USER ACCEPTANCE ANALYSIS OF THE E-HEALTH INFORMATION SYSTEM USING UTAUT2 METHOD

FARIZ HAIKAL[1] , NIKEN KUSUMANING TYAS[2] , XENA DIVA FELCIA[3] , TANTY OKTAVIA[4], DAVID SUNDARAM[5]

[1,2,3,4]Information Systems, Bina Nusantara University, School of Information Systems, BINUS Undergraduate Program, Jakarta, Indonesia 11480

[4]Department of Information Systems and Operations Management, University of Auckland, Private Bag 92019, Auckland, 1142, New Zealand

E-mail: [1]fariz.haikal@binus.ac.id, [2]niken.tyas@binus.ac.id, [3]xena.felcia@binus.ac.id, [4]toktavia@binus.edu, [5]d.sundaram@auckland.ac.nz

ABSTRACT

E-health is an application that focuses on community services that offer services in the health sector. Since the Covid-19 pandemic, e-health applications have experienced an increase in users. The objective of this study was to determine what factors influenced the level of acceptability of e-health applications. The findings of this study indicated the most important aspects, such as the application's success rate and improved e-health application performance. Unified Theory of Acceptance and Use of Technology 2 (UTAUT 2) was the research model used. The online questionnaires in the form of survey were distributed and addressed for the e-health application users in Jakarta, Indonesia. PLS-SEM was used for analyzing the data and it involved 190 respondents on the survey. The result showed that the 10 hypotheses proposed, there is 5 hypotheses declared significant or accepted and others declared not significant or rejected.

Keywords: *E-Health, User Acceptance, UTAUT2, PLS-SEM, Covid-19*

1. INTRODUCTION

Beginning the year of 2020, the world has been experiencing a situation that has developed into a global emergency. This issue began with the spread of Covid-19 that continues to grow exponentially. According to JHU CSSE data, as of September 2021, the total amount of positive cases of Covid-19 was 219 million over 4 million deaths [1]. The occurrence of Covid-19 pandemic has provided significant changes, especially in the order of human social life. The way people communicate, socialize, and carry out other activities that previously could be done in person has now been moved online.

The sector that has succeeded in turning this situation into an advantage is the one that can collaborate with technology, as this pandemic 'forces' humans to undergo digital transformations. Digital transformations are the process of implementing disruptive technologies in order to boost productivity, value creation, and social welfare. There are numerous IT research regarding to digital transformation. Recent studies [2] stated, an intelligent healthcare must utilize advanced IT systems and data assets effectively in order to achieve their desired outcomes faster, and with less risk. Therefore, information technology development becoming a critical component of assisting human life in meeting its daily needs.

One of the sectors that have implements the digital transformation and has experienced a rapid increase during this Covid-19 pandemic is an application that focuses on community services that offer services in the health sector or commonly called e-health. The usage of the application in health sector provides many benefits for the community, especially in the current situation in which health is as the main focus that must be maintained by the community to deal with the Covid-19 virus. As an easily-accessed e-health application, people can consult with the doctors, buy some medicines, and conduct laboratory examination via online.
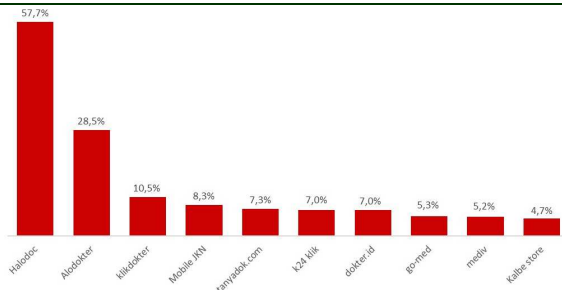
Figure 1: Top-of-Mind E-Health Application

Indonesia has a variety of e-health applications. According to DSResearch (2019), 57.7 percent of 438 respondents chose XYZ as the application that immediately comes to mind when asked about e-health applications [3]. This means XYZ is an application that has the highest brand awareness. Then followed by Alodokter, Klikdokter and Mobile JKN. Based on the data above, this research will focus on one application with the highest top-of-mind score in Jakarta.

By 2021 the number of e-health application installations has doubled from the previous year. Even more, in terms of telemedicine, which has increased nearly tenfold in the last decade [4]. These occurred as a result of a Ministry of Health appeal advising the public not to visit the hospital unless an emergency occurred for the sake of public health safety [5].

The rapid growth in usage of this application shows a phenomenon in which e-health applications gain many new users who use the services provided during the Covid-19 pandemic. Due to the widespread use of a system or application, it is critical to obtain a success score for acceptance as a metric of a system's success [6].

The purpose of this study was to determine the elements that influence the level of user acceptance of e-health applications by analyzing consumers' behavioral intention and use behavior using an information technology acceptance model developed by Venkatesh et al. in 2012. The model was entitled the Unified Theory of Acceptability and Use of Technology 2 (UTAUT2). It was chosen as the methodology as it focused on the acceptance and its usage of technology in a user context. [7]. This study addresses previous studies suggestions [8] to involve price value and hedonic motivation variables. The data collection was in the form of an online questionnaire and distributed to the respondent as the users of an e-health application in Indonesia. Then, it was analyzed by using Structural Equation Modeling - Partial Least Squares (PLS-SEM).

2. LITERATURE REVIEW

This section contains the theoretical basis used in discussing and analyzing problems related to the discussed topic. In this research, the things that will be studied further are E-Health Application, User Acceptance, UTAUT2, and PLS-SEM

2.1 Electronic Health (E-Health) Application

E-Health is defined as the application to improve people's health care [9]. The use of e-health can integrate healthcare and technology to assist people's lives while also cutting health-care expenses [10]. People can get health services anywhere and at any time with E-health, from consulting a doctor to actually buying medicine at the nearest clinic and having it delivered directly to their home, making medical appointments, lab tests, health articles, and a variety of other health support features.

