

Factors Influencing User Satisfaction of PeduliLindungi App with UTAUT & Delone Mclean Models: A Case Study in Indonesia

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Abstract. The research aims to analyze the user satisfaction when using peduliLindungi app. An integrated research model was utilised based on Unified Theory of Acceptance and Use of Technology (UTAUT) and Delone & Mclean models. To achieve this goal PLS-SEM analysis was conducted. This study's results indicate that effort expectancy, facilitating condition, social influence, information quality, system quality, and service quality have a significant impact on user satisfaction, which subsequently leads to the continuance intention. The finding result of the research will provides useful insights for the developers of Pedulilindungi to develop a better mobile contact tracing app. Lastly, the value of this study has shown that the integrated theories can be used to evaluate other mobile contact tracing.

Keywords: User satisfaction, Continuance intention, UTAUT, Delone &McLean, PeduliLindungi.

1. Introduction

The Coronavirus disease 2019 (COVID-19) pandemic has resulted in over 610 million cases and 6.5 million deaths globally and has disrupted economies worldwide (Kaye et al., 2021). In response to the rapidly growing number of cases of COVID-19, many countries have resulted lockdowns to slow down the spread of the coronavirus (Akinbi et al., 2021). By severely limiting social and economic interactions among their citizen, However, lockdowns come at a great social and economic cost for the countries (Prassl et al.,2020). Therefore, according to (Trang et al., 2020), many governments across the globe are scrambling to introduce contact tracing apps as a key element of their lockdown exit strategies.

Contact tracing apps have been introduced in several countries worldwide to identify and isolate possible cases infected with COVID-19, aiming to reduce the spread of the virus (Waal et al., 2022). According to (Lucivero et al., 2020), Users download the contact tracing app on their smartphones, where the app communicates with other mobile devices in proximity through Bluetooth and GPS. When a person has symptoms or tests positive for COVID-19, their health status is updated in the contact tracing app. Then, people who have been within prescribed proximity of the infected person are notified by a text message or notification on their devices and advised to self-isolate. However, according to (Huang et al., 2022), sustained usage of contact tracing apps by a critical mass of the population (i.e., 60% – 80%) is required for contact tracing apps to become successful. Therefore, many countries have made contact tracing apps mandatory to increase the adoption rate. The success of fighting the pandemic is connected to the use of contact tracing apps. It is crucial that citizens are satisfied with such an experience. Decision-makers and developers of such apps need to know how users perceive such applications.

On April 2020, the Indonesian Ministry of Communication and Information (Kominfo) released a contact tracing app named PeduliLindungi (Kurniawati et al., 2020).PeduliLindungi is a digital contact tracing app that can be installed by the Google Play Store or app store.PeduliLindungi aims to assist the government in tracing to stop the spread of the COVID-19 virus in Indonesia (Pratama & Pati, 2021). The app works by requesting the user's permission to activate location data after downloading it. The application periodically determines the user's location when active site circumstances are present and provides information about crowds and COVID-19 spread areas. Currently, the PeduliLindungi app is mandatory for citizens and visitors to do daily activities during COVID-19 in Indonesia. However, according to (Sherissa & Anza, 2022), users often have trouble with PeduliLindungi app services. Such the certificate COVID-19 vaccine takes time to appear on the app, the registration process usually has trouble, and the response from the PeduliLindungi team regarding users' complaints tends to be long. These complaints resulted in many users of the app giving a low rating and unfavourable reviews on the play store and app store.

A few of these aspects need to be improved for the development of the PeduliLindungi application to proceed more successfully. Numerous negative comments from the public about the app service PeduliLindungi have led users to give it poor reviews and stop using it. Based on these complaints, Kominfo ought to be aware of how important satisfied users are with the Pedulilindungi application. Given this, it is necessary to assess how users are satisfied with PeduliLindungi application. As a result, it will help application developers enhance their application.

