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Analysis of the Influence of Online Transportation Application Usage Using the EUCS Model in Measuring User Satisfaction in Bandung City (Case Study: InDrive Users)

Imannudin Akbar¹, Hilma Anggraeni², Chairul Habibi³, Arif Bakti Nugraha⁴

Universitas Informatika dan Bisnis Indonesia^{1,2,3,4}

imannudin@unibi.ac.id¹, hilma.anggraeni33@gmail.com², chairul@unibi.ac.id³, arifbakti@unibi.ac.id⁴

Abstract

The swift advancement of technology has profoundly influenced the transportation industry, especially in digital transportation services. InDrive provides a Peer-to-Peer transportation service for passengers, wherein travel conditions are established through agreements between passengers and drivers. This study seeks to assess user happiness with the InDrive application in Bandung utilizing the End User Computing Happiness (EUCS) model. A quantitative methodology was utilized to gather data via online questionnaires from a sample of 201 active InDrive customers in Bandung who have utilized online transportation services. The hypotheses were tested using SEM-PLS analysis with SmartPLS 3.0 software. The findings indicate that four factors—content, Accuracy, Ease of Use, and Timeliness—positively and significantly affect user satisfaction. One of the five proposed hypotheses was rejected: the Format variable had no significant impact on user satisfaction, evidenced by a t-statistic of 0.701, below the t-table value of 1.972, and a p-value of 0.484, surpassing the significance threshold of 0.05.

This research highlights the necessity to improve the aspects that influence user happiness. Enhancing Content, Accuracy, Usability, and Timeliness will enable InDrive to improve service quality and user experience. The minimal influence of the Format variable indicates a necessity for additional research, offering critical insights for players in the online transportation industry to enhance their services and align more closely with user expectations.

Keywords : Online Transportation, User Satisfaction, EUCS, InDrive, SEM-PLS

INTRODUCTION

The swift advancement of technology has profoundly influenced the transportation industry, especially in digital transportation services. InDrive provides a Peer-to-Peer transportation service for passengers, wherein travel conditions are established through agreements between passengers and drivers. This study seeks to assess user happiness with the InDrive application in Bandung utilizing the End User Computing Happiness (EUCS) model. A quantitative methodology was utilized to gather data via online questionnaires from a sample of 201 active InDrive customers in Bandung who have utilized online transportation services.

The hypotheses were tested using SEM-PLS analysis with SmartPLS 3.0 software. The

findings indicate that four factors—content, Accuracy, Ease of Use, and Timeliness—positively and significantly affect user satisfaction. One of the five proposed hypotheses was rejected: the Format variable had no significant impact on user satisfaction, evidenced by a t-statistic of 0.701, below the t-table value of 1.972, and a p-value of 0.484, surpassing the significance threshold of 0.05.

This research highlights the necessity to improve the aspects that influence user happiness. Enhancing Content, Accuracy, Usability, and Timeliness will enable InDrive to improve service quality and user experience. The minimal influence of the Format variable indicates a necessity for additional research,

offering critical insights for players in the online transportation industry to enhance their services and align more closely with user expectations.

The Indonesian Internet Service Providers Association (APJII) reports that the 2024 internet penetration survey indicates an internet usage rate of 79.5% in Indonesia as of January 2024, equating to 221.6 million individuals from a total population of 278.6 million. This signifies a 1.4% rise from the prior period. The increasing internet penetration rate is expected to influence online transportation services in Indonesia positively. Expanded internet availability facilitates public access to online transportation services. Individuals familiar with internet usage are more inclined to choose online transportation services as a secure, convenient, and pleasant option for everyday movement.

This innovation offers solutions that streamline the booking, payment, and tracking of journeys via intelligent applications for customers. Utilizing digital technology, users may effortlessly access these services, select their mode of transportation, and circumvent the complexities of currency transactions via digital payment systems. This advancement not only revolutionizes mobility but also establishes an interconnected transportation network.

In 2015, the ride-hailing sector in Indonesia attained a valuation of \$980 million. By 2019, this amount rose to \$5.7 billion and is anticipated to reach \$18 billion by 2025, positioning Indonesia as the largest market in Southeast Asia (ASEAN). This underscores the importance of ride-hailing in Indonesia's economic and technological advancement and its prospective influence on the market and consumers.

