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Analysis Of Factors Affecting The Acceptance Of Pt. Sicepat Ekspres Indonesia's Mobile Application Using The Utaut Method

Binsar Giovanno Fransiskus[1], Astari Retnowardhani[2]

Abstract

The rapid digital transformation in the logistics industry has accelerated the adoption of mobile applications to improve service efficiency and user experience. Despite technological advances, user adoption of the SiCepat Ekspres mobile application in Indonesia remains stagnant, indicating a gap between innovation and user acceptance. This study extends the Unified Theory of Acceptance and Use of Technology (UTAUT) by integrating Task-Technology Fit (TTF) and Trust to analyze mobile application adoption in the logistics industry. A survey of 620 users was analyzed using Structural Equation Modeling (SEM-PLS), showing that performance expectancy, effort expectancy, social influence, and facilitating conditions significantly influence behavioral intention. Furthermore, task-technology fit and trust are key factors that drive both behavioral intention and use behavior. These findings contribute to the technology adoption literature and provide strategic recommendations for enhancing user trust through system reliability and a smoother user experience, ensuring higher engagement and long-term adoption.

Keywords: *Logistics Technology Adoption, Mobile Application Usability, Task-Technology Fit, Trust in Digital Services, UTAUT Framework.*

Introduction

In this era of digital technology advancement, the use of information technology is the best practice recommended based on the information systems survey(Venkatesh et al., 2012) , as evidenced by the current situation where various logistics service providers are emerging and developing, particularly in Indonesia, which focuses on digital technology. The availability of digital courier services has enabled them to grow rapidly and become popular among the public, as they can be accessed without the need to visit a physical outlet.

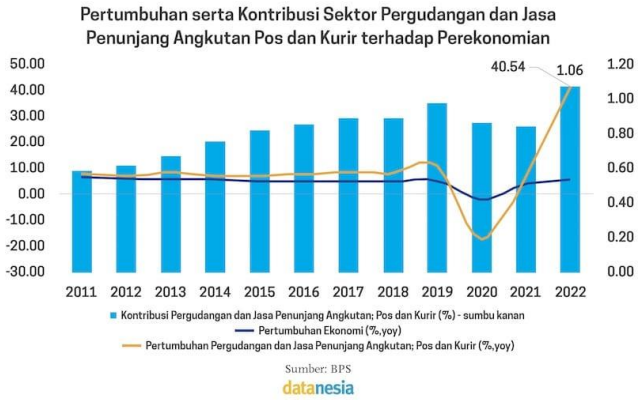

Figure 1. Logistics Service Growth Data 2023

Source: (Datanesia, 2023)

Based on Figure 1, we can see that the postal and courier service sector has experienced consistent growth from year to year. There was a significant surge in 2021 and 2022, creating a

[1] Universitas Bina Nusantara, Indonesia. binsar@binus.ac.id (corresponding author).
[2] Universitas Bina Nusantara, Indonesia.

considerable gap compared to previous years. Although there was a decline in 2020, which coincided with the start of the pandemic, the overall growth trend shows strong improvement in this sector.

Figure 2. 2023 Logistics Industry Infographic

Source: (Populix, 2023)

Based on Figure 2, we can see that there is a large market opportunity for personal delivery. The survey results shown indicate that the majority of Indonesians choose to use online delivery services, especially in the context of online shopping. This, together with the data in Figure 1 showing the growth of the logistics sector, indicates that many logistics companies now want to develop mobile applications. The purpose of these applications, among others, is to expand the coverage of courier services for personal delivery, thereby reducing the need for large costs to open physical outlets. This strategy aligns with the growing trend of convenience and efficiency in delivery services. Additionally, the presence of mobile applications in courier services can make the services offered more comprehensive, covering the entire delivery process from start to finish. These mobile applications are expected to drive the growth of the personal delivery courier industry by meeting the needs of customers who were previously unreachable.

