UTAUT2 model for analyzing factors influencing user in using Online Travel Agent

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Abstract- Technology development in Indonesia has increasingly progressed and provided business opportunities for businesses to meet customer's needs. The presence of e-commerce that have been widely spread in Indonesia is one of the examples of the technological progress. Indonesia already has an e-commerce online travel agent that prioritized user's needs to make it easier for the user to make an online reservation more efficient and effective. Traveloka and Tiket.com are an e-commerce online travel agents with many downloader in Indonesia, in choosing an online travel agent, users are certainly influenced by several factors identify by using UTAUT2 model. The results of this study indicate the use of Traveloka for users is influenced by perceived security, price value, and habit factors, while Tiket.com is influenced by facilitating conditions, performance expectancy, and habit. Companies could focus on these factors in terms of increasing the desire of users to use online travel agents.

Keywords: Online Travel Agent, UTAUT 2

I. INTRODUCTION

In this digital era, the number of internet users in Indonesia is around 30% or reaching 82 million people from the total population providing business opportunities for companies in the e-commerce sector [1]. The Statistics in Indonesia in 2019 stated that online sales transactions reached 23.82 million transactions and obtained operating revenues of 17.21 trillion[2]. A large number of transactions in e-commerce are encouraging tourism companies to create an Online Travel Agent. Nowadays, users are more interested in using an online travel agent because the accessibility is more effective, more product choices are provided, the available services are more extensive and affordable [3]. Providing and maintaining customer satisfaction to meet user's needs is the biggest challenge for e-commerce[4]. Indonesia has several well-known e-commerce online travel agents such as Traveloka and Tiket.com. Traveloka and Tiket.com occupy the top level as online travel agents in Indonesia which could meet customer's needs, this is proven by both of these online travel agents is the most downloaded application with more than 10 million smartphone users. Based on this data, there are internal and external behavioral factors that motivate users to use each of the applications. The purpose of this study is to examine the factors that influence users in using Traveloka and Tiket.com by adopting the UTAUT2 model. The UTAUT2 model can provide knowledge to companies in forming appropriate marketing strategies according to user behavior specifications [5]. Venkatesh et.al [6] stated that the behavior related to technology acceptance, several indicators influence such as performance expectancy, facilitating condition, hedonic motivation, effort expectancy, social influence, habit, and price value factors. These factors aim to improve the quality service and can attract users acceptance of the technology.

II. PREVIOUS RESEARCH

Before the UTAUT 2 and UTAUT, other models have been widely used in various studies in acceptance of information technology. UTAUT was formed from the development of eight acceptance theories. UTAUT had four constructs, there are effort expectancy, performance expectancy, social influence and facilitating conditions with four moderating variables were identified gender, experience, age and voluntariness of use[7]. Based on Venkatesh et.al [6], UTAUT model developed to be UTAUT2 focus on measuring actual user behavioral intentions by adding several factors and eliminating constructs on the moderating voluntariness of use variable in the previous theory. The UTAUT2 model has also been used in various studies. In previous studies, the UTAUT2 model analyzing customer acceptance of applications that adopt electronic payments[8] and online ticket reservations[7,8]. Users are influenced by factors in using Online Travel Agent in previous studies are performance expectancy, social influence, facilitating conditions, hedonic motivation, and habit in good categories while for effort expectancy in very good categories. The moderation effect in the study did not affect the independent and dependent variables[11].

III. THE PROPOSED METHOD

This study using the Unified Theory of Acceptance and Use of Technology 2 (UTAUT 2) model. The UTAUT2 is a development model of the UTAUT model. Figure 1 model of UTAUT2 were grown produce seven variables there are performance expectancy (PE), effort expectancy (EE) , social influence (SI), facilitating condition (FC), hedonic motivation (HM), price value (PV), habit (HB), perceived security (PS) that affect the behavior intention (BI) and use behavior (UB).

UTAUT 2 also has a moderating effect on gender, age, and experience[4].