Various online transportation service programs, like InDrive, Maxim, Gojek, and Grab, provide comparable services for the transportation of individuals, food, and commodities. Despite the variability in costs, the booking systems maintain consistency. These online transportation service applications are accessible on Android and iOS devices. The diverse range of applications enables customers to select the one that most effectively meets their requirements and preferences. When choosing an online transportation service, various variables are evaluated, including equitable price, convenience of booking, service quality, and reliability of the transportation provider.

InDrive is one of the online transportation services presently offered in Indonesia. InDrive commenced operations in Indonesia in 2019. This rival to Grab and Gojek has achieved over 175 million downloads, ranking second among the most downloaded mobility applications in 2022. InDrive's distinctive feature differentiates it from its competitors, enabling passengers to negotiate fares with drivers until both sides establish an agreeable price for the route both sides establish. Moreover, it provides various services, encompassing urban excursions, intercity transportation, parcel delivery, freight shipment, and relocation assistance.

InDrive features a Safety+ Module to augment safety and comfort while enhancing service quality. This presents InDrive with the opportunity to evaluate Bandung as a prospective region that can fulfill consumer needs for online transportation in the digital era.

Data from Google PlayStore indicates a variety of reviews from InDrive users, encompassing both favorable and unfavorable remarks. Users have expressed concerns about deficiencies with InDrive's services, including erroneous distance estimations, wrong pickup locations, and a convoluted smartphone layout that diminishes user satisfaction. This suggests that application system problems can profoundly impact user happiness.

The aforementioned difficulties provide a basis for assessing success from the user's viewpoint. Research conducted by (Setyaningsih, 2023), titled "Analysis of User Satisfaction with Online Transportation Applications Using EUCS," indicates that user satisfaction is a critical component in determining the success of an application. This study d(Budi Pratomo et al., 2023)emonstrates that the timing variable does not significantly influence user happiness. It reveals additional elements that substantially influence user satisfaction, including content, accuracy, format, and usability. This demonstrates that InDrive seeks to attain consumer happiness by fulfilling their requirements.

Consequently, to analyze user satisfaction with the InDrive application, the researcher measures user satisfaction through the EUCS model (Doll & Torkzadeh, 1988), commonly used to measure user satisfaction with technology.

The evaluation of customer satisfaction with the Gojek online transportation application in Surabaya, utilizing the EUCS methodology, revealed that among the five dimensions, accuracy and timeliness are the areas identified

for enhancement (Chantika, 2022). The research entitled "Analysis of User Satisfaction with Maxim Application Using the End-User Computing Satisfaction (EUCS) Model" indicates that, of the five EUCS model variables, Accuracy, Format, Ease of Use, and Timeliness significantly impact user satisfaction. In contrast, the Content variable has no significant effect (Budi Pratomo et al., 2023).

User Satisfaction in Online Transportation Applications

User satisfaction is a critical determinant of the success of mobile applications, particularly in transportation services. Studies indicate that service quality, responsiveness, and reliability influence user perceptions and satisfaction levels (Hamzah et al., 2021; Justitia et al., 2019). (Anggraeni, 2021) discovered that multiple facets of user experience affect user happiness.

EUCS Model

The EUCS model is a thorough instrument for assessing user satisfaction, emphasizing dimensions that affect the overall experience. (Dienislami & Indrati, 2023)This model posits that user satisfaction is influenced by content, denoting the relevance and quality of information; accuracy, concerning the truthfulness and reliability of the information; format, relating to the presentation and organization of information; ease of use, reflecting the user-friendliness of the application; and timeliness, associated with the speed of service and information delivery. (Aulia et al., 2022; Prabawanti & Sihombing, 2023) Prior studies indicate that these aspects significantly improve user satisfaction and can be customized to meet the specific requirements of online transportation systems.

Application of EUCS Model in Transportation

Many studies have employed the EUCS model to assess user satisfaction in transportation applications. The research by Parwadi & Sofa, (2024) illustrates that usability and accuracy significantly influence user satisfaction with ride-hailing services. Alshehri & O'Keefe (2019) contend that prompt and dependable information is crucial for maintaining high levels of client satisfaction on online transportation platforms.