According to Pressman & Bruce, (2014), a mobile application is software designed specifically for mobile platforms such as iOS or Android. These applications are designed with unique user interfaces and interaction mechanisms to facilitate use on mobile devices. Mobile applications provide interoperability with web-based resources, give access to a variety of relevant information, and have local processing capabilities for collecting, analyzing, and formatting information according to user needs. In addition, mobile applications also support persistent data storage, allowing users to download and install applications from the platform provided to improve performance and functionality on their mobile devices.

Sicepat Ekspres, a leading logistics company in Indonesia, has developed the Sicepat Ekspres mobile application as a key tool to facilitate interaction with customers. This application is designed to provide convenience in using package delivery services, which aims to reach and attract potential customers. Through this application, users can easily access services, track packages and find the nearest outlet, as well as request package pickups, all of which aim to improve the customer experience and expand Sicepat Ekspres' market reach. This application is an important tool that not only strengthens relationships with existing customers but also opens up opportunities to attract new customers.

From routine evaluations conducted by Sicepat Ekspres management, it was revealed that the number of mobile app users had not yet reached the target set by stakeholders. The total user target given by stakeholders includes all users who have downloaded the Sicepat Ekspres app on both the Google Play Store and Apple App Store platforms. The following is information on the list of users that has been recorded since the app was activated:

	Jan-24	Feb-24	Mar-24	Apr-24
Pengguna Google Play Store	108378	109021	109844	110594
Pengguna Apple App Store	17337	17805	18496	18879
Target Total Pengguna	130000	145000	160000	175000

Figure 3. Mobile App User Data 2023

Figure 3 showing that the number of users of the Sicepat Ekspres mobile application has not met the target, the author intends to perform a thorough analysis of user acceptance of the application. The purpose of this analysis is to determine the different reasons that could contribute to the application issued by PT. Sicepat Ekspres Indonesia not being used.

Figure 4. Sicepat Ekspres App Rating 2023

Source: (Google Play Store, 2023)

In addition to the app user data, based on the rating on Google Play Store as of April 30, 2024, shown in Figure 4, the Sicepat Ekspres app has received various complaints from its users. With a rating of only 1.3 out of 5 stars from a total of 4,567 reviews, this application faces problems with its usage. Although it should be noted that not all reviews express complaints about the application itself, a large number of complaints are also related to the delivery services provided by the application.

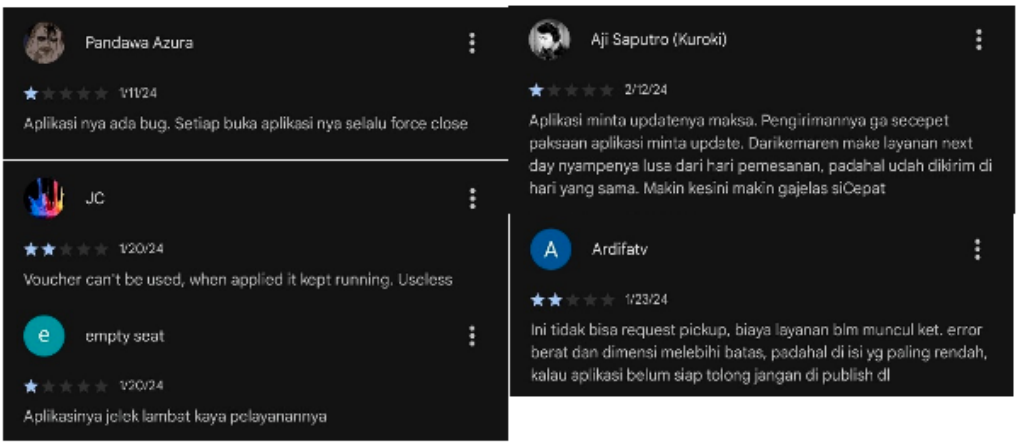

Figure 5. Sicepat Ekspres App Reviews 2023

Source: (Google Play Store, 2023)

Of the thousands of reviews available, Figure 5 shows several examples taken from January to March 2024, in which users expressed complaints about a number of issues in using the Sicepat Ekspres application. Based on the situation in Figures 4 and 5, the authors and stakeholders agreed that the Sicepat application needs to conduct a technology implementation evaluation to comprehend the elements affecting the adoption of technology. With the results of this analysis, it is hoped that technological development and adjustments can be made, thereby increasing the number of technology users.