During this whole COVID-19 pandemic, the presence of e-health has become one of the trends that has resulted from the improvement of communication technology, where people have a high awareness that health is an important asset that must be maintained and the desire to continue to seek information quickly from reliable and considered trustworthy sources [11]. Because of the public's fear of COVID 19, people are hesitant to go to the hospital when they only have mild illness or specific symptoms, e-health becomes a viable solution [12].

In line with the high level of demand for health services during the pandemic, one of the e-health applications in Indonesia (XYZ Application), since 2021 there has been a doubling of application installations from the previous year. Moreover, from the telemedicine side, it has increased almost 10 times from before [4]. According to previous study by Hidayat [6], the widespread use of a system or application causes the importance of obtaining user acceptance as a determinant of the success of a system which will be discussed in the next section.

2.2 User Acceptance

User Acceptance is described as the availability of users in implementing information technology to support or support activities that are in accordance with technology functions [13]. User acceptance is frequently used to determine the success or failure of an information system project. In other word, the higher the acceptance level of an information technology, the higher the user's desire in using its technology.

The involvement of user acceptance is the key in the implementation and further development of information technology. To enhance the level of technology use and user adoption, the emphasis on factors that can influence user acceptance should be increased [14]. Therefore, it is important to do an exploration related to user acceptance on XYZ Application.

2.3 Unified Theory of Acceptance and Use of Technology 2 (UTAUT 2)

UTAUT 2 is the result of further development by Vanketesh et al. from the previous model in 2003 [15]. UTAUT 2 was designed to be more consumer-focused [16]. With its development, its method can be used to examine customer acceptance and technology usage [7].

This model comprised seven primary independent variables and two dependent variables. The seven independent constructs are performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, and habit. As for the dependent constructs, there were behavioral intentions and use behavior. The further explanation of each variable is as follows.

a. Performance Expectancy is the degree to which users believe the presence of technology helps them in getting the job done. Also, it has been shown a substantial impact on technology acceptance and use [16].
b. Effort expectancy is the ease in which users feel when utilizing a technology and it has been found to have a significant impact in influencing technological acceptance and use [16].
c. Social Influence is someone who utilizes technology and encourage that other people should likewise use technology [16].
d. Facilitating Condition is referred to the impression of the resources offered by technology to facilitate the occurrence of a behavior to the user [16].
e. Hedonic Motivation is the sense of wonder that users get from using technology and it has been shown to have a key role in determining technology acceptance and use [16].
f. Price Value is a comparison of the user's costs and the advantages obtained [16].
g. Habit is a user's proclivity for using a technology that they have acquired [16].

h. Behavioral intention is formulated as a users' desire to utilize technology on a regular basis [16].
i. The frequency with which users use technology is referred to as use behavior. The usage of technology will be encouraged if users are motivated to do so because they believe in it. [16].

The variables in UTAUT 2 use four main variables from the previous UTAUT model and three additional primary independent variables. The addition of variables in the UTAUT 2 model may improve its ability to describe technological acceptance and utilization. The variance explained in behavioral intentions by 56% to 74% and technology use by 40% to 52% when compared to the previous UTAUT model [16].

2.4 Structural Equation Modeling – Partial Least Squares (PLS-SEM)

This research's statistical technique is Partial Least Squares Structural Equation Modeling or PLS-SEM. It is a regression-based ordinary least squares (OLS) estimation method that aims to "minimize the error terms [and maximize] the R^2 values of the (target) endogenous construct" in order to explain the latent constructs' variation [17]. It has become a widely known method for estimating latent variables and their variable relationships in complex route models. [18]. This path diagram consists of independent and dependent latent variables and indicators that measure each variable. This path diagram is used to visualize the hypothesis that has been determined.

In addition, PLS-SEM can also evaluate data quality based on the measurement model so that PLS-SEM can still produce estimates even for small sample sizes and deviations from the assumption of multivariate normality.

3. RESEARCH METHODOLOGY

The methodology used in this study involved the explanations of Research Model, Time and Object of Research, Research Sample, and Data Collection.

3.1 Research Model

This study adopted UTAUT 2 (Unified Theory of Acceptance and Use of Technology) as the research model, which was created by Venkatesh et al. in 2003 [15]. Four main variables involved in this study, namely performance expectancy, effort expectancy, social influence, and facilitating conditions. Meanwhile, in UTAUT2 this study

involved three additional latent variables, namely hedonic motivation, price value, and habit. Then, other additional latent variables were concerned because it was stated that the habit variable and hedonic motivation became an important influence on the level of acceptance of the use of a system [19].

The advantage of using the UTAUT2 method is that this method is better than the TAM method in measuring the analysis of the success of the application of information systems with UTAUT reaching 70.7%, while TAM can only measure 62.1% [20]. Previous research that has been carried out using UTAUT 2 assumes that UTAUT 2 is an acceptance analysis method which is a refinement of the previous methods [21]. All the advantages of UTAUT2 and the framework presented are very appropriate with the needs of this research.
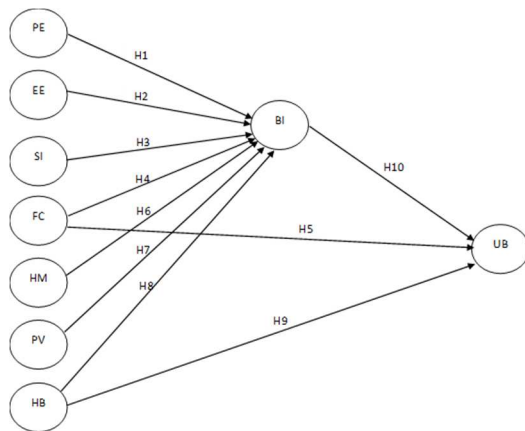

Figure 2: Research Model

Hypothesis:

- H1: Performance Expectancy (PE) influences Behavioral Intention significantly.
- H2: Effort Expectancy (EE) influences Behavioral Intention significantly.
- H3: Social Influence (SI) influences Behavioral Intention significantly.
- H4: Facilitating Conditions (FC) influences Behavioral Intention significantly.
- H5: Facilitating Conditions (FC) influences Use Behavior significantly.
- H6: Hedonic Motivation (HM) influences Behavioral Intention significantly.
- H7: Price Value (PV) influences Behavioral Intention significantly.
- H8: Habit (HB) influences Behavioral Intention significantly.
- H9: Habit (HB) influences Use Behavior significantly.

