

UDC 336

**DETERMINANTS OF BEHAVIORAL INTENTIONS TOWARDS AUDITOR BEHAVIORS
IN USING AUDIT INFORMATION TECHNOLOGY: MODIFIED TECHNOLOGY
ACCEPTANCE MODEL AND THEORY OF PLANNED BEHAVIOR**

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ABSTRACT

This study was aimed to examine the determinants of behavioral intentions towards auditor behaviors using audit information technology. This study was a combination of *Technology Acceptance Model* (TAM) and *Theory of Planned Behavior* (TPB). This study used survey method in the data collection. The samples were auditors working on The Big Four Public Accounting Firms in Indonesia, which involved 107 respondents. Moreover, this study used *Partial Least Square* (PLS) to test the research data. The finding of the research is showed that perceived usefulness, perceived ease, attitudes, subjective norms; perceived behavioral control positively influenced the auditor behaviors in using audit information technology. In addition, behavioral intentions are the main determinant of behaviors and a fully mediating variable. Furthermore, behavioral intentions indicate that auditors have a positive evaluation result on auditor behaviors in using audit information technology. The implication of this study is that vendors or services providers of audit information technology and management must concern on perceived usefulness, perceived ease, attitudes, subjective norms, perceived behavioral control, behavioral intentions, and auditor behaviors. This study is expected that further studies are able to add other variables that may affect behavioral intentions towards actual behaviors and be conducted in different cultures and places.

KEY WORDS

Audit information technology, technology acceptance model, theory of planned behavior.

This study discusses the use of audit information technology (Audit IT) by auditors. Audit information technology is an application or software used during the audit process (Kusumadewi, Baridwan, & Hariadi, 2017). Audit information technology can assist auditors in storing files, reducing paper usage, reducing cost, and saving time (Stoel, Havelka, & Merhout, 2012; Kusumadewi, Baridwan & Hariadi, 2017). Auditors should have knowledge and competence in using information technology (International Federation of Accountants/IFAC, 2006). The existence of ASEAN Economic Community (AEC) and many foreign companies in Indonesia requires Indonesian auditors to comprehend information technology in order to be able to compete with foreign auditors. The pressure coming from the environment also becomes a demand for auditors to understand audit information technology (Havelka & Merhout, 2013; Kusumadewi, Baridwan, & Hariadi, 2017).

In recent years, there have been several surveys on the application of information technology in Indonesia. Sugiarto (2003) and Kusumadewi, Baridwan, & Hariadi (2017) mentioned that there were about 75% of information technology failed to be applied in Indonesia. Furthermore, they stated that the failure was caused by lack of implementation planning and bad technical factors. According to Kusumadewi, Baridwan, & Hariadi (2017), the failure of the use of an information technology is more related to the factors of human, process, and working organization. Additionally, Ajzen (1991), Lam, Cho & Qu (2007), Kim *et al.* (2016) revealed that the failure of information technology application is caused by the individual behavior rejecting the use of an information technology. If individuals accept the use of an information technology, it can be said that the information technology is successfully applied. On the contrary, if individuals reject the use of an information technology, it means that the information technology fails to be applied (Ajzen, 1991).

In other words, the success or failure of the use of an information technology can be known from individual behaviors.

Several studies (Taylor & Todd, 1995; Chen *et al.*, 2013; Kusumadewi, Baridwan & Hariadi, 2017) have stated that the main determinant of behaviors is intentions. Although intentions are the main determinant of individual behaviors, there are still other factors that may affect behavioral intentions, as expressed in the Technology Acceptance Model (TAM) and Theory of Planned Behavior (TPB). Moreover, several studies on TAM (Venkatesh & Davis, 2000; Pai & Huang, 2010) and TPB (Lam, Cho & Qu, 2007; Baker and White, 2010; Jafarkarimi *et al.*, 2016; Kusumadewi, Baridwan & Hariadi, 2017) have suggested further studies be conducted in different places and cultures.