The aforementioned difficulties indicate that challenges faced by users of the InDrive application can impact user satisfaction. This research aims to assess the degree to which user happiness impacts the utilization of the InDrive application and produce study findings that evaluate its effectiveness.

METHOD

This study utilizes a quantitative research methodology. Characterizes the quantitative

method as a classic approach due to its prolonged usage and established status as a research methodology. This approach is termed positivistic because of its foundation in the philosophy of positivism. It is regarded as a scientific approach because it fulfills scientific criteria: concrete, empirical, objective, measurable, rational, and systematic. This approach is called the discovery technique, as it can reveal and advance diverse new technologies and scientific fields. The research is classified as quantitative due to its reliance on numerical data and statistical analysis. The research assesses end-user satisfaction with the InDrive application, which is contingent upon the selected methodology.

The researcher developed a framework to act as a reference to enhance the study process, guaranteeing that the undertaken activities are more systematic and focused. The research framework is delineated as follows:

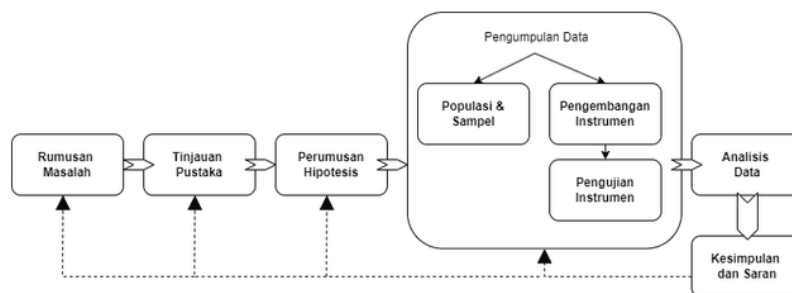


Figure 1. Research Framework

Data collection technique

Data-collecting approaches represent the most critical phase in research, as the primary objective is to get data. Without comprehending data collection methodologies, the researcher will fail to obtain data that adheres to the set criteria. This study essentially utilizes primary data gathering methodologies, which encompass:

Literature review

A literature review is a data collection method that entails compiling material from research papers, scholarly books, articles, and journals pertinent to the subject. This research employs primary data from surveys distributed to users of the InDrive online transportation service.

Questionnaire

A questionnaire as a data-gathering method that entails presenting a series of written questions or statements to respondents for their responses. Questionnaires serve as a practical data collection approach when researchers are confident in the variables to be assessed and understand the anticipated responses from participants. Furthermore, questionnaires are appropriate when the respondent pool is extensive and geographically dispersed. They may comprise closed or open questions and can be administered personally to respondents or distributed via mail or the Internet.

This study used a Likert scale featuring six response possibilities. Asserts that the Likert

scale assesses attitudes, views, and perceptions of people or groups concerning social issues. The Likert scale disaggregates the variable to be assessed into specific indications. These indicators provide a foundation for creating items for the instrument, which may consist of statements or questions. The replies for each item utilizing the Likert scale vary from highly positive to highly negative, denoted by the following terms: Strongly Agree (SA), Agree (A), Slightly Agree (SA), Disagree (D), Strongly Disagree (SD), and Very Strongly Disagree (VSD). The subsequent table displays the Likert scale employed in this study:

Table 1. Likert Scale Instrument

No	Alternative Answers	Score	
		Positive Statement	Negative Statement
1	Strongly Agree (SA)	6	1
2	Agree (A)	5	2
3	Slightly Agree (SA)	4	3
4	Disagree (D)	3	4
5	Strongly Disagree (SD)	2	5
6	Very Strongly Disagree (VSD)	1	6

Data Analysis Techniques

Asserts that data analysis procedures encompass the categorization of data by variables and respondent categories, the tabulation of data according to the investigated variables, the execution of calculations to resolve the problem statement, and the assessment of calculations to evaluate the provided hypotheses. Data analysis techniques aim to interpret and elucidate the

information derived from the data. This study utilizes the Structural Equation Model (SEM) approach for data analysis, explicitly employing Partial Least Squares (PLS).