Recent studies examined the quality and user satisfaction in terms of contact tracing applications. Studies by (Al-Soni and Abu-Shanab., 2021) conducted a user satisfaction study about the contact tracing application Ehteraz App in Qatar. Studies by (Prakash et al., 2021) conducted a user satisfaction and continuance intention about contact tracing apps in India. Another study by (Samsuri et al., 2022) conducted a user satisfaction study about the contact tracing application Mysejahtera App in Malaysia. However, despite the existing studies of user satisfaction on contact tracing applications, these studies could be more extensive. Even three years after its launch, PeduliLindungi is yet to be researched in terms of user satisfaction.

Therefore, this study intends to evaluate the factors influencing user satisfaction with the Indonesian contact tracing peduliLindungi app. Using the integration of UTAUT and Delone & McLean as a model. Consequently, this study will bridge the gap and bring benefits to the government and technology developers to address the app's deficiencies and raise user satisfaction. To improve the system, the results and conclusions will give decision-makers a deeper understanding of the demands of the users concerning peduliLindungi services.

2. Literature Review & Hypothesis Development

2.1. UTAUT

The unified theory of acceptance and use of technology (UTAUT) is a technology acceptance model formulated by Venkatesh et al. (2003). The UTAUT is heavily influenced by earlier models, such as the Task Technology Fit Theory, the Theory of Reasoned Action (TRA), the Theory of Planned Behavior (TPB), and, most significantly, the Technology Acceptance Model. UTAUT consists of four components, including performance expectancy (PE), effort expectancy (EE), social influence (SI), and facilitating conditions (FC).

The UTAUT models, according to Venkatesh et al. (2003), aim to clarify the user's initial intent and subsequent behavior. Utaut models can be utilized to measure user satisfaction. According to Caruana et al. (2016) the behavioral intention may be connected with user satisfaction. They stated that satisfaction is comparable to an attitude and can be assessed as the sum of satisfaction with the various product or service features. There are also have been several studies that have used UTAUT models to analyze user satisfaction (Rodrigues et al., 2016; Wibowo, 2017; Limna et al., 2022;).

Performance Expectancy

The UTAUT defined Performance Expectancy (PE) as the amount the user believes that adopting a specific technology will improve their performance in certain activities (Venkatesh et al., 2012). Marinković et al. (2020) discovered that performance expectancy was the most influencing factor on user satisfaction. Previous empirical studies have also shown performance expectancy's positive and significant effect on user satisfaction (Bayastura et al., 2022; Wibowo, 2017; Limna et al., 2022; Tam et al., 2020).

Effort Expectancy

Venkatesh et al. (2012) defined Effort Expectancy (EE) as a measurement of a system's usability. Walrave et al. (2021) conceptualized ease of use as the extent to which users utilize the technology that meets their needs with the least amount of effort. Numerous studies have shown that effort expectancy strongly predicts user satisfaction (Tian&Wu, 2022; Hutabarat, 2020; Teng et al., 2022; Al-Soni & Abu-Shanab, 2021; Purohit et al., 2022).

Facilitating Condition

Venkatesh et al. (2012) defined Facilitating Condition (FC) as an individual's confidence that the necessary organizational and technical infrastructure exists to support the system or technology. Many researchers have shown that Facilitating Conditions significantly affect a user's satisfaction (Kurniawan et al., 2021; Rodrigues et al., 2016; Al-Shammari & AlShowaikh, 2021; Indriati & Agustina, 2018; Wijaya et al.,2021).

Social Influence

The extent to which an individual believes that influential others think they should adopt a new system is measured by a concept called Social Influence (SI), as defined by Le et al. (2020). SI According to Venkatesh et al. (2012), personal encouragement and environmental influences combine to become the biggest support factor for a person to use a new system. Some empirical studies have found that social influence has a positive influence on the user satisfaction (Junnonyang, 2021; Ogara et al., 2014; Lee & Kim, 2022; Wibowo, 2017; Kurniawan et al., 2021; Kosim & Legowo, 2021).