H10: Behavioral Intention (BI) influences Use Behavior significantly.

3.2 Time and Object of Study

This study was conducted from July to December 2021 to collect the data. The demographic target in this study was Indonesian XYZ application users, particularly those based in Jakarta. In addition, there were no restrictions on the respondents' age or gender.

3.3 Research Sample

This study used a non-probability technique, snowball sampling and the slovin formula to determine the number of responses in the questionnaire. According to the previous studies, researchers can determine the value of the confidence level or error tolerance of 10% or 0.1 of the population [22]. The following formula is for for the slovin formula.

$$n = \frac{N}{1 + Ne^2}$$

Information:
n = minimum sample size
N = population size
E = margin of error

Data collected from Kontan.co.id states that XYZ Application has 20 million active users [23], so this number will be used as the N value or population size. So, the sample size to be used is 100 respondents.

3.4 Data Collection Method

Survey was conducted as the data collection by distributing the questionnaire. The questionnaire, as the instrument, was made digitally by using Google Forms and the lead top of mind e-health Applications, XYZ for subject statements in the second section to represent e-health applications generally. The information was then disseminated to the target group by using social media and instant messaging systems.

This questionnaire consisted of three sections. The first section consisted of an opening sentence which contained the introduction of the author. The purpose and objectives of the questionnaire and the request for filling were addressed to the respondent to fill out the questionnaire. After that, there were demographic questions regarding the respondent's background whether they once used XYZ or not based on their age, gender, and domicile. Some questions regarding the respondent's background

have validated in using e-health application. If the respondent has never used the questionnaire, the questionnaire will be completed immediately and the data will not be used for analysis and calculations.

In the second section, there is a series of statements that are divided according to each variable used in the research model, there were total 27 statements which representing 9 variabels of UTAUT2. The statement is made in the form of a Likert scale and respondents must answer based on experience in using e-health applications. Table 1 is the questionnaire statement as follows.

Table 1: Questionnaire Statements

Variable	Code	Statement
Performance Expectancy (PE)	PE1	Using the XYZ e-health application is useful for me
	PE2	Using the XYZ e-health application increases the efficiency of online health consultations for me
	PE3	XYZ e-health application helps solve my health problems faster
Effort Expectancy (EE)	EE1	XYZ application increases the efficiency of time and energy spent
	EE2	The flow process of each feature of the XYZ consultation is structured
	EE3	I find the XYZ e-health application easy to use
Social Influence (SI)	SI1	I use the XYZ e-health application because people around me use it
	SI2	People in my surroundings recommended me to use the XYZ E-Health Application
	SI3	People in my surroundings use XYZ application just to look trendy.
Facilitating Conditions (FC)	FC1	I have the knowledge and access to the resources that needed to use the XYZ e-health application
	FC2	It's easy for me to obtain assistance in using the XYZ e-health application when I have trouble
	FC3	The XYZ e-health application makes it easier for me by providing other digital technology service options that I usually use (Ex: Go-Pay, Dana, Ovo, and Virtual Accounts)
Hedonic Motivation (HM)	HM1	It's enjoyable to use the XYZ e-health application.
	HM2	Using one of XYZ's e-health features makes me entertained
	HM3	Using the XYZ e-health application makes myself more valuable (Prestige)
Price Value (PV)	PV1	The cost of using XYZ e-health is in-line with the ease of consultation that I get
	PV2	the price of using XYZ e-health is affordable

Variable	Code	Statement
	PV3	The consultation fee is reasonable in comparison to the benefits provided by XYZ.
Habit (HB)	HB1	The use of the XYZ e-health application has become a habit for me
	HB2	I choose to use the XYZ e-health application for consultation on health problems compared to other applications
	HB3	When I experience health problems, I automatically use the XYZ e-health application compared to conventional consultations
Behavioral Intention (BI)	BI1	I want to use the XYZ e-health application again after my first experience and use the application continuously
	BI2	The XYZ e-health application has provided a good service
	BI3	I often hear or see other users talking positively about the XYZ e-health application
Use Behavior (UB)	UB1	Overall, using the XYZ e-health application in providing health solutions makes me feel satisfied
	UB2	Apart from health purposes, I also use the XYZ e-health application for other things
	UB3	I use the XYZ e-health application consistently

Finally, the last part or the closing section contains non-mandatory questions regarding the contact of respondents who can be contacted for giving the lucky draw prizes and also thanks for the time taken by respondents to fill out the questionnaire.

This study also includes secondary research data from many academic journals and previous research in addition to data acquired through the survey. It was used to back up the theories and concepts that were utilized in this study.

4. RESULT AND DISCUSSION

XYZ, as the main focus of this study, was used in this study. In this section, the results of analyzing data by using PLS-SEM method will be discussed. There were two stages in evaluating the model, namely Evaluation of the Measurement Model (The Outer Model) and Evaluation of the Structural Model (The Inner Model) [24]. The measurement model evaluation, also known as the outer model, is a model that is used to analyze the reliability and validity of variable indicators and their corresponding constructs [25]. The structural model, also known as the inner model, is a model that is used

to specify an unknown relationship between the independent and dependent variables [26].

4.1 Descriptive Analysis

This research successfully acquired a total of 221 respondents in around three months of data collection. However, not all of the respondents used e-health apps and lived in Jakarta. Only 190 out of the total respondents who have ever used an e-health application and live in Jakarta were able to be evaluated in this study. This number still exceeds the minimum sample size determined using the Slovin technique, which is 100 respondents.