The gap between this study and the previous ones is based on the suggestion or statement above. Hence, in the implementation of this study, the researcher combined TAM and TPB to influence individual behavioral intentions and performed it on different cultures. The different cultures are that this study used the samples of auditors working in The Big Four Public Accounting Firms in Indonesia. TAM's theory is related to the acceptance of an information technology by individuals, including auditors who use audit information technology. Based on the theory, auditors include the constructs of perceived usefulness and perceived ease to predict the determinants of behavioral intentions on auditor behaviors in using audit information technology. This study was a combination of the theory of TAM and TPB. The purpose of this study was to predict individual behaviors in relation to the use of information technology, especially audit information technology.

LITERATURE REVIEW

Audit information technology is a tool in the form of software or applications used during the process of audit. This information technology can integrate all information related to audits (Damasiotis *et al.*, 2015; Kusumadewi, Baridwan & Hariadi, 2017). The audit information technology can be in the form of applications such as *Powertech Compliance Assessment*, *Audit Command Language (ACL)* and *Picalo*, and other software assisting the audit process.

TAM is a theory of individual behavior that is influenced by behavioral intentions and related to the acceptance of a technology (Davis *et al.*, 1989). According to this theory, the behavioral intentions of individuals are influenced by the constructs of perceived usefulness and perceived ease of use (Davis *et al.*, 1989; Venkatesh & Davis, 2000; Pai & Huang, 2010).

Almost similarly, TPB is a theory of individual behaviors influenced by behavioral intentions (Ajzen, 1985). The behavioral intentions of individuals are influenced by three independent variables, namely attitudes, subjective norms, and perceived behavioral control (Ajzen, 1991; Kim *et al.*, 2016). TPB can be used to predict certain behaviors in various situations and forms of action (Beck & Ajzen, 1991; Kusumadewi, Baridwan & Hariadi, 2017). The basic assumption of TPB is that not all behaviors are under the full control of an individual so that a concept of perceived behavioral control needs to be added (Ajzen, 1991).

Perceived usefulness is defined as a perception that an information technology can be useful and beneficial to individuals (Davis *et al.*, 1989). Several studies (Davis *et al.*, 1989; Venkatesh & Davis, 2000; Pai & Huang, 2010) have shown that perceived ease of use has a positive effect on individual behavioral intentions. Based on the finding, the first hypothesis of this study is:

H₁: Perceived usefulness positively influences auditor behavioral intentions in using audit information technology.

Perceived ease of use is defined as the perception that information technology can facilitate natural individuals doing work (Davis *et al.*, 1989, Venkatesh & Davis, 2000). Several studies (Davis *et al.*, 1989; Venkatesh & Davis, 2000; Pai & Huang, 2010) have shown that perceived ease of use has a positive effect on individual behavioral intentions. Based on this finding, the second hypothesis of this study is:

H₂: Perceived ease of use positively influences auditor behavioral intentions in using audit information technology.

Attitudes are defined positive or negative feelings of individuals to perform behaviors (Davis *et al.*, 1989; Ajzen, 1991; Kim *et al.*, 2016; Cheung & To, 2016). Several studies (Davis *et al.*, 1989; Ajzen, 1991; Jafarkarimi *et al.*, 2016; Kim *et al.*, 2016; Kusumadewi, Baridwan, & Hariadi, 2017) have suggested that attitudes have a positive influence on individual behavioral intentions. Based on the finding of the previous studies, the third hypothesis of this study is:

H₃: Attitudes positively influence auditor behavioral intentions in using audit information technology.

Subjective norms are defined as social norms or normative pressures that may affect individual behavioral intentions (Ajzen, 1991; Lam, Cho, & Qu, 2007). Several studies (Ajzen, 1991; Jafarkarimi *et al.*, 2016; Cheung and To, 2016; Kusumadewi, Baridwan & Hariadi, 2017) have suggested that subjective norms have a positive effect on individual behavioral intentions. Based on this, the fourth hypothesis of this study is:

H₄: Subjective norms positively influence auditor behavioral intentions in using audit information technology.