2.2. Delone & Mclean IS a Success model

Data system effectiveness can be measured with the help of the DeLone and McLean IS Success Model. A few tweaks were made to the D&M formula in 2003 after its initial publication in 1992. IS success is measured along six interconnected dimensions: system quality, information quality, service quality, (intention to) use, user satisfaction, and net benefits.

Information Quality

DeLone & McLean (2016) defined information quality as a feature of information produced from the system: relevance, accuracy, completeness, reliability, conciseness, currency, and precision of information. Past research empirically supported the positive and significant influence of information quality on user satisfaction (Samsuri et al., 2022; Achmadi & Siregar, 2021; Siswanto & Triyonowati, 2022; Chen et al., 2015; Rana et al., 2015)

System Quality

System quality is considered an assessment of system performance that includes integration, usability, usefulness, dependability, responsiveness, and adaptability (DeLone & McLean, 2016). Prior to now, it has been acknowledged that a high degree of system quality is a critical indicator of IS success within any organization (Alawaqleh, 2021; Al-Okaily et al., 2021; Lutfi et al., 2020). According to prior research, system quality is a positive predictor of user satisfaction (Gurendrawati et al., 2022; AL-Okaily et al., 2021; Wang et al., 2019; Minh & Nam, 2023).

Service Quality

Service Quality, defined as the ultimate user computing advancement, placed IS enterprises in the dual role of information and service providers. Service quality indicates the support users receive from IS department concerning responsiveness, assurance, and empathy (DeLone & McLean, 2016). Many related works have proven that good service quality predicts user satisfaction, such as (Maulidiyah et al., 2022; Kumalasari et al., 2022; Furinto et al., 2022; Pratama, 2021).

User Satisfaction

User satisfaction according Al-Soni & Abu-Shanab (2021) is the central subject of all voluntarily made consumer choices. This notion of contentment is well-established as the contrast between expectations and perceptions. However, the principle can now be adapted to the environment of technology and complexity, in which consumers typically need help knowing what to anticipate. A number of previous works have shown that user satisfaction has a significant influence on continuance intention (Bayastura et al., 2022; Marinković et al., 2019 Prakash et al., 2021;).

Hypothesis Development

Through the explanation above, the conceptual framework of this study is shown in figure 1, follows:

H1: Performance expectancy has a significant effect on user satisfaction.

H2: Effort expectancy has a significant effect on user satisfaction.

H3: Facilitating conditions has a significant effect on user satisfaction.

H4: Social influence has a significant effect on user satisfaction.

H5: Information quality has a significant effect on user satisfaction.

H6: System quality has a significant effect on user satisfaction.

H7: Service quality has a significant effect on user satisfaction.

H8: User satisfaction has a significant effect on continuance intention.

