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INTEGRATING TAM, TPB, AND SCT IN PREDICTING CAATS ADOPTION: A TRIPLE LENS APPROACH

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ABSTRACT

The swift advancement of technology has created a notable transformation in the auditing field. External auditors are urged to adapt Computer-Assisted Audit Techniques (CAATs) utilization in order to improve their performance. However, CAATs adoption in Indonesia has not yet been mandatory by regulations. Therefore, this research aims to examine the factors influencing auditor's CAATs adoption by integrating Technology Acceptance Model (TAM), Theory of Planned Behavior (TPB) and Social Cognitive Theory (SCT). Questionnaires were distributed to 100 auditors working at Public Accounting Firm (PAF) in Indonesia. This study employs Structural Equation Modelling (SEM) in SmartPLS to analyze the relationships between variables. Key findings of this study discovered that perceived ease of use (PEOU) has positive influence towards perceived usefulness (PU) of auditors, PU has positive influence towards attitude (AT), AT has positive influence towards behavioral intention (BI), subjective norm (SN) has positive influence towards BI, perceived behavioral control (PBC) has a positive influence towards BI, self-efficacy (SE) has positive influence towards BI, and BI has positive influence towards auditors' actual behavior in using CAATs. However, the PEOU does not have a positive influence towards AT. In conclusion, the constructs used in this study are linked and capable of predicting auditors' CAATs adoption. This research could contribute to audit research by supporting TAM, TPB, and SCT, while also developing a model to predict the acceptance and rejection of CAATs adoption. Furthermore, this study could be used by decision makers to foster technology-driven audit process.

Keywords: *CAATs, audit technology, Technology Acceptance Model, Theory of Planned Behavior, Social Cognitive Theory*

1. INTRODUCTION

The rapid growth of technology has caused a seismic shift in the auditing industry. In recent years, the adoption of audit technology has become more common among external auditors [1]. It is largely driven by technology's function to improve audit efficiency and effectiveness [2]. The adoption of technology in this field is called Computer-Assisted Audit Techniques (CAATs). CAATs itself is defined as computer tools and techniques that an external or internal auditor utilizes as a part of his or her audit procedures in processing data and arranging financial reports in the entity's information systems [3]. According to [4], audit quality is largely influenced by the usage CAATs. It enables auditors to perform faster and more accurately with major broad data in which the auditor's confidence of opinion will rise [5].

External auditors have faced new challenges to keep pace with the technological growth in the auditing field [6]. Although CAATs has significantly helped the audit procedures, there are still several firms that limit the utilization of CAATs as they lack acceptance from the audit personnels [3]. Without a proper understanding of the obstacles to CAATs adoption, audit firms might miss the opportunity to improve efficiency in audit process and lower costs. Hence, the factors influencing auditor's behavior in using CAATs need to be examined.

The current study conducted analysis in Indonesia, a country ranked fourth as the most populous country with rapidly developing economy [7]. In Indonesia, the use of audit technology is not mandatory but recommended by Indonesian Audit Standards Statements No 59. Therefore, the auditor's intention of using CAATs is not driven by regulation. According to Widya

et al [8], performance transition from conventional to technology-based audit processes depends on the auditor's acceptance towards technology. Hence, this study examines the factors affecting the auditor's technology acceptance with Technology Acceptance Model (TAM), with perceived usefulness and perceived ease of use as its main constructs. TAM was selected for its simplicity as it only lies in two constructs which provide a concise framework to effectively predict user acceptance of technology. It is also considered robust because it has been extensively validated through empirical studies related to technology adoption [9, 10].

However, TAM lacks definition in terms of external variables. Its constructs, perceived ease of use and perceived usefulness, only offer general information about individual opinion in using technology without considering the social influences [11]. Several studies suggest combining with other models and various extensions to have a greater insight and a more precise level of CAATs adoption research [12]. Therefore, to enrich this research in understanding the external variables, TAM is combined with Theory of Planned Behavior (TPB) and Social Cognitive Theory (SCT). TPB was chosen as it was proven accurate in predicting a wide range of behavioral domains, including technology utilization [13,14]. Two TPB variables, subjective norm and perceived behavioral control were included in TAM due to the recognition of their utility in IT usage to inquire their significance in social science [15]. Attitude, which is also TPB variable, is derived from perceived ease of use and perceived usefulness [16]. Hence, TAM and TPB are interrelated.

Meanwhile, SCT was employed because it is proven to clearly explain the effect of external factors on auditors' cognitive processes [17]. SCT can elaborate how the convergence of environmental factors, cognitive elements, and behavior influence the way an individual behaves [18]. One of the SCT variables, self-efficacy, has a similar theoretical meaning and measurement methodologies with the TPB variable which is perceived behavioral control. Self-efficacy defines intrinsic motivation of human behavior, while perceived behavioral control defines extrinsic motivation of human behavior [19].