Perceived behavioral control is defined as the ease or difficulty of performing behaviors (Ajzen, 1991; Kim *et al.*, 2016). Several studies (Armitage & Conner, 2001; Baker & White, 2010; Jafarkarimi *et al.*, 2016; Kusumadewi, Baridwan & Hariadi, 2017) have mentioned that perceived behavioral control has a positive effect on individual behavioral intentions. Based on this finding, the fifth hypothesis of this study is:

H₅: Perceived behavioral control positively influences auditor behavioral intentions in using audit information technology.

Intentions are the main indicator in the model of technology application (Davis *et al.*, 1989). Besides, Ajzen (1989) explained that intentions are a motivating factor that can affect behaviors. Several studies (Davis *et al.*, 1989; Yilmaz & Ozer, 2008; Venkatesh & Davis, 2000; Kim *et al.*, 2016; Kusumadewi, Baridwan & Hariadi, 2017) also have stated that behavioral intentions have a positive relationship to individual behaviors. Based on this finding, the sixth hypothesis of this study is formulated as follows:

H₆: Behavioral intentions positively influence auditor behaviors in using audit information technology.

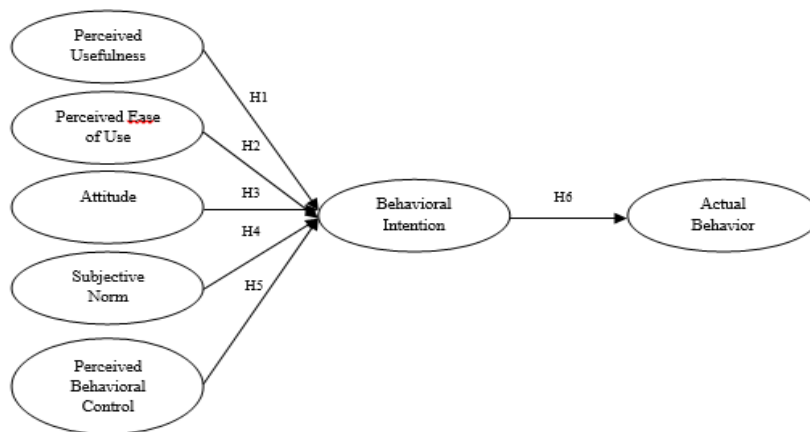


Figure 1 – Research Model

METHODS OF RESEARCH

The samples of this study consisted of 107 respondents, which were the auditors of The Big Four Public Accounting Firms in Indonesia. The data were collected using a survey method in the form of a questionnaire.

The data collection was conducted in May 2019. It used a purposive sampling technique – a selection of samples that facilitates researchers with certain criteria. Based on this, the researcher confirmed to one of the respondents of each firm a month before the questionnaire was distributed. The confirmation was made via phone, ensuring on the readiness of the representative respondent of each firm (The Big Four) to approve the implementation of this study and distribute the questionnaire to other selected respondents. Once approved, the researcher then distributed the questionnaire in the form of a soft file. The softcopy questionnaire was then given through a google link form.

The tool used to process the data was Smart PLS. The measurement of each variable was conducted using the previous studies-based instruments. The variables of Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) had four indicators presented by Venkatesh & Davis (2000). In another side, the variables of Attitude (AT) and Subjective Norm (SN) used four indicators submitted by the studies conducted by Taylor & Todd (1995) and Bhattacharjee (2000). Furthermore, the variable of Perceived Behavioral Control used four indicators of instruments presented by Taylor & Todd (1995) and Bhattacharjee (2000) while the variable of Behavioral Intention (BI) used four indicators of instruments obtained from the studies carried out by Venkatesh & Davis (2000). The last, the variable of Actual Behavior (AB) used three indicators of instruments submitted by Kim et al. (2016). Each of the variables was measured by likert scale ranged 1-7.