The analysis of the Sicepat Ekspres mobile application will be conducted using the Unified Theory of Acceptance and Use of Technology (UTAUT) method developed by Venkatesh et al., as it aligns with the needs of the aforementioned problem. The UTAUT method will be combined with the Task-Technology Fit (TTF) model, following the methodology used in research by Zhou et al. (2010). In this study, factors such as performance expectancy (PE), TTF, social influence (SI), and facilitating conditions (FC) were shown to greatly impact the rate at which mobile banking services are adopted.

This research will also integrate the Trust model, which was studied by Tirtana & Sari (2014) in their work on the influence of perceived trustworthiness on mobile banking usage. The findings of this investigation show that the Trust variable significantly influences customer interest in using mobile application features.

The TTF model itself emphasizes how crucial it is to align technical features with the requirements set by personal needs. Additionally, Yu & Yu (2010) suggest that a better fit between TTF will increase performance. By integrating the UTAUT, TTF, and Trust models, the analysis of the Sicepat Ekspres application is expected to provide in-depth insights into the factors influencing user adoption and use of the application, while also identifying ways to improve trust and performance.

Analyzing user acceptance of the Sicepat Ekspres application is crucial because it helps developers understand their users' behaviors, preferences, and needs. As stated by Luo et al. (2010), understanding user preferences is a crucial step in developing applications that achieve broad market acceptance. Through user acceptance analysis, developers can identify what users want, allowing for the customization of application features and functionality to meet their needs and preferences. Davis et al (1989), added that factors such as usability, satisfaction, and ease of use significantly contribute to user acceptance of technology. By understanding these aspects, developers can improve the use of their applications by increasing usability and satisfaction and making them easier to use. Furthermore, (Shih, 2004) showed that user acceptance of applications has a direct impact on business success; applications that are well received by users usually show higher retention rates, better conversions, and create positive experiences for users, all of which contribute to overall business success. Furthermore, research by DeLone, & McLean (1992) found that in the success of an information system, user satisfaction is a critical factor, where well-received applications usually create satisfying user experiences.

Research Method

This research was conducted using UTAUT model, modified by adding the variables of Trust and TTF. In the analysis of the Sicepat Ekspres mobile application, TTF was included in the UTAUT model framework to evaluate how much technology facilitates user tasks. According to (Zhou, et al., 2010), TTF helps measure the suitability between the technological features available in the application and the task requirements of users, providing important insights into the effectiveness of technology in supporting user performance. One of the four main constructs of TTF, namely TTF, specifically, was used in the research model because it directly assesses the impact of technology on user tasks, which is a key aspect in determining technology adoption by users. Additionally, based on research by (Oliveira, et al., 2014), trust is also integrated into the UTAUT Model to assess how users' trust in technology influences their acceptance. In the context of analyzing the Sicepat Ekspres mobile application, trust covers aspects of security, privacy, and the application's ability to perform the expected tasks, all of which greatly influence users' decisions to accept and use the technology.

The population of Sicepat Ekspres mobile application users as of April 30, 2024, was 110,594 throughout Indonesia. In this study, the author used the population of active users of the Sicepat Ekspres application. This population includes all users who regularly use the application for package delivery services, covering various demographics and locations in Indonesia, providing a broad picture of the acceptance and use of the application among the public. The sample to be used in this study was determined using the Slovin formula, which allows researchers to calculate the minimum sample size with a predetermined error margin of 5%. The sample size obtained to represent Sicepat Ekspres

mobile app users is 400 (rounded up) people. The data collection method in this study will be conducted through a survey using a questionnaire. After that, SMART PLS will subsequently be used to process the data.

Results and Discussion

Figure 6. Research Model in SMART PLS

Average Variance Extracted (AVE)

The AVE value, which compares the degree of variance collected by a construct is the next test. While a number of 0.5 is still respectable, a value beyond 0.7 is regarded as quite good (Alarcón & Sánchez, 2015).

