



WHAT DETERMINES TOURISTS TO USE TRAVEL APPS? A SEM ANALYSIS BASED ON UTAUT-2 FRAMEWORK

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Abstract

Using travel apps has become a common activity for tourists today. Increased tourism activities and the presence of an investment in these fields is very important to be ensured by marketers and digital business owner, especially those engaged in tourism. This study aims to explain what factors based on the UTAUT-2 framework influence tourists to use travel apps. Data collected by distributing questionnaires to 145 domestic tourists in Bali. This study used a non-probability sampling method and Structural Equation Modeling (SEM) to analyze the data. The results shown significant factors to predict behavioral intention are performance expectancy, effort expectancy, social influence, hedonic motivation, and price saving while significant factors to predict use behavior are habit and behavioral intention. Therefore, this study could be implied theoretically to enrich the empirical evidence mainly on the UTAUT-2 framework. The practical implication of this study is to be able to provide an overview of the digital business owner of travel apps to identify and decide what feature they must optimize to their end-users.

Keywords: Behavioral Intention, Use Behavior, Travel Apps

INTRODUCTION

Using travel apps has become a common activity for tourists today. According to Karanasios et al. (2012) tourists are now accustomed to using smart technology to support their activities. Google and Temasek (2018) in their report entitled "e-Conomy SEA 2018", classify online travel into 3 segments namely online flights, online hotels, and online vacation rentals. The report explains 57% of total tourism service bookings all will go online in 2025 when in 2018 only 41%. Indonesia is the largest market for online travel in Southeast Asia. The growth was 20% from 2015 to 2018 and estimated will have a transaction valued at USD 25 billion in 2025. This growth is supported by investments made by digital businesses, also the Indonesian government supported by building various infrastructures. This is new hope for all tourist destinations in Indonesia. This study aims to explain what factors based on the UTAUT-2 framework influence tourists to use travel apps.

LITERATURE REVIEW

Unified Theory of Acceptance and Use of Technology (UTAUT-2) is a further development of the UTAUT framework developed by Venkantesh et al. in 2003. The UTAUT framework is the most suitable model to describe the consumer acceptance and behavior of using technology as a service.

Performance Expectancy

Venkantesh et al. (2003) state performance expectancy is defined as the degree to which an individual believes that using the system will help to attain gains in job performance. Gupta, et al. (2018) on their research found there was a significant positive relationship between performance expectancy and behavioral intention. Further, existing studies confirm a significant positive relationship also between performance expectancy and behavioral intentions (Alalwan et al., 2017; Alshehri et al., 2012; Baptista and Oliveira., 2015; Slade et al., 2015). Venkantesh et al. (2003) found age and gender played an important role and found age and gender become a moderator on the relationship between performance expectancy and behavioral intentions. Thus,

H1 : Performance expectancy has a significant positive effect on behavioral intention

H1a : Age moderates the relationship between performance expectancy and behavioral intentions.

H1b : Gender moderates the relationship between performance expectancy and behavioral intentions.

Effort Expectancy

Escobar and Trujillo (2014) state effort expectancy as the degree of ease/effort associated with consumers' use of the technology. Tan and Lau (2016) found effort expectancy has a significant positive effect on behavioral intention, also other existing studies confirm a significant positive relationship in between effort expectancy and behavioral intention in e-government context (Alshehri et al., 2012) and rural tourism (Martin and Herero, 2012). However, Gupta et al. (2018) found effort expectancy has no significant effect on behavioral intention in tourism context in India, in messenger app context in Bandung city (Marhaeni, 2014) also in mobile payment and banking context (Slade et al., 2015; Baptista and Oliveira, 2015). Venkantesh et al. (2003) applied to age and gender as a moderator on the relationship between effort expectancy and behavioral intentions and shown age and gender can moderate this relationship. Thus,

H2 : Effort expectancy has a significant positive effect on behavioral intention

H2a : Age moderates the relationship between effort expectancy and behavioral intentions.

H2b : Gender moderates the relationship between effort expectancy and behavioral intentions.

Social Influence

Social influence is defined as the degree to which an individual perceives that important others believe he or she should use the new system (Venkatesh, et al., 2012). Tan and Lau (2016) researched on the m-banking context and found there was a significant positive relationship between social influence and behavioral intention. Further, existing studies confirm a significant positive relationship (Marhaeni, 2014; Gupta et al. 2018; and Slade et al., 2015). Different results found by Alshehri et al. (2012) that state social influence does not have any significant effect on behavioral intention. This result followed also by researcher Baptista and Oliveira (2015) and Martin and Herero (2012). Venkantesh et al. (2003) found age and gender become a moderator on this relationship. Thus,

H3 : Social Influence has a significant positive effect on behavioral intention

H3a : Age moderates the relationship between social influence and behavioral intentions.