RESULTS OF STUDY

The characteristics of the samples used in this study were based on the position, gender, age, education, general work experience, and the experience of using Audit IT. In the term of position, junior auditors were more dominant than other positions, which amounted to 47%. Then, in the term of gender, the number of men was greater than women's, which amounted to 64% while, in the term of age, about 57% of the respondents were in the age range of 20-30 years old. Moreover, in the term of education, it was found that most of the samples only had bachelor's degree, which amounted to 74%. Furthermore, about 46% of the respondents acknowledged that they had more than 5-year work experience. The term of the experience in using Audit IT, most of the respondents had experienced the use of Audit IT more than 5 years, which amounted to 41%.

Table 1 – Sample Demographics

No.	Description	Frequency	Percentage	
1	Position	Manager	15	14%
		Supervisor	27	25%
		Senior Auditor	15	14%
		Junior Auditor	50	47%
2	Gender (Sex)	Male	69	64%
		Female	38	36%
3	Age	20-30 years old	61	57%
		31-40 years old	25	23%
		41-50 years old	21	20%
4	Education	S1	79	74%
		S2	22	21%
		S3	6	6%
5	Work Experience	<1 year	20	19%
		1< x ≤3 years	29	27%
		3< x ≤5 years	9	8%
		>5 years	49	46%
6	Experience of using Audit IT	<2 years	22	21%
		2< x ≤5 years	41	38%
		>5 years	44	41%

Table 2 – Confirmatory Factor Analysis Results for Measurement Model

Construct	Item	Original Sample	AVE	Communality	Cronbach Alpha	Composite Reliability
Perceived Usefulness (PU)	PU1	0.7946	0.7473	0.7473	0.8867	0.9218
	PU2	0.8566				
	PU3	0.9196				
	PU4	0.8821				
Perceived Ease of Use	PEOU1	0.9059	0.785	0.785	0.8654	0.9163
	PEOU2	0.8861				
	PEOU3	0.8655				
Attitude (AT)	AT1	0.7799	0.624	0.624	0.804	0.8685
	AT2	0.7009				
	AT3	0.8221				
	AT4	0.8489				
Subjective Norm (SN)	SN1	0.8057	0.6886	0.6886	0.8489	0.8982
	SN2	0.833				
	SN3	0.89				
	SN4	0.7871				
Perceived Behavior Control (PBC)	PBC1	0.8284	0.6918	0.6918	0.8509	0.8997
	PBC2	0.8424				
	PBC3	0.8678				
	PBC4	0.7862				
Behavior Intention (BI)	BI1	0.8601	0.6737	0.6737	0.8394	0.8916
	BI2	0.8715				
	BI3	0.8089				
	BI4	0.7355				
Actual Behavior (AB)	AB1	0.9099	0.7669	0.7669	0.8518	0.9077
	AB2	0.8039				
	AB3	0.9091				

Table 3 – Root Values of AVE dan Correlation of Latent Variables

Constructs	AVE Roots	1	2	3	4	5	6
1 Perceived Usefulness	0.864465	1	0	0	0	0	0
2 Perceived Ease of Use	0.886002	0.5181	1	0	0	0	0
3 Attitude	0.789937	0.3204	0.5662	1	0	0	0
4 Subjective Norm	0.829819	0.3173	0.4958	0.8641	1	0	0
5 Perceived Behavioral Control	0.831745	0.3082	0.4865	0.8151	0.9644	1	0
6 Behavior Intention	0.820792	0.3539	0.4627	0.5806	0.6198	0.6056	1
7 Actual Behavior	0.875728	0.3496	0.5357	0.4511	0.4485	0.433	0.4993

Source: SmartPLS analysis.

Based on Table 2, it can be seen that the loading factor values of all constructs were more than 0.7 while the values of AVE and Communality were more than 0.5. It indicates that the convergent validity supports all the latent variables.

Furthermore, the values of Cronbach Alpha were more than 0.6 and the values of composite reliability were more than 0.7. It showed that the reliability test supported all the constructs. Besides, the discriminant validity was supported for all constructs. It can be seen from Table 3 showing that the AVE root values were more than the correlation of latent variables and the values of cross loading were more than 0.7.