Table 1. AVE Values

Variable	AVE	Description
Performance Expectancy (PE)	0.883	Valid
Effort Expectancy (EE)	0.884	Valid
Perceived Trust (PT)	0.844	Valid
Social Influence (SI)	0.773	Valid
Facilitating Conditions (FC)	0.812	Valid
Task Technology Fit (TTF)	0.887	Valid
Behavioral Intention (BI)	0.860	Valid
Use Behavior (UB)	0.724	Valid

Based on the AVE test results, the following findings were obtained:

1. PE has an AVE value of 0.883, exceeding 0.7, so it is declared valid and very good.
2. EE has an AVE value of 0.884, exceeding 0.7, so it is declared valid and very good.
3. PT has an AVE value of 0.844, exceeding 0.7, so it is declared valid and very good.
4. SI has an AVE value of 0.773, exceeding 0.7, so it is declared valid and very good.
5. FC has an AVE value of 0.812, exceeding 0.7, so it is declared valid and very good.
6. TTF has an AVE value of 0.887, exceeding 0.7, so it is declared valid and very good.
7. BI has an AVE value of 0.860, exceeding 0.7, so it is declared valid and very good.
8. UB has an AVE value of 0.724, exceeding 0.7, so it is declared valid and very good.

Composite Reliability

Reliability testing is conducted by examining the Composite Reliability (CR) value, which reflects the overall consistency of a group of indicators forming a latent construct while taking their factor loadings into account. The Composite Reliability value is considered acceptable if it is above 0.7 (Mufidah et al., 2018).

Table 2. Composite Reliability

Variable	Composite Reliability	Conclusion
PE	0.968	Reliable
EE	0.968	Reliable
PT	0.956	Reliable
SI	0.911	Reliable
FC	0.928	Reliable
TTF	0.959	Reliable
BI	0.948	Reliable
UB	0.887	Reliable

Based on Table 2, all latent variables in this test have appropriate reliability values for each parameter used, so that all latent variables are declared reliable and free from problems.

Cronbach's Alpha

Reliability testing was conducted by examining Cronbach's Alpha values, where a variable is considered reliable if it has a value between 0.6 and 0.7.

Table 3. Cronbach's Alpha (CA)

Variable	CA	Conclusion
PE	0.956	Reliable
EE	0.956	Reliable
PT	0.938	Reliable
SI	0.856	Reliable
FC	0.884	Reliable
TTF	0.936	Reliable
BI	0.919	Reliable
UB	0.809	Reliable

Based on the reliability test results above, each component in the research model is declared reliable, so it can proceed to the next stage.

R-Square

Table 4. R-Square

Variable	R-Square
BI	0.829
UB	0.547

Based on the results of data analysis using SmartPLS, the R-square values indicate that:

1. The BI variable is explained by 82% of the combined effects of PE, EE, PT, and SI, while the remaining 18% is attributed to other elements not covered in this investigation.
2. The UB variable is influenced by 54% by TTF, BI, and FC, while the remaining 46% is influenced by other variables outside this study.

Path Coefficient

Table 5. Path Coefficient

	Y1(BI)	**Y2(UB)**	**Conclusion**
X1(PE)	0.047		Positive
X2(EE)	0.193		Positive
X3(PT)	0.262		Positive
X4(SI)	0.086		Positive
X5(FC)		0.235	Positive
X6(TF)	0.377		Positive
Y1(BI)		0.527	Positive

Table 5 presents the explained results of the path analysis, as follow:

1. PE toward BI has a value of 0.047, demonstrating a favorable association.
2. EE toward BI has a value of 0.193, showing a favorable association.
3. PT toward BI has a value of 0.262, suggesting a favorable connection.
4. SI on BI has a value of 0.086, indicating a positive relationship.
5. FC has a value of 0.235 for UB, indicating a positive relationship.
6. TTF has a value of 0.377 for UB, indicating a negative relationship.
7. BI has a value of 0.527 for UB, indicating a positive relationship.