Table 2: Respondent Demographic

Demographic Variabel	Category	Frequency
Ever used E-Health Application?	Yes	207
	No	14
Domicile in Jakarta?	Yes	190
	No	17
Gender	Female	116
	Male	74
Age	16 - 20	29
	21 - 30	132
	31 - 40	14
	41 - 50	11
	51 - 56	5
	>56	0
Jakarta's Regional	South Jakarta	80
	North Jakarta	9
	Central Jakarta	21
	West Jakarta	66
	East Jakarta	21

There are 116 females and 74 males among the 190 responders, indicating that females are more prevalent. However, with 132 participants, the majority of the responses are between the ages of 21 and 30. And the majority of the respondents (80 persons) live in South Jakarta.

4.2 Outer Model Analysis

Outer models, or commonly called measurement models, are models commonly used to evaluate variable indicators with their appropriate constructs [25]. In this part, the testing at the outer model consisted of Internal Consistency Reliability and Convergent Validity.

4.2.1 Internal consistency reliability test

Internal consistency reliability testing refers to the process of determining the consistency of a variable's indicator. This measurement can be used by using composite reliability or Cronbach's alpha. Furthermore, it will use these two measurements.

A higher value in the reliability test indicated a higher level of reliability or reliability. Variables can be declared reliable or reliable if the composite reliability value is above 0.7 [27].

Table 3: Composite Reliability Test Result

Variable	Composite Reliability
BI	0.889
EE	0.856
FC	0.876
HB	0.838
HM	0.884
PE	0.853
PV	0.924
SI	0.912
UB	0.864

The table above showed the Composite Reliability value of each variable having a value above the threshold of 0.7. It signifies that all variables were dependable and were included in the analysis and not excluded from the model.

Table 4: Cronbach's Alpha Test Result

Variable	Cronbach's Alpha
BI	0.813
EE	0.750
FC	0.798
HB	0.707
HM	0.803
PE	0.746
PV	0.876
SI	0.856
UB	0.766

The Cronbach's Alpha value of each variable with a value above than 0.7 was shown in the Table 4. In the Cronbach's Alpha test, the variable can be declared reliable if the value was above 0.7. It can be inferred that all variables have met the criteria and it can be declared reliable.

4.2.2   Convergent validity test

Average Variance Extracted (AVE) was performed by using a convergent validity test. To be acceptable, each variable must be equal to or higher than 0.5.

A value of 0.5 or higher suggests that the variable can explain half or more of the construct's indicator variants [28].

Table 5: Average Variance Extracted Test Result

Variable	Average Variance Extracted (AVE)
Behavioral Intention	0.727
Effort Expectancy	0.668
Facilitating Condition	0.703
Habit	0.634
Hedonic Motivation	0.718
Performance Expectancy	0.661
Price Value	0.802
Social Influence	0.777
Use Behavior	0.682

In table 5, each construct has an average variance extracted value above 0.5. In other words, each construct can explain 50% or more of the indicators that make up the construct and can pass the convergent validity test because it meets the criteria.

4.3 Inner Model Analysis

Processing is required for the inner model at this stage in order to examine the connection between the independent and dependent variables. There are several tests that must determine so that the Inner Model can meet the criteria, including the test coefficient of determination (R^2).

Examining the coefficient of determination explained that the measurement of the explanatory power of the model can be used to see the ability of exogenous variables to affect the endogenous variables.

Table 6: R Square Test Result

Dependent Variable	R Square	R Square Adjusted
Behavioral Intention	0.607	0.592
Use Behavior	0.301	0.289

Based on the results in Table 6, it showed that the R^2 value of each endogenous variable used in the study. The endogenous latent variable Behavioral Intention (BI) has an R^2 value of 0.607. It means that it was influenced by 60.7% by the variables of Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Condition, Hedonic Motivation, Price Value and Habit. Other characteristics not included in the study have a 39.3% influence on BI.

The endogenous latent variable Use Behavior (UB) has an R^2 value of 0.301, indicating that the variables Facilitating Condition, Habit, and Behavioral Intention influence it by 30.1%. Meanwhile, variables out of the study have a 69.9% influence on UB.

The findings of this testing and processing investigation revealed that the overall model under consideration fit the data or could reflect a reality or occurrence. This is necessary in order for this study to be considered legitimate and reliable.

By validating all of the outcomes in a fit model (path diagram), all variables that are valid and reliable could be a reflection of the latent variable.
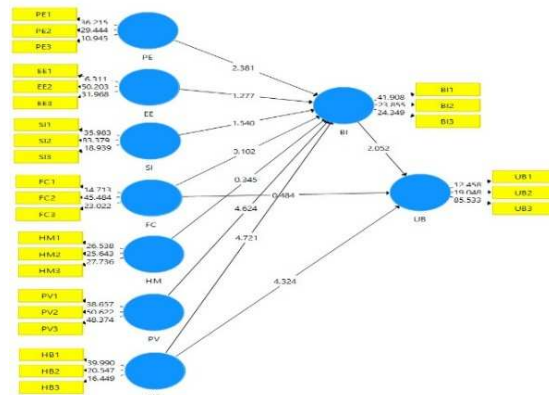

Figure 3: Final Model Output

Table 7 showed the results of hypothesis testing using the data collected as follows.

Table 7: Hypothesis Testing Result

Path	Path Coefficient	t-statistics	Description
PE → BI	0.167	2,381	Positive; Significant
EE → BI	0.098	1,277	Positive; Not Significant
SI → BI	0.080	1,540	Positive; Not Significant
FC → BI	0.006	0.102	Positive; Not Significant
FC → UB	0.036	0.484	Positive; Not Significant
HM → BI	-0.021	0.345	Negatives; Not Significant
PV → BI	0.378	4.624	Positive; Significant
HB → BI	0.298	4.721	Positive; Significant
HB → UB	0.391	4.324	Positive; Significant
BI → UB	0.192	2.052	Positive; Significant

The structural model represents the relationship between constructs, and one of the ways in which this relationship is evaluated is through the use of path coefficients. The path coefficient and t-statistics values for each relationship are shown in Table 6. A positive path coefficient indicates a positive correlation between the independent and dependent variables. The usage of the t-statistics value aimed to determine its significance. If the t-statistics value is higher than 1.96, the correlation was likely to be significant.