H3b : Gender moderates the relationship between social influence and behavioral intentions.

Facilitating Condition

Facilitating conditions are defined as the degree to which an individual believes that an organizational and technical infrastructure exists to support the use of the system (Venkantesh et al., 2003). Madan and Yadav (2016) on their research found facilitating condition has a significant positive effect on behavioral intentions, also other researcher states there was a

significant positive relationship in between facilitating condition and behavioral intentions (Venkatesh et al., 2012; Alshehri et al., 2012; Slade et al., 2015). However, other researchers Gupta *et al.* (2018); Baptista and Oliveira (2015); Martin and Herero (2012) found there was no significant effect on the relationship between facilitating condition and behavioral intentions. Venkatesh *et al.* (2012) shown that age and gender can become a moderator on this relationship between facilitating condition and behavioral intention also facilitating condition and use behavior. Thus,

H4 : Facilitating condition has a significant positive effect on behavioral intention

H4a : Age moderates the relationship between facilitating condition and behavioral intentions.

H4b : Gender moderates the relationship between facilitating condition and behavioral intentions.

Further, existing studies by Madan and Yadav, (2016); Venkatesh *et al.* (2012); and Baptista and Oliveira (2015) states facilitating condition also has a significant positive effect on use behavior.

H5 : Facilitating condition has a significant positive effect on use behavior

H5a : Age moderates the relationship between facilitating condition and use behavior.

Hedonic Motivation

Venkatesh *et al.*, (2012) state hedonic motivation is defined as the fun or pleasure derived from using technology. Alalwan *et al.* (2017) found hedonic motivation to become a predictor of behavioral intention. Baptista and Oliveira (2015), and Slade *et al.* (2015) show hedonic motivation has a significant positive effect on behavioral intention. Gupta *et al.* (2018) found something interesting that shows there was no significant effect between hedonic motivation and behavioral intention. Age and gender applied to this relationship and found there were become a moderator (Venkatesh et al., 2012). Thus,

H6 : Hedonic motivation has a significant positive effect on behavioral intention

H6a : Age moderates the relationship between hedonic motivation and behavioral intentions.

H6b : Gender moderates the relationship between hedonic motivation and behavioral intentions.

Price Saving

Venkatesh et al. (2012) state the difference between UTAUT and UTAUT-2 is on price saving variable. When Venkatesh et al. (2012) developed UTAUT-2, found price saving has a significant positive effect on behavioral intention. Further, existing studies confirm a significant positive relationship also between price saving and behavioral intentions (Escobar and Trujillo,

2014; Marhaeni, 2014; and Gupta *et al.*, 2018). But, Baptista and Oliveira (2015) found there was no significant effect between price saving and behavioral intention. Age and gender applied for moderation on this relationship and found they became a moderator (Venkatesh *et al.*, 2012).

Thus,

H7 : Price saving has a significant positive effect on behavioral intention

H7a : Age moderates the relationship between price saving and behavioral intentions.

H7b : Gender moderate the relationship between price saving and behavioral intentions.

Habit

Habit defines as a degree in which individuals intend to do the same thing become automatic in response to certain situations (Limayem *et al.*, 2007). Escobar and Trujilo, (2014) state habit have a significant positive effect on behavioral intention. Also, in the internet consumer context by Venkatesh *et al.* (2012); and Baptista and Oliveira (2015) in a mobile banking context. However, Venkatesh *et al.* (2012) shown that age and gender can become a moderator on this relationship between habit and behavioral intention also habit and use behavior.

Thus,

H8 : Habit has a significant positive effect on behavioral intention

H8a : Age moderates the relationship between habit and behavioral intentions.

H8b : Gender moderates the relationship between habit and behavioral intentions.

Further, existing studies by Escobar dan Trujilo, (2014); Marhaeni (2014); Gupta *et al.* (2018); Baptista and Oliveira (2015) states facilitating condition also has a significant positive effect on use behavior.

H9 : Habit has a significant positive effect on behavioral intention

H9a : Age moderates the relationship between habit and behavioral intentions.

H9b : Gender moderates the relationship between habit and behavioral intentions.