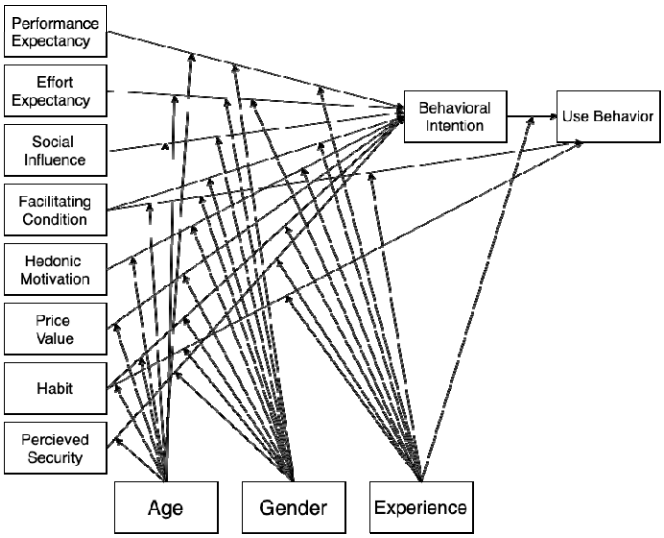

Figure 1 Model UTAUT2

The proposed method UTAUT2 model in this study is shown in Fig.1 modify with add perceived security as latent variables or independent variables that influence behavior intention. The degree of a person's belief that the technology used to transmit sensitive information such as customer data and financial transactions secured or protected from any potential threats referred to perceived security. Perceived security is an important factor in lifting the smartphone application context in terms of electronic payment[12]. Traveloka and Tiket.com as an Online Travel Agent have a transaction system that accesses the customer's data to process the transaction. User security will affect the acceptance of the online transaction [13]. These variables can be used to find the relationship a sense of security [14] against the behavior intention in using online transactions and accesses to personal data which will influence use behavior with other UTAUT2 variables. The method to be used in this research is the Structural Equation Modeling approach Partial Least Squares (PLS).

SEM is a modeling of structural equations that have a framework for statistical analysis multivariate procedures to integrate the factor analysis, structural model, and path analysis [15]. The analysis conducted on SEM is factor analysis, regression analysis, discriminant analysis, and correlation. SEM is commonly used in behavior analysis research [16]. Structural Equation Modeling Partial Least Squares (PLS-SEM) is an approach that can handle many independent variables among these variables [17], PLS is divided into two analytical models namely measurement model (outer model) and structural model (inner model). Factors that influence the use of Traveloka and Tiket.com Travel Agent Online to users will be analyzed in this study using the UTAUT 2 model developed by Venkatesh et al. (2012). Based on the existing latent variables and additional variables, the hypothesis that can be tested in this study as follows:

H1: Effect of Performance Expectancy on behavior intention
H2: Effect of Effort Expectancy on behavior intention
H3: Effect of Social Influence on behavior intention
H4: Effect of Facilitating Conditions on behavior intention
H5: Effect of Facilitating Condition on use behavior
H6: Effect of Hedonic Motivation on behavior intention
H7: Effect of Price Value on behavior intention
H8: Effect of Habit on behavior intention
H9: Effect of Habit on use behavior
H10: Effect of Perceived Security on behavior intention
H11: Effect of behavior intention on use behavior

IV. Result and Analysis

This testing stage in the measurement model and structural model testing will be carried out using Smart-PLS. This survey was distributed for Indonesian customer which using both of online travel agent in the past year. Data were obtained from 165 respondents by filling out the study questionnaire with . The questionnaire was collected from the 165 samples with likert scale from 1 to 5 to calculate the response from respondents. In the first stage, we do the validity and reliability testing of the questionnaires. Second stage, the relationship between the dependent and independent variable is tested, and the last stage is obtain the new model for hypothesis testing.