Most of the prior research on CAATs showed limitations, such as, respondents included only internal auditors [20–22]. Hence, research in external auditors' scope is recommended to get better insight about the usage intentions on CAATs [23]. Many previous studies about auditor's technology adoption focused on Big Four Public Accounting Firm (PAF) [8, 24] and a larger scope is suggested for the future research [23, 25, 26].

This study will enrich the literature by providing additional perspective with a larger scope of participant by collecting the research sample from all PAFs in Indonesia. It is known that the auditor's intention of using CAATs is not driven by regulation. Therefore, this study will contribute by integrating TPB, SCT, and TAM to predict the factors influencing auditor's behavior regarding CAATS usage with the data collection from external auditors of PAFs in Indonesia.

2. PRIOR RESEARCH AND THEORETICAL FRAMEWORK

Computer-Assisted Audit Techniques

In the prior study, Baniata et al. (2024) defined CAATs as "cutting-edge technologies that assist internal and external auditors in the auditing of performance, tests, and tasks". Meanwhile, according to Meiryani et al. (2021), CAATs are computerized programs which carry out audit processes and perform comprehensive operations on various types of electronic data to prevent fraud. CAATs can automate manual processes with the help of electronic working papers, statistical analysis software, and even artificial intelligence capabilities to fasten the process of financial performance analysis. CAATs such as IDEA software and Audit Command Language (ACL) Analytics have emerged to identify business risks and assist on going concern evaluation [6]. CAATs also manifest in the more generic forms such as Microsoft Excel which is available on every computer [3].

Theory of Planned Behavior

Developed by Ajzen (1991), theory of planned behavior stated that individual behavior is affected by behavioral intention. This theory is used to predict a person's intention to engage in an action and account for every action that a person is capable of controlling [29]. TPB also stated that human behavior is guided by three types of considerations which include behavioral

beliefs, normative beliefs, and control beliefs. Behavioral belief itself is about the consequences of any behavior committed. On the other hand, normative belief is related to the expectations of other people and control belief is influenced by the presence of factors that might impede performance of the behavior. According to Bosnjak et al [30], cognitive attitude, subjective norm, perceived behavioral control, and habit were considerably related to intentions. Perceived behavioral control was the strongest predictor of intention. However, habit moderated relationships between the TPB constructs and intention. TPB has been effectively applied to numerous behavioral cases to both predict and explain behavior [31].

Technology Acceptance Model

Acceptance of technology is an important aspect of IT implementation. The technology acceptance model is a major contribution to the study of IT usage and acceptance [16]. This model examined the reasons why people embrace or reject the use of technology. TAM is comprised of four constructs which are perceived ease of use (PEOU), perceived usefulness (PU), attitude, and actual behaviors. It has a three-stage process, whereby external factors (system design features) trigger cognitive responses which are PEOU and PU. Those responses form an affective response, which is attitude towards using technology, eventually influencing actual usage behavior. Prior study indicated that individuals tend to accept and use new technology if they perceive that the technology is easy to use [32]. PEOU is determined when a user perceives that technology usage is free of effort. Technology acceptance itself is affected by behavioral intention, which is driven by TPB's attitude and subjective norms [33]. This explained how TPB was the predecessor of TAM. On the other hand, PU and PEOU are specified as the main factors influencing attitude in the TAM. Prior research has shown the applicability of TAM, where PU and PEOU are antecedents of usage intention to various types of IT, to both experienced and new users [34]. Therefore, TAM basically stated that the motive behind behavioral intentions reasoned someone's action. The variables derived from this model are PEOU, PU, behavioral intention, and actual usage of behavior or behavior of CAATS usage.

Social Cognitive Theory

Social Cognitive Theory describes individuals that learn and adapt through observation, imitate and receive feedback. This theory's fundamental concepts are that behavior is influenced by the interaction between the individual, the environment and social context [35]. SCT is a psychological theory that explains how people learn and behave by observing others and how their environment affects their behavior and cognitive processes [36]. Other research explains SCT as a theory that explains that human thought processes play an important role in understanding human personality and states that humans learn by observing and monitoring the behavior of other individuals in the surrounding environment. Humans are shaped and influenced by the environment in which they find themselves, so we need to consider which environment they will be part of [37]. SCT emphasizes a cognitive understanding of changes and development in behavior from children to adults based on social experiences [37]. There are five aspects of SCT which can drive human behavior, namely: possible consequences that will occur and channel reactions to the current situation; experiencing various consequences received by other people; receiving new information cognitively regarding possible consequences that will occur; expectations influence human behavior in making decision; and consequences that do not occur can have an impact.