As a result of the findings, nine of the relationships have a positive path coefficient, indicating that the independent latent variable has a positive effect on the user's intention and/or behavior when using e-health application. Half of the ten relationships have a significant relationship. Based on the result of testing hypothesis, it was found that:

H1: Performance Expectancy influences Behavioral Intention significantly

According to the findings, the Performance Expectancy variable influences Behavior Intention significantly. The results of this study showed that the evidenced by the t-statistics value of 2.381 and the path coefficient value of 0.167 obtained from data processing. This hypothesis was accepted or significantly effect each other. The reason was that the t-statistics value was above 1.96 and the path coefficient below was above 0.1.

The result of this study is in line with the findings of previous studies by Palau-Samuell et al. [21] and

Kartikasari et al. [29]. Performance Expectancy has a significant effect on Behavioral Intention. It is possible to conclude that users find that using the XYZ e-health application is useful in everyday life, and it can improve the efficiency of meeting their daily needs, particularly in the health sector.

This study suggested that XYZ should maintain and continue to improve performance based on user needs in order to sustain and continue to improve user intention to use the application.

H2: Effort Expectancy influences Behavioral Intention significantly

According to the findings, the Effort Expectancy variable does not influence the Behavior Intention significantly. This is evidenced by the t-statistics value of 1.277 and the path coefficient value of 0.098 obtained from data processing. This hypothesis was rejected or doesn't significantly effect each other. The reason was that the t-statistics value was below 1.96 and the path coefficient was below 0.1.

This study results are supported with those of previous studies by Lubis et al. [30] and Putra et al. [31] where Effort Expectancy has no significant effect on Behavioral Intention. This is possible because the XYZ application is a service and health application, and users use it because it provides service support when the user in need of assistance. As a result, the factor of effort is no longer relevant d have no effect on user intention. This is supported by the results of the distributed surveys, which shows that most respondents were already satisfied with the XYZ application's ease of use.

Although Effort Expectancy is not the primary motivation for intention of user in using XYZ application, this does not mean that there is no room for improvement. The recommendation made to enhance this variable was to provide a suggestion shortcut feature based on prior transactions (history) in order to reduce the time users spend following the application's flow of use.

H3: Social Influence influences Behavioral Intention significantly

According to the findings, the Social Influence variable does not influence the Behavior Intention significantly. This can be seen by examining at the t-statistics value of 1.54 and the path coefficient value of 0.08. This hypothesis was rejected or doesn't significantly effect each other. The reason was that the t-statistics value was below 1.96 and the path coefficient was below 0.1.

The result of this study is in line with the findings of previous studies by Palau-Samuell et al. [21] and Suki & Suki [32], where found that Social Influence has no significant effect on Behavioral Intention. There are 2 possible explanation of this result, first it is because the XYZ application is an application that provides health services where most of these services are used for people who have health complaints or want to buy medicine needs. Thus, social influence from other people does not increase user interest in using the application because the intention of using of the application returns to the needs of the person himself and there are numerous offline and online pharmacies and health care providers that they usually choose. Second, this result is also reinforced by the statement in the previous study by Palau-Samuell et al. [21] that states if the study finds that habit has a strong significant influence on behavioral intention, as this study of XYZ application also discovered, then the social norm becomes less relevant and had no significant effect on intention of using the application.

Although Social Influence is not the primary motivation for intention of user in using the XYZ application, this does not mean that there is no room for improvement. There are two suggestions for improving this variable. To begin, by boosting promotions through social media that are on the rise regarding positive testimonials and what benefits can only be felt if using an application to pique the interest of a large number of people. Second, develop a campaign that leverages influencers to increase brand awareness of the XYZ application, with the goal of enhance the people awareness about the existence of trustworthy health applications.

H4: Facilitating Condition influences Behavioral Intention significantly

According to the findings, the Facilitating Condition variable does not influence the Behavior Intention significantly. This can be revealed from the 0.102 t-statistics value and the 0.006 path coefficient value collected during data processing. This hypothesis was rejected or doesn't significantly effect each other. The reason was that the t-statistics value was below 1.96 and the path coefficient was below 0.1.

The result of this study is in line with the findings of previous studies by Lubis et al. [30] and Hariyanti et al. [33], where also found that Facilitating Condition has no significant effect on Behavioral Intention. This shows that the technical infrastructure and functional availability that supports XYZ application does not increase user intention in the use of its application. It is possible because when compared to various other applications, including e-health and other service applications. XYZ application still has limited e-wallet application alternatives. Apart from the banking application, XYZ presently partners with only a single e-wallet, Gopay. This forces the user to be more selective in selecting other applications that provide more customization option for user's e-wallet application.

Although Facilitating Condition is not the primary motivation for intention of user in using XYZ application, this does not mean that there is no room for improvement. This study suggests XYZ to enhance collaboration with e-wallets in order to boost the diversity of payment services available in the XYZ application, allowing users to choose from a variety of possibilities.

H5: Facilitation Condition influences Use Behavior significantly

The results indicated that the Facilitating Condition does not influence Use Behavioral significantly. From the t-statistics value collected from data processing, the result was 0.484 and the path coefficient value collected was 0.036. This hypothesis was rejected or doesn't significantly effect each other. The reason was that the t-statistics value was below 1.96 and the path coefficient was below 0.1.

The result of this study is supported by Hariyanti et al. [33], where also found that Facilitating Condition has no significant effect on Use Behavior. It demonstrated that the technical infrastructure and functional availability necessary to support the XYZ application do not incentivize people to use it. This conclusion is consistent with previous hypothesis where Facilitating Condition had no significant effect on Behavioral Intention and had the same reason which are the limited e-wallet application alternatives of XYZ application. Apart from the banking application, XYZ presently partners with only a single e-wallet, Gopay. This may lead users to choose applications that offer a wider range of e-wallet applications to match the e-wallet that the user has.