The measurement model testing is done by conducting a discriminant validity test, according to Fornell and Lacker (1981) [18] it can be seen from the AVE square root value in each of these latent variables. Latent variables meet discriminant validity if the value of the square root of AVE is greater than the value of the latent variable correlation compared to other latent variable values. AVE square root value of the latent variable social influence is 0.820, which greater than the correlation value of the latent variable Price Value, Performance Expectancy, Perceived Security, Hedonic Motivation , Habit, Facilitating Condition, Effort Expectancy, and Behavior Intention in Traveloka. Variable Price Value, Performance Expectancy, Perceived Security, Hedonic Motivation , Habit, Facilitating Condition, Effort Expectancy, and Behavior Intention Tiket.com have squared value AVE is greater than the other latent variable correlation value as well as on other factors. All latent variables in this study met the discriminant validity requirements.

Validity testing of the loading factor is obtained based on the value of each construct that has been processed in the Smart-PLS. A valid construct has a loading factor value > 0.7 [19]. In Traveloka online travel agent has an invalid construct in facilitating condition variable, statement Facilitating Condition3 has a loading factor value 0.676 which is less than 0.7 and the Facilitating Condition4 statement value is 0.672, so the statement is deleted. The variable and construct being tested again and produces a valid loading factor value. Meanwhile from the result of the validity test on Tiket.com, the factor loading value greater than 0.7 can be obtained, all variables and constructs on Tiket.com are valid. The validity of each variable on Traveloka and Tiket.com will be tested. This testing will produce a valid variable if the value of AVE

> 0.5 [20]. The result is all of the variables in Traveloka and Tiket.com have a valid AVE value which is greater than 0.5. The next stage is testing the reliability value to determine the accuracy of the variable. The latent variables are reliable if the Cronbach Alpha value greater than 0.7 [21]. Based on the result of reliability testing, we can conclude that all latent variables on Traveloka and Tiket.com was reliable.

The structural model is conducted for testing the coefficient of determination (R^2) and the path coefficient. According to Hair et al [22], if the R^2 score is 0,75 it shows a strong model, R^2 score 0.5 is moderate model, and the R^2 score 0.25 is a weak model. In Traveloka, the R^2 score of latent variables behavior intention is 0.688. This shows that eight latent variables which are used to influence the behavior intention is 68.8% and 31.2% influenced by other variables outside the model used in this research. Latent variable use behavior has R^2 score 0.288, it showed the latent variables facilitating condition, habit, and behavior intention effect by 28.8% on the use behavior, and 71.2% are influenced by other variables outside the model used in this research. Tiket.com score R^2 latent variables behavior intention is 0.721. This shows the other eight latent variables that are used to influence the behavior intention is 72.1% and 27.9% influenced by other variables outside the model used in this research. The latent variable use behavior has an R^2 score of 0.509, it shows 50.9% affects the facilitating condition, habit, and behavior intention on the use behavior and the score that influenced by the other variable outside model is 49.1%.

The significance level used in this research is 5%, it mean that the degree of confidence is 95%. The calculation two-tailed hypothesis testing with a 0.05 level of significance generate the critical value is about ± 1.96 [23]. Based on these result, if the t-statistic value is more than 1.96 and less than -1.96 that the hypothesis is accepted, and otherwise the hypothesis is rejected.

TABLE 1 COMPARISON TRAVELOKA AND TIKET.COM VARIABLES HYPOTHESIS TESTING

Relation between latent variable	Traveloka		Tiket.com	
	T-statistic	Note	T-statistic	Note
PE → BI	0.095	Rejected	2.197	Accepted
EE → BI	0.180	Rejected	1.436	Rejected
SI → BI	0.324	Rejected	1.428	Rejected
FC → BI	1.928	Rejected	0.651	Rejected
FC → UB	0.779	Rejected	2.548	Accepted
HM → BI	0.150	Rejected	1.171	Rejected
PV → BI	4.347	Accepted	0.451	Rejected
HB→ BI	3.644	Accepted	4.689	Accepted
HB→ UB	3.257	Accepted	3.892	Accepted
PS → BI	2.915	Accepted	0.324	Rejected
BI → UB	2.774	Accepted	3.627	Accepted