Behavioural Intention

Marhaeni (2014) states behavioral Intention as a degree of an individual in which will use a system and technology in the future. There were so many researchers found that behavioral intention has a significant positive effect on use behavior as follows Baptista and Oliveira (2015); Gupta *et al.* (2018); Escobar and Trujilo (2014); also Marhaeni (2014). Thus the hypothesis will be,

H10 : Behavioral intention has a significant positive effect on use behavior

Use Behaviour

Use behavior can be measured by how frequently individuals use a system (Marhaeni, 2014). As a study in internet consumer context by Venkatesh *et al.* (2012), shown use behavior become the last variable that measured on UTAUT-2 framework.

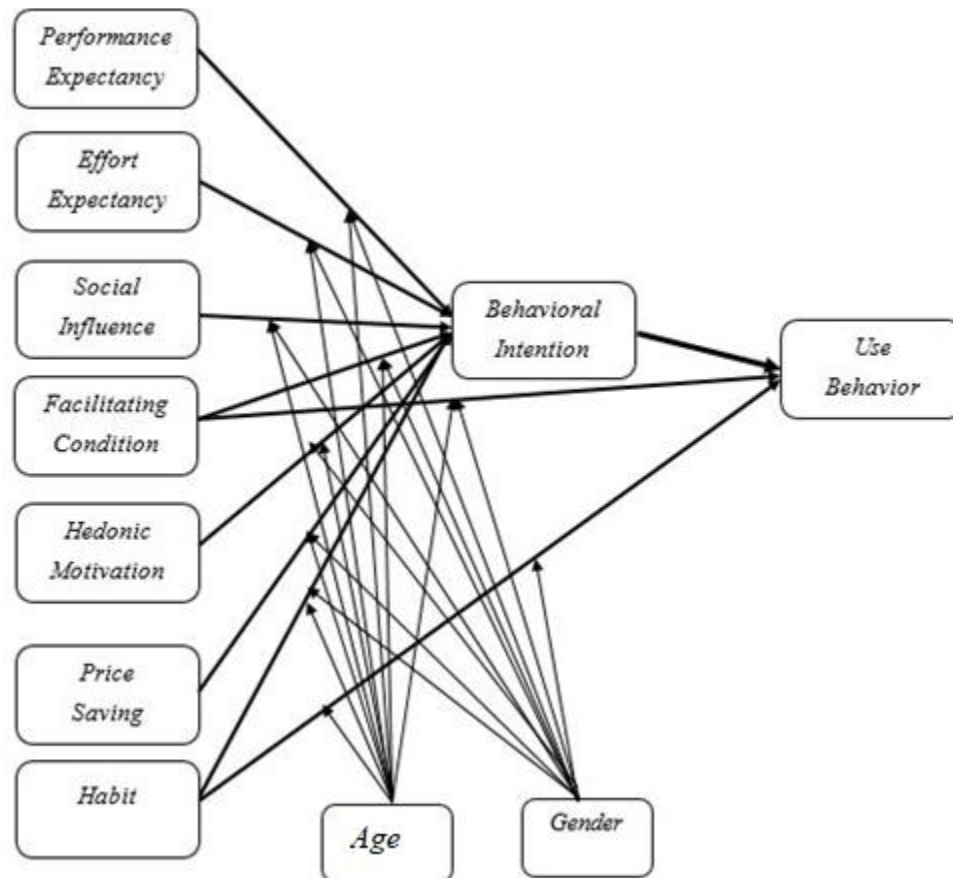


Figure 1. Conceptual Framework

RESEARCH METHOD

Rahyuda (2017: 38) explains research design is a procedural plan that guides researchers to answer questions in a valid, objective, accurate, and economical manner. This research used quantitative data types and is in the form of associative causality study. Based on the UTAUT-2 framework, the variables are performance expectancy, effort expectancy, social influence, facilitating condition, hedonic motivation, price saving, habit, behavioral intention, use behavior, age, and gender.

The sampling method is non-probability sampling which is a purposive sampling method. Data collected by distributing questionnaires to 145 domestic tourists in Bali. Questionnaires distributed to Denpasar as the first group for 30 samples, Badung Regency as the second group

for 51 samples, Gianyar Regency as the third group for 28 samples, and the fourth group is combined regency as follow, Tabanan, Jembrana, Buleleng, Karangasem, Klungkung and Bangli for 36 samples.

The questionnaire was adapted from Venkatesh *et al.* (2012) which as the developer of the UTAUT-2 framework. The result was measured using a Likert scale of 1 to 5 points. Inferential statistical data analysis techniques applied with variant-based SEM or SEM-PLS by software SmartPLS 3.0.