The Structural Equation Model (SEM) is a multivariate analytical technique employed to elucidate the concurrent linear relationships between observable variables (indicators) and

unobservable variables (latent variables). Partial Least Squares (PLS) denote latent variables that cannot be directly measured but must be evaluated through many indicators. Assert that

PLS-SEM is a method employed to assess and yield adequately robust results suitable to interval, nominal, and ratio data scales.

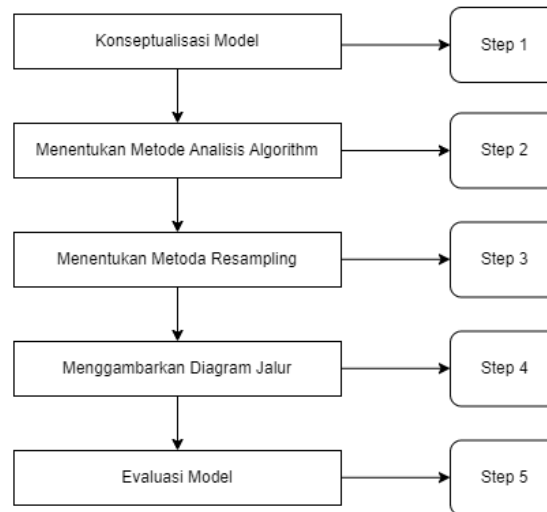


Figure 2. Analysis Stages Using PLS-SEM

Hypothesis Testing

Hypothesis testing in PLS entails evaluating the parameters λ in the measurement model and the parameters β and γ in the structural model. The bootstrap resampling technique is employed as a mechanism for this evaluation. This method enables the data to possess an independent distribution that does not depend on a normal distribution or a substantial sample size (minimum of 30 samples). To ascertain the significance of the coefficients at a designated probability level, the critical values derived from the quantiles of the normal distribution are juxtaposed with the empirical t values. The following are the statistical hypotheses for the outer model:

$$H0: \lambda_i = 0 \text{ against } H1: \lambda_i \neq 0$$

Meanwhile, for the inner model, here is the statistical hypothesis:

$$H0: y_i = 0 \text{ lawan } H1: y_i \neq 0$$

RESULTS AND DISCUSSION

The findings of this study were derived from primary data collected via an online questionnaire administered to the principal subjects of the investigation. The questionnaire contains screening questions to verify that eligible responders can advance and complete it. The findings of the data collection, illustrating the replies from the participants in this study, are displayed in the table below:

Table 2. Number of Respondent Data

Description	Amount
Number of questionnaire data collected	219
The number of questionnaire data cannot be processed	18
The amount of questionnaire data can be processed	201

Table 3. Respondent Characteristics

Gender		
Gender	Frequency	Percent (%)
Man	78	38,8%
Woman'	123	61,2%
Age		
Age	Frequency	Percent (%)
18-23 Year	176	87,6%
24-29 Year	21	10,4%
>30 Year	4	2,0%
Work		
Work	Frequency	Percent (%)
Students	130	64,7%
Government employees	6	3,0%
Private sector employee	49	24,4%
Businessman	8	4,0%
Housewife	7	3,5%
Barista	1	0,5%

The analysis of the respondents' characteristics reveals notable disparities in gender, age, and occupational makeup. Among the total responders, 61.2% are female, whereas males constitute merely 38.8%. This signifies that women predominate in this survey. The predominant age group among respondents is 18 to 23 years, at 87.6%, followed by those aged 24 to 29 at 10.4%, and individuals over 30 years old at a mere 2%. The younger demographic predominantly completes the poll. Concerning occupation, 64.7% of the respondents are

students, consistent with a significant percentage of youth. Employees in the private sector constitute 24.4%, whilst government employees, entrepreneurs, homemakers, and baristas each account for significantly lesser percentages. This poll underscores the predominance of young women, especially students, which may yield significant insights into the viewpoints and requirements of this demographic for future research or the development of products and services.