3. HYPOTHESES DEVELOPMENT

One of the foundational research frameworks developed under this study is rooted in the TAM, featuring PEOU and PU constructs. PEOU might be an antecedent of PU [16]. PEOU influences PU because a system which is easy to use will minimize learning curves, allowing the user to swiftly grasp its functionality and optimize time for other tasks [38]. Therefore, it is assumed that the easier the usage of technology is, the more likely the user perceives that it is useful.

H_1: Perceived ease of use has positive influence towards perceived usefulness of auditors in using CAATs for auditing.

PEOU has a significant influence on behavioral intention [11]. However, the correlation between those variables is intervened by attitude as it was hypothesized in previous study [39] that PEOU and PU were the perceptions which affect individual's attitude to use technology.

H_2: Perceived usefulness has a positive influence towards attitude of auditors in using CAATs.

Attitude is a form of belief to indicate behavior and considered as the first antecedent of behavioral intention [40]. Based on [16], PU leads to an affective response because it is a key determinant of an individual's attitude towards utilizing technology. When individuals perceive that technology is easy to use, they are likely to develop a positive attitude towards it.

H_3: Perceived ease of use has a positive influence towards attitude of auditors in using CAATs for auditing.

According to Ajzen [28], behavioral intention is an indication of how much effort an individual dedicates to perform a certain behavior. Behavioral intention is influenced by attitude, a positive or negative feeling an individual has, to commit the behavior [8]. The more propitious the attitude, the higher the likelihood of an individual's intention to perform a sequence of behaviors [30]. There is a positive substantial correlation between attitudes and behavior intention [41]. Behavioral intention on using audit information technology is positively affected by attitudes [9]. Therefore, in this study, it is hypothesized as below.

H_4: Attitude has a positive influence towards behavioral intention of auditors in using CAATs for auditing.

Subjective norm refers to the perceived social pressure to perform or not to perform the behavior [28]. The more favorable a subjective norm, the stronger an individual's intention to perform the behavior under consideration [28]. In this study, subjective norm means the degree to which a person perceives the demands of important or referent others on him or her to use audit technology. Subjective norm has a significant influence towards behavioral intention on utilizing audit technology [9]. Therefore, in this study, it is hypothesized as below.

H_5: Subjective norm has positive influence towards behavioral intention of auditor in using CAATs for auditing.

According to Widya et al. [9] and Handoko & Suryadharma [42], perceived behavioral control has a significant impact on behavioral intention because it determines ease or difficulty of an individual in performing action. Perceived behavioral control is also considered as a reflection of past experiences in dealing with anticipated problems. Perceived control has an important role in determining the decision to adopt a new technology and ensure the extent of investment [43]. Hence, it is hypothesized as below:

H_6: Perceived behavioral control has a positive influence towards behavioral intention of auditors in using CAATs for auditing.

Self-efficacy portrays the faith of individual's capability to face an obstacle and accomplish it successfully [44]. It also means the confidence of a person's ability to perform an action even though there are challenges [45]. Self-efficacy has a positive interrelationship with behavioral intention of auditor usage on CAATs [23, 42, 46].

H_7: Self-efficacy has a positive influence towards behavioral intention of auditors in using CAATs for auditing.

Prior research [9] indicated that behavioral intention has a positive influence on auditors' behavior in using audit technology. When auditors possess a strong intention in utilizing technology, they are likely to accept and perceive it favorably [11].

H_8: Behavioral intention has positive influence towards auditor's behavior of CAATS usage.

The hypotheses developed from TAM, SCT and TPB involved eight variables, namely Behavior of CAATS Usage which is influenced by Behavioral Intention. The Behavioral Intention variable is influenced by Attitude, Subjective Norms, Perceived Behavioral Control, and Self-Efficacy. Attitude variable is influenced by Perceived Usefulness and Perceived Ease of Use. The correlation of each variable is shown in the figure below.

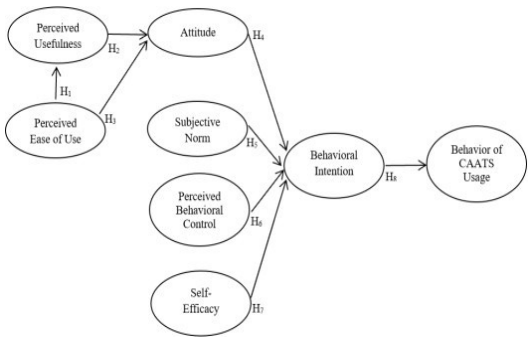

Figure 1. *Research Model*

4. METHOD OF RESEARCH

Samples. The samples were collected using questionnaires. The questionnaires were distributed to 100 auditors that works at PAFs in Indonesia. The minimum number of samples was 80, determined using Roscoe theory [47]. The data collection was conducted from September to October 2024. In this research, the research subjects are auditors at public accounting firms in Indonesia. The broad reach of auditors across Indonesia is chosen to obtain more understanding related to CAATs application on carrying audit procedures.