Table 1 shows the hypothesis result tested by the latent variable in the Traveloka application. performance expectancy, effort expectancy, social influence, facilitating condition, hedonic motivation variable has not affect on behavior intention and also facilitating condition on use behavior because it has a t-statistic value less than 1.96, it is mean that H1, H2, H3, H4, H5, and H6 not an accepted hypothesis. Effect of price value, habit, perceived security on behavior intention, also habit, and behavior intention on use behavior has a t-statistic value greater than 1.96. It is proven that these latent variables affect behavior intention, and habit, behavior intention effect on use behavior.

The Tiket.com result in Table 1 shows relation between latent variable effort expectancy, social influence, facilitating condition, hedonic motivation, price value, and perceived security has a t-statistic value less than 1.96, it means the relation latent variable not affect behavior intention or use behavior and H2, H3, H4, H6, H7, H10 not accepted hypothesis. Meanwhile the performance expectancy, facilitating condition to behavior intention, and habit have a t-statistic value greater than 1.96, so the variable latent affects behavior intention or use behavior, and the hypothesis is accepted. Hypothesis results obtained new models of SEM on Traveloka shown in fig.2

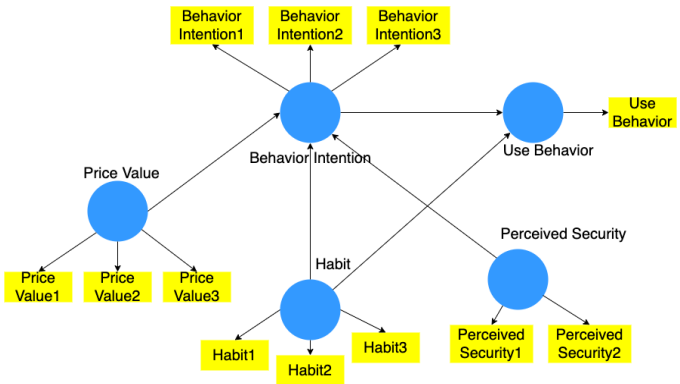

Figure 2 SEM models Traveloka

Fig.2 shows that the new SEM model from the results is the hypothesis conclusion in Traveloka application. The price value is divided into three questionnaires construct Price Value1, Price Value2, and Price Value3. Habit has Habit1,

Habit2, and Habit3 construct of the questionnaire. There was two questionnaire construct Perceived Security1 and Perceived Security2 in perceived security. Behavior Intention1, Behavior Intention2, and Behavior Intention3 is a questionnaire construct of behavior intention. Use behavior has Use Behavior1 as questionnaire construct. This new path of the SEM model is from price value, habit, perceived security variable to behavior intention, and habit variable to use behavior. Hypothesis result of new SEM models Tiket.com shown in fig.3

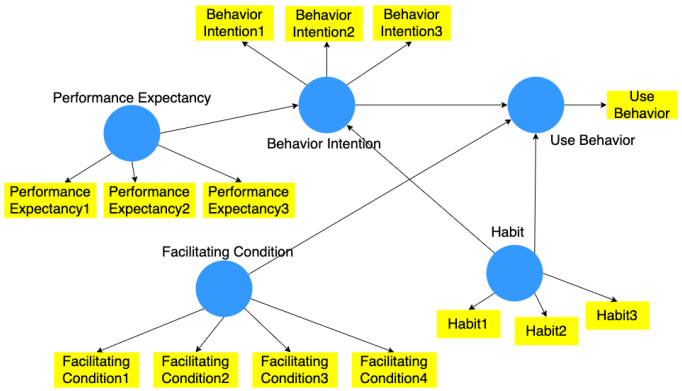

Figure 3 SEM models Tiket.com

The new SEM model from the results above of the hypothesis conclusion in Tiket.com application is performance expectancy affect the behavior intention have three questionnaire construct Performance Expectancy1, Performance Expectancy2, and Performance Expectancy3. Facilitating condition have questionnaire construct Facilitating Condition1, Facilitating Condition2, Facilitating Condition3, and Facilitating Condition4 that affect the use behavior. The questionnaire construct of habit is Habit1, Habit2, and Habit3 which habit is affecting behavior intention and use behavior. The new path of the SEM model is from performance expectancy, habit, facilitating condition variable to behavior intention, and habit variable to use behavior.