The hypothesis were accepted by a condition that the original value of samples or beta (β) was more than 1.64. for hypothesis 1, it was obtained that the value of $\beta = 0.1169$ and t-statistic = $4.3232 > 1.64$, indicating that the perceived usefulness positively influenced the auditor behavioral intentions in using audit information technology. According to these results, hypothesis 1 is accepted. As for hypothesis 2, the value of β was 0.1317 and the value of t-statistic was $3.8709 > 1.64$. It indicated that the perceived ease of use positively

influenced the auditor behavioral intentions in using audit information technology. Therefore, hypothesis 2 is accepted. Furthermore, hypothesis 3 obtained the value of $\beta = 0.0934$ and the value of t-statistic = $2.2181 > 1.64$. In other words, attitudes positively influenced the auditor behavioral intentions in using audit information technology. Accordingly, hypothesis 3 is accepted. For hypothesis 4, the value of β was 0.3227 and the value of t-statistic was $5.5018 > 1.64$, indicating that subjective norms positively influenced the auditor behavioral intentions in using audit information technology. Grounding by the results, hypothesis 4 is also accepted. Meanwhile, the β value of 0.1181 and t-statistic value of $2.4464 > 1.64$ were obtained in hypothesis 5's testing. These values showed that perceived behavioral control made a positive effect on the auditor behavioral intentions in using audit information technology. Thus, hypothesis 5 is accepted. The last, hypothesis 6 obtained the value of $\beta = 0.4993$ and the value of t-statistic = $13.7383 > 1.64$. These values indicated that behavioral intentions also positively influenced the auditor's behaviors in using audit information technology. Accordingly, hypothesis 6 is also accepted.

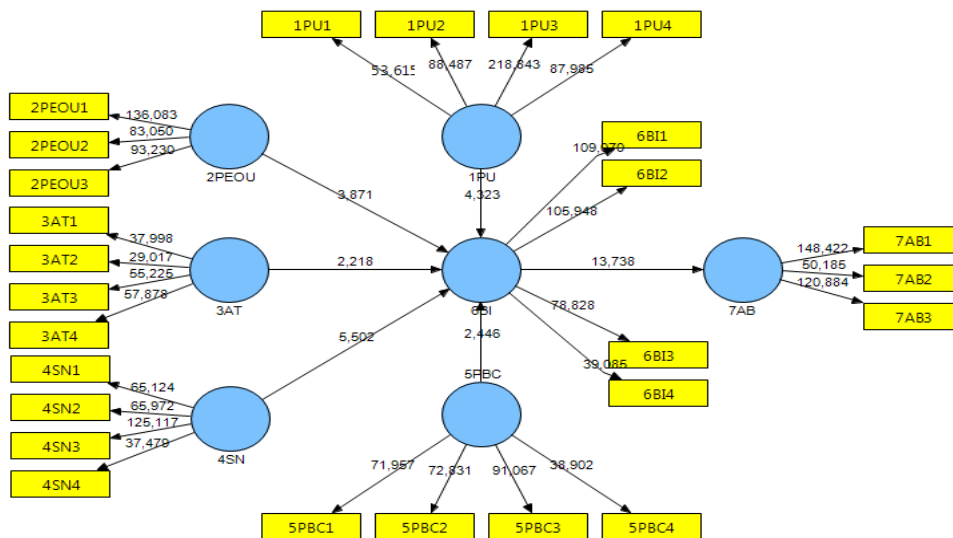


Figure 2 – Results of Structural Modeling Analysis

The following table is the summary of hypothesis testing:

Table 4 – Results of Hypothesis Testing

Hypothesis	Construct	Original Sample	t-Statistic	Description
H1	Perceived Usefulness -> Behavioral Intention	0,1169	4,3232	Accepted
H2	Perceived Ease of Use -> Behavioral Intention	0,1317	3,8709	Accepted
H3	Attitude -> Behavioral Intention	0,0934	2,2181	Accepted
H4	Subjective Norm ->Behavior Intention	0,3227	5,5018	Accepted
H5	Perceived Behavioral Control ->Behavioral Intention	0,1181	2,4464	Accepted
H6	Behavioral Intention -> Actual Behavior	0,4993	13,7383	Accepted

DISCUSSION OF RESULTS

This study adopted the theory of TAM and TPB to explain the use of audit information technology by auditors in Indonesia. As explained before, the results of this study indicate that perceived usefulness has a positive effect on auditor behavioral intentions in using audit information technology. These results are consistent with the studies conducted by Davis et al., (1989), Venkates & Davis (2000), Pai & Huang (2010).