Table 4. Validity Test Results

Indikator		R Hitung	R Tabel	Ket
Content				
Kesesuaian Informasi	CON1	0,867	0,138	Valid
Kelengkapan Informasi	CON2	0,902	0,138	Valid
Manfaat Informasi	CON3	0,882	0,138	Valid
Informasi mudah dipahami	CON4	0,891	0,138	Valid
Accuracy				
Keakuratan dan Konsistensi	ACC1	0,853	0,138	Valid
Kebenaran	ACC2	0,867	0,138	Valid
Standarisasi	ACC3	0,814	0,138	Valid
Bebas dari <i>error</i> atau <i>bug</i>	ACC4	0,775	0,138	Valid
Format				
Kemudahan penggunaan <i>User Interface</i>	FOR1	0,910	0,138	Valid
<i>User Interface</i> yang Menarik	FOR2	0,908	0,138	Valid
Kualitas	FOR3	0,905	0,138	Valid
Ease Of Use				
<i>End User Friendly System</i>	EOU1	0,882	0,138	Valid
Kemudahan Penggunaan Menu	EOU2	0,902	0,138	Valid
Kenyamanan	EOU3	0,886	0,138	Valid
Kemudahan Akses	EOU4	0,926	0,138	Valid
Interaksi Sistem	EOU5	0,895	0,138	Valid
Timeliness				
<i>Up to Date</i>	TIM1	0,886	0,138	Valid
Ketepatan Waktu	TIM2	0,892	0,138	Valid
Kecanggihan Sistem	TIM3	0,830	0,138	Valid
Kecepatan Sistem	TIM4	0,875	0,138	Valid
User Satisfaction				
Kecukupan	US1	0,864	0,138	Valid
Efektivitas	US2	0,815	0,138	Valid
Efisiensi	US3	0,822	0,138	Valid
Kepuasa Informasi	US4	0,876	0,138	Valid
Kepuasan secara menyeluruh	US5	0,892	0,138	Valid

The correlation coefficients for each statement item with the total of other items surpass the predetermined correlation threshold ($r_{table} = 0.138$), as indicated above. Consequently, we can

ascertain that the outcomes of this validity assessment validate all statement items across the six variables. This signifies that the measurement tools employed in this research are dependable and appropriate for subsequent analysis.

Table 5. Reliability Test

Variables	Cronbach's Alpha	Information
Content	0,908	Reliable
Accuracy	0,843	Reliable
Format	0,893	Reliable
Ease Of Use	0,940	Reliable
Timeliness	0,893	Reliable
User Satisfaction	0,907	Reliable

The variables Content, Accuracy, Format, Ease of Use, Timeliness, and User Satisfaction each have a Cronbach's alpha (α) value beyond 0.70, as indicated in the table above. Consequently, we can ascertain that the questionnaire employed in this study is credible.

Evaluation of Measurement Model (Outer Model)

We executed the hypothesis testing procedure utilizing Partial Least Squares (PLS) analysis techniques with SmartPLS 3.0 software. We can construct and examine the PLS model framework

to obtain a more profound understanding of the interrelations among the variables in the research

model. The proposed PLS model framework is as follows:

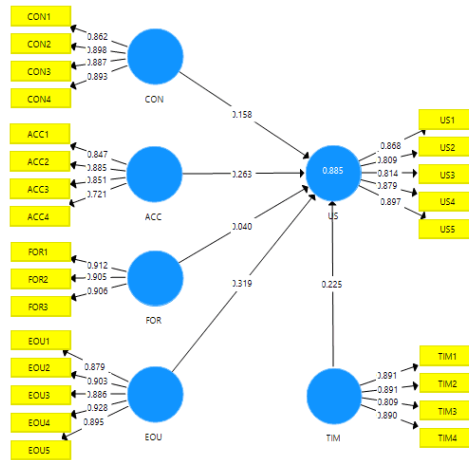


Figure 3. Outer Model

The measurement model was assessed to evaluate its validity and reliability, comprising three testing stages: convergent validity, discriminant validity, composite reliability, and Cronbach's alpha. Figure 3 demonstrates that the

test findings confirm that both validity and reliability have been adequately achieved since correlation values for all variables are above 0.7. Structural Model Evaluation (Inner Model)