T Statistics

Table 6. T Statistics

	Original Sample (O)	**Sample Mean (M)**	**Standard Deviation (STDEV)**	**T Statistics (|O/STDEV|)**	**P Values**
X1(PE) -> Y1(BI)	0.047	0.049	0.073	**0.636**	**0.525**
X2(EE) -> Y1(BI)	0.193	0.192	0.053	**3.612**	**0.000**
X3(PT) -> Y1(BI)	0.262	0.262	0.075	**3.499**	**0.000**
X4(SI) -> Y1(BI)	0.086	0.087	0.032	**2.663**	**0.008**
X5(FC) -> Y2(UB)	0.235	0.235	0.057	**4.098**	**0.000**
X6(TF) -> Y1(BI)	0.377	0.374	0.075	**5.025**	**0.000**

Y1(BI) -> Y2(UB)	0.527	0.527	0.055	**9.635**	**0.000**

In T-Statistics analysis, this value is used to assess how significant the association between independent and dependent variables is. The significance of a hypothesis is determined by comparing the T-Statistics value with the T-table (1.964).

1. If the T-Statistics < 1.964 and the P-Value > 0.05, then the relationship between the variables is considered insignificant.
2. If T-Statistics > 1.964 and P-Value < 0.05, then the relationship between variables is considered significant.

Based on the results, the following results were obtained:

1. Performance Expectancy on Behavior Intention has a T-Statistics value of 0.636 < 1.964 and a P-Value of 0.525 > 0.05, so this relationship is not significant.
2. Effort Expectancy towards Behavior Intention has a T-Statistics value of 3.612 > 1.964 and a P-Value of 0.000 < 0.05, so this relationship is significant.
3. Perceived Trust on Behavior Intention has a T-Statistics value of 3.499 > 1.964 and a P-Value of 0.000 < 0.05, so this relationship is significant.
4. Social Influence on Behavior Intention has a T-Statistics value of 2.663 > 1.964 and a P-Value of 0.008 < 0.05, so this relationship is significant.
5. Facilitating Condition on Use Behavior has a T-Statistics value of 4.098 > 1.964 and a P-Value of 0.000 < 0.05, so this relationship is significant.
6. Task Technology-Fit on Use Behavior has a T-Statistics value of 5.025 > 1.964 and a P-Value of 0.000 < 0.05, so this relationship is significant.
7. Behavior Intention on Use Behavior has a T-Statistics value of 9.635 > 1.964 and a P-Value of 0.000 < 0.05), so this relationship is significant.

Hypothesis Testing Results

Table 7. Summary of Hypothesis Results

No	Hypothesis	T Statistics	T Table	P Values	Coefficient P Values	Significance	Description
1.	H1 (PE) -> (BI)	0.636	1.964	0.525	0.05	Not Significant	Not Accepted
2	H2 (EE) -> (BI)	3.612	1,964	0.000	0.05	Significant	Accepted
3.	H3 (PT) -> (BI)	3,499	1,964	0.000	0.05	Significant	Accepted
4.	H4 (SI) -> (BI)	2,663	1,964	0.008	0.05	Significant	Accepted
5.	H5 (FC) -> (UB)	4.098	1,964	0	0.05	Significant	Accepted
6.	H6 (TF) -> (BI)	5,025	1,964	0.000	0.05	Significant	Accepted
7.	H7 (BI) -> (UB)	9.635	1,964	0.000	0.05	Significant	Accepted

PE and BI has a T-statistics value of 0.636 < 1.964, and a P-value of 0.525 > 0.05 significance level. These results demonstrate that there is no statistically significant correlation. Consequently, the

hypothesis proposing that PE significantly affects BI in the acceptance of the SiCepat Ekspres mobile application is rejected. This finding suggests that the application's PE is not sufficiently influential in encouraging users' BI to use the application.

EE and BI has a T-statistics value of 3.612 > 1.964, and a P-value of 0.000 < 0.05 significance level. This finding indicates a statistically significant relationship between the two variables. Accordingly, the hypothesis stating that EE significantly affects BI in the acceptance of the SiCepat Ekspres mobile application is accepted. This suggests that the easier the application is to use and learn, the stronger its influence on users' intention to use it.