After getting the new models of SEM, the next is moderation testing of each online travel agent. Moderating effects as measured by Venkatesh et.al [9] such as age, gender, and experience. The age group divided into three groups based on the generation that is generation X, generation Y, and generation Z. This study only processed data in generation Y and generation Z. Generation X could not be processed because generation X only had 18 respondents, Louis [24] said that to using a statistical data analysis study, the minimum sample size is 30 samples. While generation X does not qualify, so this sample cannot be used to further research. Moderating effects experience divided into two times, there is the use of online travel agent for less than six months, and the use of online travel agent for more than six months. The moderation effect will be eligible to influence latent and dependent variables determined from the p-value score, if p-value less than 0.05 or p-value greater than 0.95 [25]. Table 3 shows the moderating effect value on the Traveloka application

TABLE 2 RESULT OF MODERATING EFFECT VALUE TRAVELOKA

Variables	Traveloka		
	p-value of Gender	p-value Age	p-value Experience
HB → BI	0.179	0.344	0.571
HB → UB	0.214	0.073	0.378
PS → BI	0.471	0.649	0.575
PV → BI	0.347	0.140	0.068

The result of moderation effect testing on the Traveloka is no one qualifies the p-value less than 0.05 or p-value greater than 0.95, so the conclusion is moderating effect of gender, age, and experience does not affect latent variables on behavior intention and use behavior.

TABLE 3 RESULT OF MODERATING EFFECT VALUE TIKET.COM

Variables	Tiket.com		
	p-value of Gender	p-value Age	p-value Experience
HB → BI	0.401	0.256	0.057
HB → UB	0.049	-	0.226
PE → BI	0.905	0.738	-
FC → UB	-	0.963	0.696

Table 3 shows the moderating effect value on the Tiket.com application. The p-value of gender moderated habit to use behavior is 0.049. it qualifies a p-value less than 0.05 or p-value greater than 0.9 which meaning that habit has an influence on behavior intention and this is influenced by the moderating effect of gender.

The Traveloka hypothesis conclusion after moderation effect testing is price value, perceived security, habit to behavior intention, habit to use behavior are accepted hypothesis which means this variable influences behavior intention and also influences use behavior. Furthermore, the moderating effect on price value, habit, perceived security that affects the behavior intention has a p-value less than 0.05 or p-value greater than 0.95, so the moderating effect not affect the latent variable in Traveloka. The hypothesis accepted on Tiket.com application are performance expectancy, habit to behavior intention and facilitating condition, habit, behavior intention to use behavior. The moderating effect gender only influencing the habit to use behavior that has value less than 0.05 and otherwise is rejected.

The results of statistical analysis that have been carried out in the Traveloka application are performance expectancy variables with a t-statistic value of 0.09 which is less than 1.96, which means that H1 is rejected. This shows that the user's behavior intention is not influenced by the performance expectancy variable. Tiket.com performance expectancy variable has a value greater than 1.96, according to previous research that performance expectancy meets the user intention in using technology [26] and Tiket.com meets the user's needs also with the company's achievement [27]. This result is due to the application Traveloka not optimal in processing travel reservations online quickly.

According to the results obtained hypothesis the effect of facilitating condition influence on use behavior in Traveloka has a t-statistic value of 0.779, this value is smaller than 1.96 so the H4 is rejected. This indicates that facilitating condition does not affect the use behavior of Traveloka users. In Tiket.com applications, variable facilitating condition t-statistic value is 2.548. Statistical testing results that have been obtained on average respondents already have the facility devices, and know to use the application Tiket.com compared Traveloka. In addition to the device facilitating condition, the average respondent stated that the assistance of a consumer service based Facilitating Condition4. If the user has the necessary resources and support, users will have the intention to use the application [28]. Thus, facilitating condition will influence the use behavior on Tiket.com.