This conclusion corresponds to the outcome of the hypothesis where Facilitating Condition had significant effect on Behavioral Intention. The suggestion for this study is identical to the last one, namely enhancing collaboration with e-wallets in

order to boost the diversity of payment services available in the XYZ application, allowing users to choose from a variety of possibilities.

H6: Hedonic Motivation influences Behavioral Intention significantly

The Hedonic Motivation variable does not influence Behavior Intention significantly. It can be seen from the t-statistics value collected from data processing, which is 0.345. and the path coefficient value collected is -0.021. This hypothesis was rejected or doesn't significantly effect each other. The reason was that the t-statistics value was below 1.96 and the path coefficient was below 0.1.

Kartikasari et al. [29] and Fatihanisya & Purnamasari [34] supported the findings in this study that there is no significantly effect on Behavioral

Intention from Hedonic Motivation. It may be concluded that users' hedonic motivations, such as entertainment, fun, interactive features, and sensations of pride and privilege found no effect on their intention to use the XYZ application. A possible explanation to this result because XYZ is an application that provide providing health services and assistance, and the user's intention in using it is to obtain solutions and services related to user's health, not for recreational pleasure purposes (hedonism).

Although Hedonic Motivation is not the primary motivation for intention of user in using XYZ application, this does not mean that there is no room for improvement. The suggestion made for this variable is to add a feature that allows users to select a user interface theme application that may be altered according to the user's preferences, hence enhancing user ease and excitement.

H7: Price Value influences Behavioral Intention significantly

According to the findings, the Price Value variable influences Behavior Intention significantly. This can be seen in the t-statistics value of 4.624 and the path coefficient value of 0.378 obtained from data processing. This hypothesis was accepted or significantly effect each other. The reason was that the t-statistics value was above 1.96 and the path coefficient was above 0.1.

Hariyanti et al. [33] found that Price Value has significant effect on Behavioral Intention and it has the same result as this study. The user's perceived price value is consistent with the service received

and the more awareness of benefits and the lower costs that users can get in using the application can increase the user's intention of using the XYZ application.

To sustain and continue to enhance user intention to use the application, this study suggest that the discount promotions or cashback from a transaction continue to be maintained on a consistent basis. Furthermore, XYZ application can provide points that are awarded for each transaction, which can then be redeemed for discounted vouchers or free consultations. This can be accomplished by collaborating with the XYZ application's pharmacy merchants, clinics, doctor partners, and e-wallet companies.

H8: Habit influences Behavioral Intention significantly

The results indicated that the Habit variable influences Behavior Intention significantly. From the t-statistics value collected from data processing, the result is 4.721 and the path coefficient value collected is 0.298. This hypothesis was accepted or significantly effect each other. The reason was that the t-statistics value was above 1.96 and the path coefficient was above 0.1.

According to the result above, habit is the strongest factors affecting the user's intention of using the XYZ application. Pulau-Samuell et al. [21] and Lubis et al. [30] also found that Habit were the most factors that has significant effect on Behavioral Intention. The continuous use of the application will instill a user's belief in the XYZ application's online health services in compared to other online health service providers and will increase user's intention to use the application. It is also can be conclude that the more automated the user is in using the XYZ application, it is aligning with the user intention in using the application.

To sustain and continue to enhance user intention in its application, this study suggests that XYZ application must maintain and improve the advantages that users derive from other variables so that the application can be reused indefinitely.

H9: Habit influences Use Behavior significantly

According to the findings, the Habit variable influences Use Behavior significantly. This can be seen in the t-statistics value of 4.324 and the path coefficient value of 0.391 obtained from data processing This hypothesis was accepted or significantly effect each other. The reason was that

the t-statistics value was above 1.96 and the path coefficient was above 0.1.

Pulau-Samuell et al. [21] and Lubis et al. [30] have the same results as this study. In short, the continuous use of the application will instill a user's belief in the XYZ application's online health services in compared to other online health service providers and will increase the use the application. In addition, the more automated the user's contact with the XYZ software, the more frequently the application will be used as a user health assistant.

This finding supports a previous hypothesis in which habit had a significant effect on Behavioral Intention. XYZ application must preserve and improve the benefits that users obtain from other factors in order for the application to be reused indefinitely.

H10: Behavioral Intention influence Use Behavior significantly

According to the findings, the Behavior Intention variable influences Use Behavior significantly. The path coefficient value obtained from data processing is 0.192, and the t-statistics value obtained from data processing is 2.052. This hypothesis was accepted or significantly effect each other. The reason was that the t-statistics value was above 1.96 and the path coefficient was above 0.1.

Lubis et al [30] and Hariyanti et al. [33] found the same results that Behavioral Intention has significant effect on Use Behavior. To sum up, the users are more likely to use XYZ application if user have the intention in using it.

The user's intention can last indefinitely if the e-health application continues to implement strategies for user retention and makes the e-health application a daily solution for users by following the recommendations of other variables in this study, particularly those found to have a significant effect on behavior intention; Performance Expectancy, Habits, and Price Value.

5. CONCLUSION & SUGGESTION

This section contains explanations of discussion and interpretations that refer to conclusions and suggestions on the results of the research.

5.1 Conclusion

Since the Covid-19 pandemic, the number of users of e-health applications has increased. This phenomenon resulted in the increase of variations in user behavior, which can be analyzed to identify a pattern that can be interpreted as a strategy to improve the quality of e-health applications.

Hence, this phenomenon can be took as an advantage to do a research to analyze on the data of the factor that affects user acceptance of XYZ e-health application by adopting the UTAUT2 method using the seven independent variable which are performance expectancy, effort expectancy, social influence, facilitating condition, hedonic motivation, price value, habit and two dependent variable behavioral intention and use behavior. The data was collected from e-health application users within Jakarta area and analyzed using PLS-SEM. The result of this study can be drawn include the following.