PT and BI has a T-statistics value of 3.499 > 1.964, with a P-value of 0.000 < 0.05. These results confirm that the relationship is statistically significant. Therefore, the hypothesis proposing that PT significantly affects BI in the acceptance of the SiCepat Ekspres mobile application is supported. This implies that higher levels of user trust in the application lead to stronger intentions to use it.

SI and BI has a T-statistics value of 2.663 > 1.964, and a P-value of 0.008 < 0.05 threshold. This suggests that the two variables have a substantial link. Hence, the hypothesis stating that SI significantly affects BI in the acceptance of the SiCepat Ekspres mobile application is accepted. This finding suggests that social factors, such as encouragement from friends, family, or colleagues are crucial in boosting consumers' desire to utilize the application.

FC and UB has a T-statistics value of 4.098 > 1.964, and a P-value of 0.000 < 0.05. This confirms that the relationship is statistically significant. Consequently, the hypothesis asserting that FC significantly influence UB in the acceptance of the SiCepat Ekspres mobile application is accepted. This indicates that better supporting conditions, such as the availability of adequate devices and resources, enhance users' actual use of the application.

TTF and BI has a T-statistics value of 5.025 > 1.964, along with a P-value of 0.000 < 0.05 significance level. This indicates that the two variables have a substantial link. Accordingly, the hypothesis stating that TTF significantly affects BI in the acceptance of the SiCepat Ekspres mobile application is supported. This implies that consumers will be more inclined to use an application if its features and functionality better suit their demands.

BI and UB has a T-statistics value of 9.635 > 1.964, and a P-value of 0.000 < 0.05. This shows that there is a statistically significant association. Therefore, the hypothesis proposing that BI significantly impacts UB in the acceptance of the SiCepat Ekspres mobile application is accepted. This finding implies that the likelihood of actual utilization of the program increases with stronger user intentions to utilize it.

Indirect Effect Analysis

This analysis was conducted to evaluate the assosiation between each exogenous variable and the endogenous variable, namely UB through the BI variable.

Table 8. Total Indirect Effect

	Y2(UB)	**P Values**
X1(PE)	**0.025**	**0.528**
X2(EE)	**0.102**	**0.001**
X3(PT)	**0.138**	**0.001**
X4(SI)	**0.045**	**0.013**
X6(TF)	**0.199**	**0.000**

It is clear from the above table that the exogenous factors that significantly influence the UB variable indirectly (with a p-value < 0.05) are as follows:

1. FC with β = 0.235 and p value = 0.000
2. TF with β = 0.199 and p value = 0.000
3. PT with β = 0.138 and p value = 0.001

From these analysis results, variable with the strongest influence on UB is FC with β = 0.235.

Conclusion

Based on the results of the study entitled "Analysis of Factors Affecting the Acceptance of the SiCepat Ekspres Mobile Application Using the UTAUT Method", it can be concluded that:

1. PE does not show a significant effect on BI. This suggests that users' perceptions to utilize the application are not greatly influenced by their perceptions of its advantages in enhancing their performance.
2. EE significantly affects BI. This shows that the more user-friendly the application, the higher the users' intention to use it. Ease in understanding the application's interface and features is a key factor in encouraging user interest.
3. PT significantly affects BI. These findings suggest that users' intention to stick with the application is significantly influenced by their confidence in its security, dependability, and integrity.
4. SI significantly affects BI. This means that recommendations and influences from social environments such as friends, family, or coworkers play a role in encouraging users' decisions to use the application.
5. FC have a significant influence on UB. This finding indicates that the availability of adequate resources and good technical support play a major role in increasing application usage by users.
6. TTF significantly affects BI. This suggest that the suitability of the application's features to the users' task needs greatly influences their intention to use the application.
7. BI significantly affects UB. This finding shows that users' intention to use the application significantly influences their actual behavior in using the application.
8. Of all the variables studied, TTF has the greatest influence on BI, with the highest T-Statistics value after BI on UB. This shows that the more the technology suits the users' needs, the higher the likelihood that the application will be actively used.

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