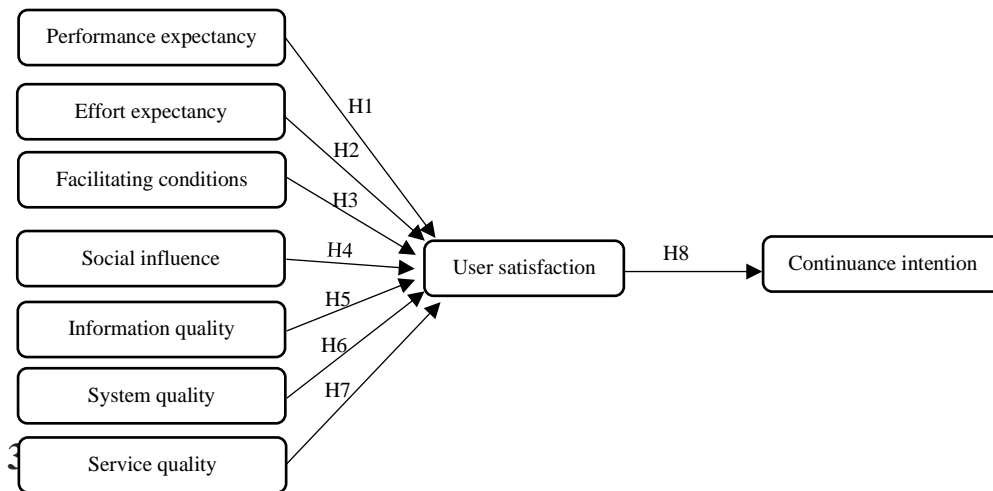


Fig.1: the research framework

3. Methodology

3.1. Data Collection

In this study, we conduct a survey through an online questionnaire that included 5-Likert scale using Google Forms. The distribution of the questionnaire was carried out by sharing via Facebook, Line, Instagram, and WhatsApp, the most used social media platforms in Indonesia. The questionnaire had 424 respondents, who have used the PeduliLindungi app. All of these respondents reside in Jakarta, Indonesia. We collect demographic data of the respondents: gender, age, occupation, and city of residence. The results of the questionnaire serve as the study's core research data. Survey options on the actual questionnaire range from (1) Strongly Disagree to (5) Strongly Agree.

3.2. Analysis using PLS-SEM

The research model consists of 9 variables and 22 indicators. PLS-SEM method used in this study to analyse data; after we have gathered the respondent's data, we perform the analysis data using the SmartPLS 3.0 software application. The data file format must be '.csv' when uploading the questionnaire responses into the SmartPLS, in order to be recognized as an indicator of latent variables. Evaluating PLS-SEM involves two steps (Sarstedt et al., 2017). The first steps examine the measurement theory; the measurement model is assessed by examining the convergent validity of each factor and reliability, the Second step, the structural theory, involves testing the proposed hypotheses and addressing the relationships among the latent variables.

3.3. Validity & Reliability Testing

To assess convergent validity, the average variance extracted (AVE) was measured. It is recommended that the AVE should be > 0.5 (Fornell & Larcker, 1981; Amaro et al., 2015;). Any factor less than 0.5 must be removed, and the model must be run again.

To assess the reliability, Cronbach's Alpha was measured; the value of Cronbach's alpha or composite reliability (CR) must be greater than 0.7, although a value of 0.6 is still acceptable in exploratory studies (Hair et al., 2014; Shrestha, 2021;). Studies have shown used this measurement method (Swadati & Sfenrianto 2022; Wiliam et al., 2022;)

3.4. Hypotheses testing

To assess hypothesis testing, we use R square to measure the variance in the dependent variable. The interpretation of the value of R square is the same as the interpretation of R square linear regression. Chin (1998) provides criteria for interpreting the value of R square, consisting of three classes, namely: R² values of 0.67, 0.33, and 0.19 as strong, moderate, and weak. The hypotheses testing process is determined by the significance of 0.05. Ho: p-value $>$ and Ha: p-values. The t-table value for 5%

significance is 1.96, where if the statistical t value is greater than the t-table value, then the X variable influences the Y variable.

4. Results

4.1. Respondent characteristic

The results of the respondent characteristics are shown in Table 1. The majority of the respondent is dominated by male respondents, with 63% (269 respondents). In terms of age, the majority of the respondents are in the age group of 18-24 years old with 36% (155 respondents), followed by 25-35 years old with 28% (117 respondents) and 35-45 years old with 15% (62 respondents). The occupation of the respondents is also observed. There is the majority of 46% (195 respondents) are employees / civil servants, and 25% (106 respondents) are students; these are appropriate because people who are working/going to university are using the app more often because they are required to use the app to enter to the workplace or university. Residence Location is also observed. There is the majority of 33% (141 respondents) live in West Jakarta, followed by South Jakarta with 24% (99 respondents) also, Central Jakarta with 16% (69 respondents) and East Jakarta with 16% (69 respondents), and North Jakarta with 11% (46 respondents).