ANALYSIS AND RESULTS

Table 1. Characteristics of Respondents

Characteristic	Category	Numbers (people)	Percentage
Gender	Male	75	51
	Female	70	49
Total	145	100	100
Age	15-24	69	47
	24-60	76	53
Total	145	100	100
TravelApps	Go-Jek	13	9.0
	Grab	11	7.6
	TripAdvisor	16	11.0
	Traveloka	19	13.1
	Tiket.com	18	12.4
	PegiPegi	16	11.0
	Kamartamu.com	20	13.8
	Balibible.com	17	11.7
	Google Maps	15	10.3
Total	145	100	100
Location	Denpasar	30	20.7
	Badung	51	35.2
	Gianyar	28	19.3
	Jembrana, Tabanan, Klungkung, Bangli, Buleleng, and Karangasem	36	24.8
	Total	145	100

Table 1 shows the age range from 24-60 is 53 percent and 15-24 as much as 47 percent. Male is as much as 51 percent, while females as much as 49 percent. Also, from the use of travel

apps, the most is Kamartamu.com as much as 13.8 percent, then Traveloka as much as 13.1 percent, Tiket.com as much as 12.4 percent, BaliBible.com as much as 11.7 percent, TripAdvisor as much as 11 percent, PegiPegi as much as 11 percent, Google Maps as much as 10.3 percent, Go-Jek as much as 9 percent, and Grab as much as 7.6 percent. Based on the location, Badung Regency as much as 35.2 percent, Denpasar as much as 20.7 percent, Gianyar Regency as much as 19.3 percent, and others as much as 24.8 percent.

Table 2. Instrument Validity Test

Variable	Indicators	Pearson Correlation	Information
Performance Expectancy	X1.1	0.767	Valid
	X1.2	0.728	Valid
	X1.3	0.755	Valid
Effort Expectancy	X2.1	0.651	Valid
	X2.2	0,618	Valid
	X2.3	0.800	Valid
	X2.4	0.756	Valid
Social Influence	X3.1	0.810	Valid
	X3.2	0.718	Valid
	X3.3	0.698	Valid
Facilitating Condition	X4.1	0.788	Valid
	X4.2	0.736	Valid
	X4.3	0.781	Valid
	X4.4	0.795	Valid
Hedonic Motivation	X5.1	0.805	Valid
	X5.2	0.810	Valid
	X5.3	0.811	Valid
Price Saving	X6.1	0.780	Valid
	X6.2	0.813	Valid
	X6.3	0.773	Valid
Habit	X7.1	0.851	Valid
	X7.2	0.828	Valid
	X7.3	0.836	Valid
Behavioral Intention	X8.1	0.772	Valid
	X8.2	0.802	Valid
	X8.3	0.778	Valid
Use Behavior	X9.1	0.759	Valid
	X9.2	0.705	Valid
	X9.3	0.690	Valid

All the indicators shown in Table 2 already meet the requirements of validity which the correlation coefficient is more than 0.3, therefore, all the indicators are valid.

Table 3. Instrument Reliability Test

Variable	Cronbach's Alpha	Information
Performance Expectancy	0.611	Reliable
Effort Expectancy	0.662	Reliable
Social Influence	0.818	Reliable
Facilitating Condition	0.792	Reliable
Hedonic Motivation	0.735	Reliable
Price Saving	0.695	Reliable
Habit	0.789	Reliable
Behavioral Intention	0.685	Reliable
Use Behavior	0.780	Reliable

The entire items on those variables seen in Table 3 have been tested to meet the reliability requirements, the Alpha Cronbach coefficient of all the items has exceeded 0.6, therefore it could be stated that all of them are reliable.

Further, convergent validity also can be seen from the outer loading. The outer loading value must above the 0,50. Table 4 shows all outer loading already has a value greater than 0.5 so this measurement could be stated that all of the indicators are valid.