1. Performance Expectancy, Price value and Habit significantly affects behavioral intention of XYZ application's users.
2. Effort Expectancy, Social Influence, Facilitating Condition, Hedonic Motivation does not significantly affects behavioral intention of XYZ application's users.
3. Habit and Behavioral Intention significantly affects use behavior of XYZ application's users.
4. Facilitating Condition does not significantly affects behavior of XYZ application's users.

Based on the findings above, improving the variables that have significantly affect the behavioral intention, which are Performance Expectancy, Price value and Habit, it can increase the users' desire to utilize the XYZ e-health application on a regular basis rather than other variables.

In addition to the variables that have a significant impact on use behavior, which are Habit and Behavioral intention. By improving those variables, rather than the facilitating condition, it is possible to influence the frequency with which users use the application.

This study provides several recommendations for each variable in the result and discussion chapter above. There is additional recommendation that can be developed for platform owners is to create an innovation that is carried out regularly or continuously so that it becomes a habit for users. One example of innovation that can be done is to create a promo or health consultation campaign that is routinely held every month. This campaign has the potential to boost user habit and pricing value in the app, which will have a big impact on their desire to use the service.

5.2 Suggestion

From the research results collected, several recommendations are proposed as a complement. As a result of this research:

1. The proposed recommendations can be considered by XYZ applications as an effort to improve application performance in terms of user acceptance
2. The findings can be used for other e-health application to determine the factors that influence behavior intention and use in other e-health applications. Thus those other e-health applications can consider these factors into account while optimizing performance.

Meanwhile, some aspects that are lacking in this research are expected to be improved in further research, such as respondents related to regional demographics and age. The respondents in this study were highly concentrated in their 16s and 30s and only focused on the DKI Jakarta area, which could potentially not represent the entire population.

Therefore, further research is expected to be able to use data from respondents with a more varied age range, such as respondents from the elderly and a wider area, such as respondents who live in Greater Jakarta. In addition, future studies can use other research models in order to produce findings from a different perspective beyond the variables used in UTAUT.

REFERENCES:

[1] Johns Hopkins Coronavirus Resource Center, "COVID-19 Map", 2021. [Online]. Available: https://coronavirus.jhu.edu/map.html. [Accessed 13 October 2021]

[2] Gayatri Gopal, Clemens Suter-Crazzolara, Luca Toldo, and Werner Eberhardt, "Digital transformation in healthcare–architectures of present and future information technologies", *Clinical Chemistry and Laboratory Medicine (CCLM)*, Vol. 57, No. 3, 2019, pp. 328-335.

[3] DSRESEARCH, "The Penetration of Active and Healthy Urban Lifestyle: The Understanding of Wellness Market in Jakarta 2019", 4 December 2019. [Online]. Available: https://dailysocial.id/research/wellness-awareness-in-jakarta-2019. [Accessed 15 October 2021]

[4] Kompas, "Jumlah Unduhan Aplikasi Halodoc Naik Dua Kali Lipat Sejak Pandemi", 4 May 2021. [Online]. Available: https://money.kompas.com/read/2021/05/04/192012926/sum-unduhan-application-XYZ-naik-dua-kali-fold-sejak-pandemic. [Accessed 10 October 2021].

[5] Ministry of Health, "All hospitals are advised not to open routine practice except for emergencies", 16 April 2020. [Online]. Available: https://www.kemkes.go.id/article/view/20041600001/jual-rs-diimbau-tak-buka-laksana-rutin-except-emergensi.html. [Accessed 05-Nov-2021].

[6] Muhammad Taufik Hidayat, Qurrotul Aini, and Elvi Fetrina, "Penerimaan Pengguna E-Wallet Menggunakan UTAUT 2 (Studi Kasus)", *Jurnal Nasional Teknik Elektro dan Teknologi Informasi*, Vol. 9, No. 3, 2020, pp. 239-247.

[7] Fiby Nur Afiana, Pungkas Subarkah and A. Kholil Hidayat. "Analisis Perbandingan Metode TAM dan Metode UTAUT 2 dalam Mengukur Kesuksesan Penerapan SIMRS pada Rumah Sakit Wijaya Kusuma DKT Purwokerto", *MATRIK: Jurnal Manajemen, Teknik Informatika dan Rekayasa Komputer*, Vol. 19, No. 1, 2019, pp. 17-26.

[8] Jarot S. Suroso, Tetuko Caton Sukmoro, "Factors Affecting Bravior of the Use of Healthcare Mobile Application Technology in Indonesian Society", Journal of Theoretical and Applied Information Technology, Vol. 99, No. 15, 2021, pp. 3923-3934.

[9] Ossebaard, Hans C., and Lisette Van Gemert-Pijnen, "eHealth and quality in health care: implementation time", *International journal for quality in health care,* Vol. 28, No. 3, 2016, pp. 415-419.

[10] Zaman, Sojib Bin, et al. "Contexts and opportunities of e-health technology in medical care", *Journal of Medical Research and Innovation,* Vol. 1, No. 2, 2017, AV1-AV4.

[11] Rinda Wahyuni and Nurbojatmiku, "Explaining acceptance of e-health services: An extension of TAM and health belief model approach", *2017 5th International Conference on Cyber and IT Service Management (CITSM)*, 2017, pp. 1-7.

[12] Muhammad Zubair Elahi, Gao Liang, Muhammad Jawad Malik, Sana Dilawar and Bena Ilyas, "Fear Of Covid-19 And Intentions Towards Adopting E-Health Services: Exploring The Technology Acceptance Model In The Scenario Of Pandemic", *International Journal of*

Business, Economics and Management, Vol. 8, No. 4, 2021, pp. 270-291.

[13] Andrew Dillon, "User Acceptance of Information Technology", *Encyclopedia of Human Factors and Ergonomics,* 2001.

[14] Hamed Taherdoost, "A review of technology acceptance and adoption models and theories", *Procedia Manufacturing,* Vol. 22, 2018, pp. 960-967.