Moreover, it is indicated that perceived ease of use leads perceived usefulness to have a positive effect on auditor behavioral intentions in using audit information technology. This is

also linear with the results of studies performed by Davis et al., (1989), Venkatesh & Davis (2000), Pai & Huang (2010). This study also shows that the more useful and easier audit information technology will attract auditor intentions to use it.

Additionally, attitudes also have a positive effect on auditor behavioral intentions in using audit information technology, which is in accordance with the results of previous studies by Baker & White (2010), Jafarkarimi *et al.* (2016), Kusumadewi, Baridwan & Hariadi (2017). The many more good attitudes shown by auditors will increasingly enlarge their behavioral intentions. That is, the possibility to use audit information technology is also getting bigger.

Next, this study suggests that subjective norms also have a positive effect on auditor behavioral intentions in using audit information technology. This supports the results of studies carried out by Lam, Cho, & Qu (2007), Armitage & Conner (2001), Jafarkarimi *et al.* (2016), Kusumadewi, Baridwan & Hariadi (2017). The use of audit information technology will likely be affected by social pressures coming from the environment surrounding auditors.

Besides, the results of this study indicate that perceived behavioral control positively influences auditor behavioral intentions in using audit information technology, which is consistent with the studies conducted by Jafarkarimi *et al.* (2016), Kim *et al.* (2016), Cheung & To (2016), Kusumadewi, Baridwan & Hariadi (2017). The use of audit information technology is easy to be learned and operated by auditors, drawing the auditors' intentions.

Furthermore, this study indicates that behavioral intentions have a positive effect on auditor behaviors in using audit information technology. This is in line with the studies undertaken by Venkatesh & Davis (2000), Yilmaz & Ozer (2008), Jafarkarimi *et al.* (2016), Kim *et al.* (2016), Kusumadewi, Baridwan & Hariadi (2017). The existence of large behavioral intentions of auditors in using audit information technology will cause the auditors tend to use it in doing their works.

Thus, this study reflects that the determinants of behavioral intentions on auditor behaviors include perceived usefulness, perceived ease of use, attitudes, subjective norms, and perceived behavioral control. This is in accordance with the theory of TAM and TPB.

The results of this study have two implications, namely theoretical and practical implications. The theoretical implication of this study is that the results of this study support the theories adopted, namely *Technology Acceptance Model (TAM)* and *Theory of Planned Behavior (TPB)*. In addition to supporting both theories, this study is also able to develop the concept of acceptance or rejection of a technology by using the constructs of *perceived usefulness, perceived ease of use, attitude, subjective norm, perceived behavioral control, behavioral intention, and actual behavior*. In another side, the practical implication of this study is that the results of this study can be used as a reference by programming-service vendors or providers and developers of audit information technology or general information technology to improve information technology. Furthermore, this study is expected to be used by Public Accounting Firms and Management to make decisions and motivate auditors to have more passion and interest in using audit information technology so that auditors in Indonesia can compete with foreign auditors.

CONCLUSION

Based on the results of this study, it is concluded that auditor behaviors in using audit information technology are defined by auditor behavioral intentions. Auditor behavioral intentions are positively influenced by perceived usefulness, perceived ease, attitudes, subjective norms, and perceived behavioral intentions. This study gives results that behavioral intentions are the main determinant of behaviors and a fully mediating variable. Behavioral intentions indicate that auditors have a positive evaluation result on auditor behaviors in using audit information technology. Finally, it is expected that further studies can add other variables that may affect behavioral intentions towards actual behaviors and be conducted in different cultures and places.

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