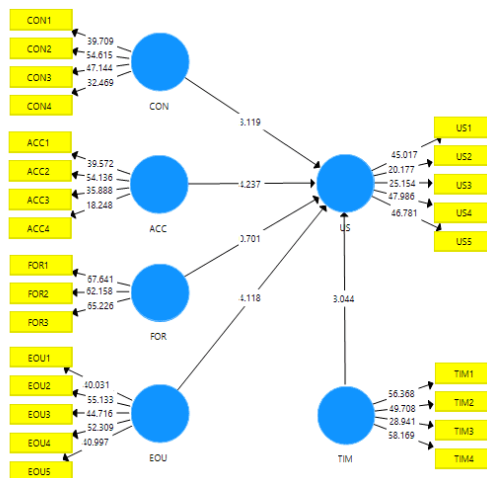


Figure 4. Inner Model

We assess the Inner Model, an essential phase in Partial Least Squares (PLS) analysis. This stage involves analyzing the interrelationships among the latent variables defined in the measurement model (outer model) to assess the degree of their mutual influence.

The inner model is evaluated using three measurement criteria: the effect size (f^2) test, the Stone-Geisser (Q^2) test, and the Goodness of Fit (GoF) index (R Square) test.

In the Effect Size (f^2) analysis, the variables Content, Accuracy, Format, Ease of Use, and

Timeliness exhibit a minor impact on User Satisfaction. This signifies that these characteristics exert a minimal influence on consumer satisfaction.

Table 6. Stone Geisser Test (Q2)

Variable	Q-Square (Q ²)
User Satisfaction	0,632

The Stone-Geisser (Q²) test reveals a Q² value of 0.632 for the User Satisfaction variable, signifying that the model employed in this study exhibits robust predictive ability.

Goodness of Fit (GoF) Index (R-Square) Test

The GoF test is calculated by multiplying the average communality index's square root by the average R-Square's square root, yielding values between 0 and 1. A number approaching 1 indicates a superior capacity of the model to elucidate the existing data. A GoF level of 0.1 is

classified as minor, 0.25 as medium, and 0.36 as significant (Maryani et al., 2020; Haryani et al., 2022).

The calculated GoF value is 0.82142. This result signifies that the model demonstrates an excellent match in elucidating the current data, surpassing the threshold of 0.36, indicating a substantial goodness of fit level.

Hypothesis Testing

Table 7. Direct Test Results

	Original Sample	T Statistics	T Tabel	P Values	Keterangan
CON → US	0,158	3,119	1,972	0,002	Positif, Signifikan
ACC → US	0,263	4,237	1,972	0,000	Positif, Signifikan
FOR → US	0,040	0,701	1,972	0,484	Positif, Tidak Signifikan
EOU → US	0,319	4,118	1,972	0,000	Positif, Signifikan
TIM → US	0,225	3,044	1,972	0,002	Positif, Signifikan

The analysis demonstrates that content (CON), accuracy (ACC), ease of use (EOU), and timeliness (TIM) have a positive and significant impact on user satisfaction (US), suggesting that enhancements in these domains could elevate overall user satisfaction levels. Content exerts a notable influence, evidenced by a T Statistic of 3.119 and a P-value of 0.002. In contrast, accuracy demonstrates an even more pronounced effect, indicated by a T Statistic of 4.237 and a P-value of 0.000. The ease of use is identified as a significant factor, evidenced by a T Statistic of 4.118 and a P-value of 0.000. Conversely, format (FOR) exhibits a positive effect with a T

Statistics of 0.701; nevertheless, it lacks significance, indicating it may not be a robust predictor in this scenario. The findings underscore the necessity of prioritizing content, correctness, usability, and timeliness to enhance user satisfaction, but additional investigation into the format's little influence may be justified.

CONCLUSION

The analysis of user satisfaction for the InDrive online transportation application in Bandung City indicates that the Content (CON) variable positively and significantly impacts User Satisfaction (US). At the same time, the

Accuracy (ACC) variable also exerts a strong positive and significant influence on user satisfaction. The Format (FOR) variable exhibits a favorable effect but lacks statistical significance. The Ease of Use (EOU) variable positively and significantly influences user satisfaction, as does the Timeliness (TIM) variable, which likewise exerts a positive and significant effect. These statistics underscore the essential aspects influencing user happiness in the InDrive application.

REFERENCES