Table 4. Convergent Validity Test

Variable	Indicators	Outer Loading	Information
Performance Expectancy	X1.1	0.725	Valid
	X1.2	0.743	Valid
	X1.3	0.776	Valid
Effort Expectancy	X2.1	0.650	Valid
	X2.2	0.591	Valid
	X2.3	0.834	Valid
	X2.4	0.745	Valid
Social Influence	X3.1	0.780	Valid
	X3.2	0.890	Valid
	X3.3	0.881	Valid
Facilitating Condition	X4.1	0.605	Valid
	X4.2	0.507	Valid
	X4.3	0.791	Valid
	X4.4	0.923	Valid

Hedonic Motivation	X5.1	0.945	Valid	Table 4...
	X5.2	0.693	Valid	
	X5.3	0.684	Valid	
Price Saving	X6.1	0.891	Valid	
	X6.2	0.822	Valid	
	X6.3	0.541	Valid	
Habit	X7.1	0.761	Valid	
	X7.2	0.808	Valid	
	X7.3	0.906	Valid	
Behavioral Intention	X8.1	0.760	Valid	
	X8.2	0.810	Valid	
	X8.3	0.782	Valid	
Use Behavior	X9.1	0.841	Valid	
	X9.2	0.825	Valid	

Table 5 shows that the square root value of AVE is greater than the correlation coefficients of each construct. Thus, it can be concluded that the data has good discriminant validity.

Table 5. Discriminant Validity Test

Variable	AVE	Information
Performance Expectancy	0.615	Reliable
Effort Expectancy	0.506	Reliable
Social Influence	0.525	Reliable
Facilitating Condition	0.685	Reliable
Hedonic Motivation	0.614	Reliable
Price Value	0.560	Reliable
Habit	0.587	Reliable
Behavioral Intention	0.726	Reliable
Use Behavior	0.694	Reliable

Ensuring that there are no problems with measurement, the final step in evaluating the outer model is to test the unidimensionality of the model. The composite reliability tests with the cut-off point value are 0.7 as shown in Table 6.

Table 6. Composite Reliability Test

Variable	Composite Reliability	Information
Performance Expectancy	0.827	Reliable
Effort Expectancy	0.801	Reliable

Social Influence	0.808	Reliable	Table 6...
Facilitating Condition	0.866	Reliable	
Hedonic Motivation	0.823	Reliable	
Price Value	0.792	Reliable	
Habit	0.804	Reliable	
Behavioral Intention	0.888	Reliable	
Use Behavior	0.872	Reliable	

Table 6 shows that the composite reliability coefficient of all variables are above the criterion limit of 0.7 so that there are no composite reliability problems found. Inner Model Evaluation aims to determine the goodness of fit model with the R-Square method.

Table 7. R² of Endogenous Variables

Endogenous Variables	R ²
Behavioral Intention	0,270
Use Behavior	0,081

$$Q2 = 1 - (1-R12) (1-R22)$$

$$Q2 = 1 - (1-0,270) (1-0,081)$$

$$Q2 = 1 - (0,730) (0,919)$$

$$Q2 = 0,329$$

The result above shows the value of the predictive relevance of 0.329 is greater than 0 so it can be interpreted 32.90 percent of variations in variables can be explained in this model. The calculations of R2 and Q2 can be continued with the hypothesis testing.

Table 8. Hypothesis Test

Information	Original Sample (O)	Sample Mean	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Behavioral Intention -> Use Behavior	0.170	0.178	0.081	2.099	0.036
Effort Expectancy -> Behavioral Intention	0.222	0.231	0.086	2.593	0.010
Facilitating Condition -> Behavioral Intention	0.120	0.095	0.118	1.013	0.311
Facilitating Condition -> Use Behavioral	0.116	0.091	0.120	0.972	0.331
Habit -> Behavioral Intention	0.041	0.04	0.086	0.477	0.634
Habit -> Use Behavior	0.217	0.232	0.073	2.951	0.003

Hedonic Motivation ->Behavioral Intention	0.240	0.220	0.104	2.301	0.022
Performance Expectancy ->Behavioral Intention	0.199	0.202	0.077	2.575	0.010
Price Saving ->Behavioral Intention	0.160	0.174	0.066	2.419	0.016
Social Influence ->Behavioral Intention	0.220	0.215	0.071	3.084	0.002

Table 8...

Table 8 shows significant factors to predict behavioral intention are performance expectancy, effort expectancy, social influence, hedonic motivation, and price saving while significant factors to predict use behavior are habit and behavioral intention. In this study, two moderators are tested namely age and gender by comparing their t-value.