Table 1: Respondent characteristic

Characteristics		Total	Percentage
Gender	Male	269	63%
	Female	155	37%
	Total	424	100%
Age	< 18 years old	48	11%
	18 – 24 years old	155	36%
	25 – 35 years old	117	28%
	35 – 45 years old	62	15%
	45 – 55 years old	38	9%
	> 55 years old	4	1%
	Total	424	100%
Occupations	Employees	195	46%
	Self-employed	92	22%
	Housewife	31	7%
	Student	106	25%
	Total	424	100 %
City of residence	west Jakarta	141	33%
	Central Jakarta	69	16 %
	South Jakarta	99	24 %
	East Jakarta	69	16 %
	North Jakarta	46	11 %
	Total	424	100%

4.2. Validity & Reliability test

Validity Testing

The validity testing in this study uses convergent validity measurement; Table 2 shows that the AVE value of performance expectancy, effort expectancy, facilitating condition, social influence, information quality, system quality, service quality, user satisfaction & continuance intention are 0.839, 0.845, 0.862,

0.872, 0.856, 0.828, 0.939, 0.893 and 1.000, respectively. Those values indicate that all variables are accurate and valid since the minimum threshold of 0.5 (Fornell & Larcker, 1981; Amaro et al., 2015;).

Table 2 Average Variance Extracted (AVE) Result

Variable	AVE	Limit Value	Result
Performance expectancy	0.839	0.500	Valid
Effort expectancy	0.845	0.500	Valid
Facilitating condition	0.862	0.500	Valid
Social influence	0.872	0.500	Valid
Information quality	0.856	0.500	Valid
System quality	0.828	0.500	Valid
Service quality	0.939	0.500	Valid
User satisfaction	0.893	0.500	Valid
Continuance Intention	1.000	0.500	Valid

Reliability Testing

Table 3 shows that the α coefficient of performance expectancy, effort expectancy, facilitating condition, social influence, information quality, system quality, service quality, user satisfaction & continuance intention are 0.904, 0.908, 0.840, 0.927, 0.916, 0.896, 0.935, 0.880 and 1.000, respectively. Those values indicate that all variables are reliable since those value exceed the minimum threshold of 0.7 (Hair et al., 2014; Shrestha, 2021;) All values are higher than the threshold of Cronbach’s Alpha which is 0.7, meaning that all constructs are fundamentally consistent and reliable variables to use in this study.

Table 3: Cronbach’s Alpha and Composite Reliability Results

Variable	Alpha	CR	Result
Performance expectancy	0.904	0.940	Reliable
Effort expectancy	0.908	0.942	Reliable
Facilitating condition	0.840	0.926	Reliable
Social influence	0.927	0.953	Reliable
Information quality	0.916	0.947	Reliable
System quality	0.896	0.935	Reliable
Service quality	0.935	0.968	Reliable
User satisfaction	0.880	0.943	Reliable
Continuance Intention	1.000	1.000	Reliable

4.3. Hypothesis test

R square

Table 4 shows that the adjusted R-squared value for continuance intention is 0.700, indicating that 70% of the dependent variable (continuance intention) can be described through the independent variables (user satisfaction).in the next construct the adjusted R-squared value for user satisfaction is 0.903, indicating that 90.3% of the dependent variable (user satisfaction) can be described through the

independent variable (performance expectancy, effort expectancy, facilitating conditions, social influence, information quality, system quality, and service quality).

Table 4: R Square

Variable	R Square	R Square Adjusted
Continuance intention	0.701	0.700
User satisfaction	0.905	0.903

Hypothesis testing result

Figure 2 displays the outcomes of the bootstrap process used to generate P-values and T-statistic values for hypothesis testing. in this study, a significance error level of 5% is used. Ho: p-value > and Ha: p-values. The t-table value for 5% significance is 1.96, where if the statistical t value is greater than the t-table value, then the X variable influences the Y variable.

