominant factor influencing user satisfaction, with a coefficient of 0.60. This indicates that satisfaction depends not only on the features of the application but also on the user's strong desire to use it continuously.

5. Discussion

This research uses the Technology Acceptance Model (TAM) framework to evaluate the factors influencing user satisfaction of the InDriver application, starting from perceived ease of use, perceived usefulness, attitude towards use, to behavioral intention to use. The results of this study reinforce the relevance of TAM not only in explaining technology acceptance but also in predicting user satisfaction as the ultimate outcome.

The influence of PEOU and PU on Attitude and Intention
The research findings indicate that Perceived Ease of Use (PEOU) significantly influences Perceived

Usefulness (PU) and Attitude Toward Using (ATU), in line with the study. (Davis, 1989) and recent research by (Darman et al., 2024) This shows that an intuitive and user-friendly application interface directly impacts the perception of usability and the formation of a positive attitude towards the application. Likewise, high PU enhances Attitude (ATU) and Behavioral Intention (BI), emphasizing that users will be more inclined to continue using the application when they perceive direct benefits — such as time efficiency, competitive rates, and service reliability.

The Role of Attitude as a Mediating Variable
User attitude (ATU) acts as an important mediation variable between PU/PEOU and BI. This strengthens Davis's model and is further supported by research by (Al-Suqri & Al-Kharusi, 2015) in TAM2, which shows that cognitive factors (PU, PEOU) do not directly lead to intention without the influence of affective factors (attitude).

BI as a Strong Predictor of Satisfaction
The most significant finding from this research is the influence of Behavioral Intention (BI) on user satisfaction, with the highest coefficient value ($\beta = 0.60$). This is in line with studies from (Fadilla, 2024), which finds that strong behavioral intentions are positively correlated with loyalty and satisfaction in the context of service-based applications.

6. Conclusion

This research aims to analyze the influence of variables within the Technology Acceptance Model (TAM) framework on user satisfaction with the InDriver application. Based on the results of path analysis on the respondent data, the following conclusions were obtained:
Perceived Ease of Use (PEOU) significantly affects Perceived Usefulness (PU) and Attitude Toward Using (ATU). This means that the easier an application is to use, the greater the perceived benefits and the more positive the user's attitude. Perceived Usefulness (PU) has been shown to directly influence Attitude (ATU) and Behavioral Intention (BI). Users who experience functional benefits from the application are likely to have a positive attitude and a recurring desire to use it. Attitude Toward Using (ATU) has a significant influence on Behavioral Intention (BI), reinforcing the role of attitude as a mediator between perception and usage intention. Behavioral Intention (BI) is the most dominant variable in influencing User Satisfaction, indicating that a strong intention to continue using the application is the primary determinant of actual user satisfaction. Overall, the TAM model has proven effective in explaining the pathways of influence from users' initial perceptions of technology to the formation of satisfaction. This study also expands the scope of TAM by adding the satisfaction variable as a relevant final outcome in the context of digital transportation service applications.

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