Based on the results obtained hypothesis the effect of habit on behavior intention Traveloka t-statistic value is 3.644 which is greater than 1.96, so the H8 is accepted. This indicates the effect of habit on the behavior intention of users. In the Tiket.com application, the habit variable has a t-statistic value of 4,869 which is greater than 1.96, so the H8 on Tiket.com is accepted. The results can be interpreted that the more frequent users make reservations online travel agents, the higher user intent in using the application will likely continue to use the service[29]. This is proven that the application meets the needs of users in making travel reservations online and encourage users to become accustomed to using applications Traveloka and Tiket.com meet travel interests, thereby affecting of habit on use behavior. The moderating effects result on habit is the gender influences the habit on use behavior Tiket.com. This shows that the trust owned by the user in using Ticket.com.

Traveloka application price value variable t-statistic value is 4.347 which is greater than 1.96 so the H7 is Accepted. This suggests that the price value influence on behavior intention Traveloka users. Tiket.com has a value of t-statistic has a value of 0.451 which is smaller than 1.96, so the H7 on Tiket.com rejected. These results showed that the application Traveloka offers a cheaper price compared to Tiket.com. Traveloka also cooperates with many airlines, brands, and merchants to offer discounts and coupon promotions to meet the needs of users in interest travel reservations online. The benefits of using the Traveloka application are considered greater than the monetary cost and the price value so that it has a positive impact on the behavior intention user as in the previous study Venkatesh et. al [6]. While Tiket.com not relevant to previous research Venkatesh et.al [6] because it has not provided a greater benefit than the monetary cost of the application.

According to the results obtained hypothesis effect of perceived security on behavior intention in Traveloka t-statistic value is 2.915, this value is greater than 1.96, so the H10 is accepted and relevant with this research [30]. It showed that behavior intention perceived security against Traveloka users. The perceived security variable in the Tiket.com application has a t-statistic value of 0.5324 smaller than 1.96, so the H10 on Tiket.com rejected. Tiket.com needs to improve the definite user's privacy which had an impact on trust and use behavior intention. Based on these results, showed that users trust the guarantees confidentiality and security in Traveloka because it very secured. The security system in Traveloka is using an international standard, it was implemented to protect the confidentiality of data and transactions. Users will interest in doing a transaction in the application when their confidence about the system is gained. Also the technology itself has a security guarantee in accessing sensitive information such as personal data and financial transactions [12]. It is very encouraging perceived security for the behavior intention users Traveloka than Tiket.com.

The results are obtained hypothesis effect of behavior intention on use behavior in Traveloka has a t-statistic value 2.774, this value is greater than 1.96, so the H11 is accepted. This indicates that the behavior intention against the user behavior on Traveloka. While in Tiket.com, the behavior intention variable has a value of 3.627 t-statistic greater than 1.96, so the H11 on Tiket.com accepted. This suggests that behavior intention effect on use behavior users. These results are relevant to the outcome of Venkatesh et.al [6], that the behavior intention has a positive and significant impact on the use behavior based on the construct and the latent variables in user.

V. Conclusion

Some factors could affect the user in using online travel agents such as for Traveloka there are perceived security, price value, and Tiket.com they have facilitating condition, performance expectancy, and habit factors. Habit factors are generally affecting both Traveloka and Tiket.com and could improve user's intention to make a reservation. Also there are several factors such as effort expectancy, social influence hedonic, and motivation. These factors can't affect user's intention to use both online travel agents.

The results of this study are expected to provide recommendations to Traveloka management, so they can focus on perceived security, price value, and habit factors more to influence user's behavior intention in using travel reservations online. Tiket.com management can be focus on facilitating condition factors, performance expectancy, and habit factors, and also it can attempt to increase the intentions of users in using travel reservations online on the application.

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