Table 9. Hypothesis Test with Age as Moderator

Endogenous Variables	Exogenous Variable	Overall results of the t-value	Young	Old
Behavioral Intention	Performance Expectancy	2,575	1,865	0,909
	Effort Expectancy	2,593	1,872	1,486
	Social Influence	3,084	1,071	3,553
	Hedonic Motivation	2,301	2,271	1,018
	Price Saving	2,419	2,419	1,217
Use Behavior	Habit	0,972	1,593	2,228

Table 10. Hypothesis Test with Gender as Moderator

Endogenous Variables	Exogenous Variable	Overall results of the t-value	Male	Female
Behavioral Intention	Performance Expectancy	2,575	1,982	1,185
	Effort Expectancy	2,593	2,190	2,104
	Social Influence	3,084	2,046	1,791
	Hedonic Motivation	2,301	1,293	2,436
	Price Saving	2,419	1,007	1,462
Use Behavior	Habit	2,951	1,537	1,126

Table 9 and Table 10 shows the t-value in each moderator to the overall results of the t-value shows a change so it can be concluded that age and gender can moderate the above hypothesis.

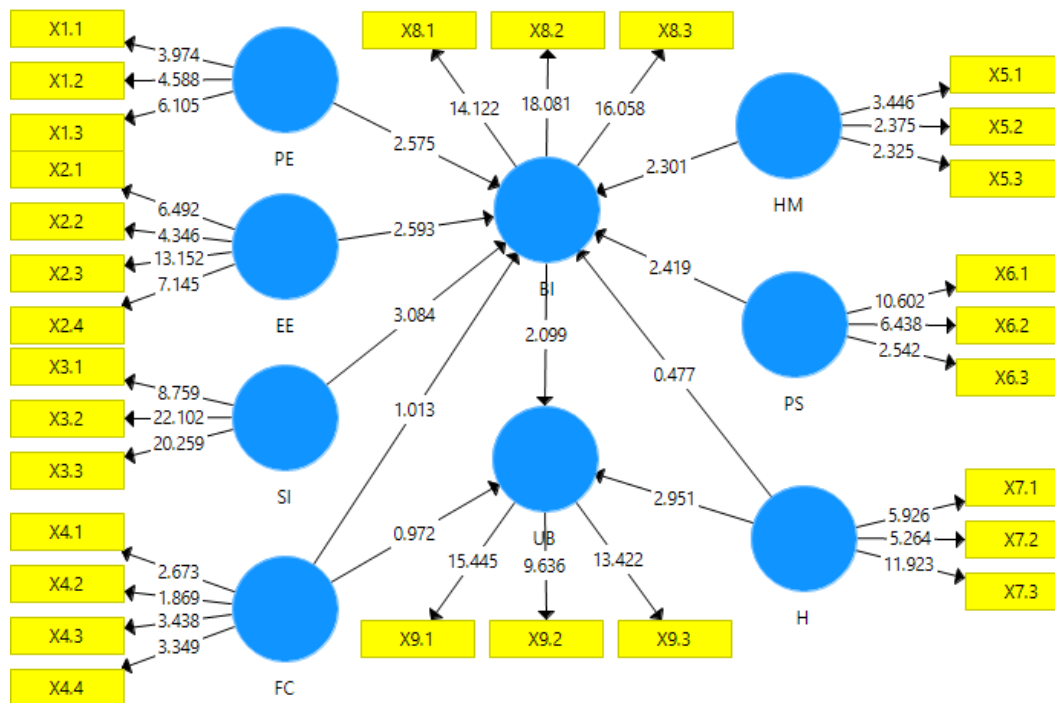


Figure 2. SEM-PLS Diagram

CONCLUSION AND SUGGESTIONS

Based on the empirical results, conclusions have been obtained as follows: First, performance expectancy has a significant positive effect on behavioral intention. Second, effort expectancy has a significant positive effect on behavioral intention. Third, social influence has a significant positive effect on behavioral intention. Fourth, facilitating conditions does not have a significant effect on behavioral intention also on use behavioral. Fifth, hedonic motivation has a significant positive effect on behavioral intention. Sixth, price saving has a significant positive effect on behavioral intention. Seventh, habit does not have a significant effect on behavioral intention but has a significant effect on use behavioral. Last, behavioral intention has a significant positive effect on use behavior.

Age and gender play an important role as moderator, which mean digital business owner, marketer, and software developer should know their application and technology that has been developed by them considering their users is just the only user and not willing to pay the service from the application. UTAUT-2 framework helps digital business owner, marketer, and software developer to know more their application and their technology so it can be accepted by users. In tourism context, software developer and marketer should consider for the app performance, ease in the use of app, pay attention to the social life of users, provide bundling or service package as hedonic motivation for the user, also give discount in term of price saving so, the user's intention to use travel apps in future will increase.

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