[15] Viswanath Venkatesh, Michael G. Morris, Gordon B. Davis and Fred D. Davis, "User Acceptance of Information Technology: Toward a Unified View", *MIS Quarterly*, Vol. 27, 2003, pp. 425-478.

[16] Viswanath Venkatesh, James Y. L. Thong and Xin Xu, "Consumer Acceptance and Use of Information Technology: Extending the Unified Theory of Acceptance and Use of Technology", *MIS Quarterly,* Vol. 36, No.1, 2012, pp. 157-158.

[17] Joseph F. Hair, G. Tomas M. Hult, Christian Ringle, Marko Sarstedt, "A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)", *Thousand Oaks: Sage,* 2014, pp. 14.

[18] Joseph F. Hair, Marko Sarstedt, Torsten M. Pieper, and Christian M.Ringle. "The Use of Partial Least Squares Structural Equation Modeling in Strategic Management Research: A Review of Past Practices and Recommendations for Future Applications", *Long Range Planning,* Vol. 45, No. 5-6, 2012, pp. 320-340.

[19] Susan J Woolford, Sarah J Clark, Victor J Stretcher and Kenneth Riscow, "Tailored mobile phone text messages as an adjunct to obesity treatment for adolescents", *Journal of Telemedicine and Telecare,* Vol. 16, No. 8, 2010, pp. 458-461.

[20] Hamrul, Heliawaty, Bambang Soedijono, and Armadyah Amborowati, "Comparative analysis of the TAM and UTAUT methods in measuring the success of implementing an academic information system (a case study of the application of the STMIK information system in Makassar)", *Seminar Nasional Informatika 2013 (semnasIF 2013),* Vol. 1, No. 1, 2013, Pp. 140-146.

[21] Palau-Saumell Ramon, Santiago Forgas-Coll, Javier Sanchez-Garcia, and Emilio Robres, "User acceptance .of mobile apps for restaurants: An expanded and extended UTAUT-2", *Sustainability,* Vol. 11, No. 4, 2019.

[22] Ayu Asari, Boyke H. Toloh, and Joudy R.R. Sangari, "Development OfCommunity Based Ecotourism In Bahoi Village, West Likupang District, North Minahasa Regency", *Jurnal Ilmiah Platax,* Vol. 6, No. 1, 2018, pp. 29-41.

[23] Kontan, "Has 20 million monthly active users, this is XYZ's focus during the pandemic period" 31 December 2021. [Online]. Available: https://industri.kontan.co.id/news/punya-20-juta-user-aktif-bulan-begini-fokus-XYZ-selama-masa-pandemic. [Accessed 04-Oct-2021].

[24] Joseph F. Hair,, Christian M. Ringle, and Marko Sarstedt. "Partial least squares structural equation modeling: Rigorous applications, better results and higher acceptance", *Long Range Planning: International Journal of Strategic Management,*Vol. 46, No. 1-2, 2013, pp. 1-12.

[25] Joe F. Hair Jr., Marko Sarstedt, Lucas Hopkins, and Volker G. Kuppelwieser, "Partial least squares structural equation modeling (PLS-SEM): An emerging tool in business research", *European Business Review*, Vol. 26, No. 2, 2014, pp.106-121

[26] Wong and Ken Kwong-Kay. "Partial least squares structural equation modeling (PLS-SEM) techniques using SmartPLS", *Marketing Bulletin*, Vol. 24, 2013, pp. 1-32.

[27] Joseph F. Hair Jr, William C. Black, Barry J. Babin, and Rolph E. Anderson, "Multivariate Data Analysis", *Technometrics,* Vol. 49, 2013, pp. 103-104.

[28] Joseph F. Hair, Jeffrey J. Risher, Marko Sarstedt and Christian M. Ringle, "When to use and how to report the results of PLS-SEM", *European Business Review,* Vol. 31, No. 1, 2018, pp. 2-24.

[29] Yuliana Kartikasari, Sunaryo Sunaryo, and Agung Yuniarinto, "The Intention To Use E-Commerce To Purchase Green Cosmetics With A Modified Utaut2 Approach", *JAM: Jurnal Aplikasi Manajemen,* Vol. 19, No. 3, 2021, pp. 605-615.

[30] Lubis, Muhammad Faikar Thaufan, and Filda Rahmiati. "User acceptance of online travel agents agent for millenials and gen Z." *Jurnal Muara Ilmu Ekonomi dan Bisnis,* Vol. 3, No. 2, 2019, pp. 375-388.

[31] M. Adriansyah Alam Putra, M. Qomarul Huda, and Elvi Fetrina, "Evaluation of Use of Bank Mandiri E-Money An Evaluation of e-Money Products Using UTAUT 2 Model (The Case of Bank Mandiri)", *2019 7th International Conference on Cyber and IT Service Management (CITSM),* 2019, pp.1-7.

[32] Norbayah Mohd Suki and Norazah Mohd Suki, "Determining students' behavioural intention to use animation and storytelling applying the UTAUT model: The moderating roles of gender and experience level", *The International Journal of Management Education,* Vol. 15, No. 3, 2017, pp. 528-538.

[33] Annesuska Octvie Hariyanti, Syarif Hidayatullah, and Dwi Arman Prasetya, "Analysis of the Acceptance and Use of Mobile Banking Services Using the Unified Theory of Acceptance and Use of Technology (Case Study of Bank Jatim Pasuruan Branch)", *International Research Journal of Advanced Engineering and Science*, Vol. 5, No. 1, 2020, pp. 254-262.

[34] Andi Nur Sheila Fatihanisya, and Susan Dian Purnamasari, "Penerapan Model Unified Theory Of Acceptence And Use Of Technology (UTAUT 2) Terhadap Perilaku Pelanggan E-Commerce Shopee Indonesia Di Kota Palembang", *Journal of Information Systems and Informatics*, Vol. 3, No. 2, 2021, pp. 392-417.