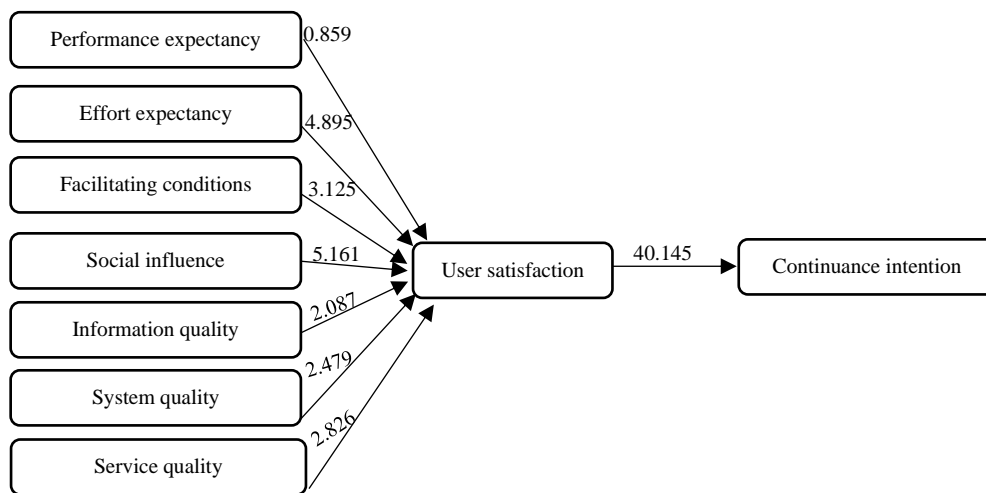


Fig.2: Bootstrapping path coefficient result

Table 5: Path Coefficients results

Hypothesis	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
H1:PE >US	0.037	0.034	0.043	0.859	0.391
H2:EE >US	0.266	0.265	0.054	4.895	0.000
H3:FC >US	0.155	0.154	0.050	3.125	0.002
H4:SI >US	0.221	0.221	0.043	5.161	0.000
H5:IQ >US	0.100	0.101	0.048	2.087	0.037
H6:SYS> US	0.131	0.133	0.053	2.479	0.014
H7:SE >US	0.111	0.113	0.039	2.826	0.005
H8:US >CI	0.837	0.837	0.021	40.145	0.000

In this section, we provide our theoretical analysis of the results as well as the practical implications that follow. Table 5 provides the statistical significance test result.

Theoretical Implications

Performance Expectancy on user satisfaction (H1)

H1. The t-Statistic value is 0.859 which has a value smaller than t-table = 1.96 which means Performance expectancy has no effect on user satisfaction. Meanwhile, the P-values are 0.391, which has a value greater than the error rate 0.05, which means that the effect of performance expectancy on user satisfaction is not significant. the coefficient value shows a positive number of 0.037 which means performance expectancy has a positive effect on user satisfaction, so it can be concluded that

performance expectancy does not have a significant effect on user satisfaction thus it shows that there are no immediate benefits from using the app .this result is contrary to the previous related research (Bayastura et al., 2022; Wibowo, 2017; Limna et al., 2022;) which states that there is a significant effect between performance expectancy on user satisfaction.

Effort Expectancy on user satisfaction (H2)

H2. The t-statistic value is 4.895 which has a value greater than t-table =1.96, which means that effort expectancy has an effect on user satisfaction. Meanwhile, the P-value is 0.000, which is smaller than the error rate =0.05, which means that the influence of effort expectancy on user satisfaction is significant. The coefficient value shows a positive number 0.266, which means that effort expectancy has a positive effect on user satisfaction. Therefore, it can be concluded that effort expectancy has a significant effect on user satisfaction, thus it shows that users find pedulilindungi app is easy to learn and use. These results support previous related research that there is a significant effect between effort expectancy on user satisfaction (Teng et al., 2022; Al-Soni & Abu-Shanab, 2021; Purohit et al., 2022).

Facilitating condition on user satisfaction (H3)

H3. The t-statistic value is 3.125 which has a value greater than t-table =1.96, which means that facilitating condition has an effect on user satisfaction. Meanwhile, the P-value is 0.002, which is smaller than the error rate =0.05, which means that the influence of facilitating condition on user satisfaction is significant. The coefficient value shows a positive number 0.155, which means that facilitating condition Has a positive effect on user satisfaction. Therefore, it can be concluded that facilitating condition has a significant effect on user satisfaction, thus it shows that user have the technology that would support the utilization of the PeduliLindungi application. These results support previous related research that there is a significant effect between facilitating condition on user satisfaction (Al-Shammari&AlShowaikh, 2021; Indriati & Agustina, 2018; Wijaya et al.,2021).

Social Influence on user satisfaction (H4)

H4. The t-statistic value is 5.161 which has a value greater than t-table =1.96,which means that social influence has an effect on user satisfaction. Meanwhile, the P-value is 0.000, which is smaller than the error rate =0.05, which means that the influence of social influence on user satisfaction is significant. The coefficient value shows a positive number 0.221, which means that social influence Has a positive effect on user satisfaction. Therefore, it can be concluded that social influence has a significant effect on user satisfaction, thus it shows that social environment can influences a person to use PeduliLindungi app. These results support previous related research that there is a significant effect between social influence on user satisfaction (Lee & Kim, 2022; Wibowo, 2017; Kurniawan et al., 2021).

Information Quality on user satisfaction (H5)

H5. The t-statistic value is 2.087 which has a value greater than t-table =1.96, which means that information quality has an effect on user satisfaction. Meanwhile, the P-value is 0.037, which is smaller than the error rate =0.05, which means that the influence of information quality on user satisfaction is significant. The coefficient value shows a positive number 0,100, which means that information quality Has a positive effect on user satisfaction. Therefore, it can be concluded that information quality has a significant effect on user satisfaction, thus its shows that the information in pedulilindungi app is accurate and relevant. These results support previous related research that there is a significant effect between information quality on user satisfaction (Samsuri et al., 2022; Achmadi & Siregar, 2021; Siswanto & Triyonowati, 2022).

System Quality on user satisfaction (H6)

H6. The t-statistic value is 2.479 which has a value greater than t-table =1.96,which means that system quality has an effect on user satisfaction. Meanwhile, the P-value is 0.014, which is smaller than the error rate =0.05, which means that the influence of system quality on user satisfaction is significant. The coefficient value shows a positive number 0.131, which means that system quality Has a positive effect on user satisfaction. Therefore, it can be concluded that system quality has a significant effect on user satisfaction, thus it shows that the system of pedulilindungi app is reliable. These results support

previous related research that there is a significant effect between system quality on user satisfaction (Gurendrawati et al., 2022; AL-Okaily et al., 2021; Wang et al., 2019).

Service Quality on user satisfaction (H7)

H7. The t-statistic value is 2.826 which has a value greater than t-table =1.96, which means that service quality has an effect on user satisfaction. Meanwhile, the P-value is 0.005, which is smaller than the error rate =0.05, which means that the influence of service quality on user satisfaction is significant. The coefficient value shows a positive number 0.111, which means that service quality Has a positive effect on user satisfaction. Therefore, it can be concluded that service quality has a significant effect on user satisfaction, thus it shows that users are satisfied with the pedulilindungi app services. These results support previous related research that there is a significant effect between service quality on user satisfaction (Maulidiyah et al., 2022; Kumalasari et al., 2022; Furinto et al., 2022).

User satisfaction on continuance intention (H8)

H8. The t-statistic value is 40.145 which has a value greater than t-table =1.96, which means that user satisfaction has an effect on continuance intention. Meanwhile, the P-value is 0.000, which is smaller than the error rate =0.05, which means that the influence of user satisfaction on continuance intention is significant. The coefficient value shows a positive number 0,837, which means that user satisfaction Has a positive effect on user continuance intention. Therefore, it can be concluded that user satisfaction has a significant effect on continuance intention, thus it shows that user will likely keep using pedulilindungi app in the future. These results support previous related research that there is a significant effect between user satisfaction on continuance intention (Bayastura et al.,2022; Marinković et al., 2019; Prakash et al., 2021;).

Practical Implication

In this section, we provide the possible practical implication of our results. Based on table 5.the variable with the largest T-statistical value is User satisfaction. With the highest T-statistic value, User satisfaction is the most important factor that influences continuance intention, as indicated by the acceptance of H8.it can be implied that pedulilindungi users are willing to use the PeduliLindungi application as long the users are satisfied with the application.

The Effort expectancy variable is influenced by user satisfaction, indicated by the acceptance of H2. From the result, it can be implied that the effort expectancy is playing an important role towards user satisfaction therefore we recommended the developers of PeduliLindungi to designed the user interface of PeduliLindungi application to be simple and also easy to navigate, because peduliLindungi application is used by all ages, therefore it is important to make the application simple and easy to use so that all ages can use it.

The Facilitating Condition variable is influenced by user satisfaction, indicated by the acceptance of H3. From the result, it can be implied that facilitating condition have a significant role on the user satisfaction therefore we recommended the developers of PeduliLindungi to optimizing Pedulilindungi application can be used properly on smartphone platforms, including Android and iOS.

The Social influence variable is influenced by user satisfaction, indicated by the acceptance of H4. From the results, we recommended the Indonesian government to increase public awareness about the importance usage of peduliLindungi app one of the methods is by advertise on a large scale to enhance the public knowledge about the importance using the app thus by spreading the awareness will make users to believe the importance of using the app.

The Information Quality variable is influenced by user satisfaction, indicated by the acceptance of H5. From the result, we recommended the developers of PeduliLindungi app the information in the application to be updated in real time, to give up-to date accurate information. Several users have states problem that the vaccine certificate did taking long time to appear in the peduliLindungi app, therefore with the updated real time data the users will get the information instantly.

The System Quality variable is influenced by user satisfaction, indicated by the acceptance of H6. From the result, we recommended to the developer of PeduliLindungi to keep improving the system quality because of many people using the app it is needed to improve the system quality in order for the application to keep run smoothly even after being used by many users.

The Service Quality variable is influenced by user satisfaction, indicated by the acceptance of H7. From the result, we recommended to the developer of PeduliLindungi to train the customer service team to respond fast and efficiently to public queries when needed. Because of several users have states problem that the response from the PeduliLindungi team regarding users' complaints tends to be long, therefore by improving the customer service team will increase the service quality. Also, developers can added a feature called Feedback which gives an option to allow the users to give their reviews and comments as per the issues they face to enhance the service in a better way.

Thus, It can be concluded from this research that the most important factors that would increasing the satisfaction of the pedulilindungi user are the effort expectancy & social influences then are follow up with the other significant variable from this research, therefore the decisions maker and the developers of pedulilindungi should consider this recommendation and also focused to this important factor in order to increase the user satisfaction, with the increasing user that satisfied will keep user using the app and also will attract the new users.

5. Discussion and Conclusions

This research aims to study the factors that influence user satisfaction of pedulilindungi app. The study explored nine variables in this study: Performance expectancy, effort expectancy, facilitating condition, social influence, information quality, system quality, service quality, user satisfaction, continuance intention. This research can be a starting point to develop integrated theories in the future research.

We can conclude that effort expectancy, facilitating condition, social influence, information quality, system quality, service quality are significant determinants to predict the user satisfaction of peduliLindungi app and user satisfaction are significant determinants to predict the continuance intention of pedulilindungi app, user satisfaction was the strongest predictors followed by social influence and effort expectancy.

This study develops and fills the study gap in contact tracing user satisfaction study by using UTAUT and Delone & McLean model; this study also brings benefits to the government and technology developers to address the app's problems and raise public satisfaction. We hope that this recommendation could then be taken into consideration by the developers to improve on user satisfaction of the PeduliLindungi app.

Limitation & Future research

The limitation faced in this research. First, the study population only take place in a single area of Indonesia that is Jakarta; there are other areas in Indonesia that have yet to be explored, for example, area like Surabaya & Medan. Second, this study only captures the user satisfaction of contact tracing app using UTAUT and Delone Mclean models; there are still many models that have not been used that have a significant effect on the user satisfaction.

The future researchers are expected to be able to examine more deeply related to the user satisfaction in contact tracing app, future researchers can be focus on the privacy awareness and security on the relationship between the perceived privacy risk, perceived security, and users' satisfaction.

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