Procedures. Purposive sampling was selected as the data collection method. This sampling method is a non-probability sampling, in which the sample selection is not random. The sample chosen is supposed to be relevant according to the research needs. Researchers will distribute soft copy of questionnaires to auditors throughout Indonesia using various online platform, sending questionnaires directly to individuals in which is willing to be samples.

Measure and Research Instrument. This study used quantitative methods as it was aimed at testing a set of hypotheses and obtaining general results. The statistical technique used was Structured Equational Modelling (SEM). The research model, including questions and indicators were developed according to previous research and translated to Bahasa Indonesia to align with the linguistic of local context. The instrument employed to analyze the data was SmartPLS. Prior studies were used as references in determining which instruments were employed to measure each of the variables. The analysis assessed the degree to which indicators or observable variables are successfully linked to the corresponding constructs.

Perceived ease of use (PEOU) and perceived usefulness (PU) adopted six indicators respectively from Davis [48]. The measurement of those attributes was modified to the context of this study. Attitude (AT), subjective norm (SN), and Perceived Behavioral Control (PBC) and self-efficacy (SE) employed the indicators as mentioned in prior studies [15, 49]. Behavioral intention (BI) adopted four indicators from [50]. Behavior of CAATS Usage (AB) was measured using two indicators from [51]. The variable operationalization is shown in

Table 1 below. Each of the variables was measured using the Likert scale from 1 (one) to 5 (five). The interpretations were 1= strongly disagree, 2= disagree, 3= neutral, 4= agree, and 5= strongly agree.

Table 1. Variable Operationalization

Variables	Questionnaire Items	References
Perceived Ease of Use (PEOU)	Learning to operate CAATS would be easy for me.	Davis [48]
	I would find it easy to get CAATs to do what I want it to do.	
	My interaction with CAATs would be clear and understandable.	
	I would find CAATs to be flexible to interact with.	
	It would be easy for me to become skillful at using CAATs.	
	I would find CAATS easy to use.	
Perceived Usefulness (PU)	Using CAATS in my job would enable me to accomplish audit tasks more quickly.	Davis [48]
	Using CAATS would improve my job performance.	
	Using CAATS in my job would increase my productivity.	
	Using CAATS would enhance my effectiveness on the job.	
	Using CAATS would make it easier to do my job.	
	I would find CAATS useful in my job.	
Attitude (AT)	Using CAATs for auditing to complete auditing process is a good idea	Taylor & Todd [15], Bhattacherjee [49]
	Using CAATs for auditing to complete auditing process is a wise decision	

Subjective Norm (SN)	Superintendent thinks that I have to use CAATs for auditing.	Taylor & Todd [15], Bhattacherjee [49]
	Decision-maker thinks that I have to use CAATs.	
	Colleagues/fellow auditors would favor me using CAATs.	
	Superintendent thinks that using CAATs is a good idea.	
Perceived Behavioral Control (PBC)	I think I will be able to use CAATs.	Taylor & Todd [15], Bhattacherjee [49]
	I think I have full control in using CAATs.	
	I have resources in using CAATs.	
	I have competence and skills to use CAATs.	
Self-Efficacy (SE)	I am comfortable using my own CAATs	Taylor & Todd [15], Bhattacherjee [49]
	I will use and run my own CAATs.	
	I have sufficient information for using or running my own information technology for auditing	
Behavioral Intention (BI)	I want to keep using CAATs in the future.	Venkatesh & Davis [50]
	I hope I can keep using CAATs in the future.	
	I will advise other people to use CAATs.	
	I will add CAATs as the facilities I prefer.	
Behavior of CAATS Usage (AB)	I frequently use CAATs at work.	Kim et al [51]
	I always use CAATs at work.	

5. RESULT OF STUDY

According to the responses collected from questionnaires, majority of the respondents are between 20-30 years old, with 61% female and 39% male population. There are more auditors working in Non-Big 4 firms than in the Big 4 PAFs with the composition of 66% and 34% respectively. The positions held by the respondents are various. The largest percentage is Associates with 40% composition, followed by 39% junior auditors, 17% senior associates, with 3% managers, and 1% senior managers. It is shown in the *Table 2 below.*

Table 2. *Sample Demographics*

No	Measurement	Description	Frequency	Percentage
1.	Gender	Male	39	39%
		Female	61	61%
2.	Age	20 - 30 years old	99	99%
		31 - 40 years old	1	1%
		41 - 50 years old	0	0%
		> 50 years old	0	0%
3.	Position	Junior Auditor	39	39%
		Associate	40	40%
		Senior Associate	17	17%
		Assistant Manager	0	0%
		Manager	3	3%
		Senior Manager	1	1%
		Partner	0	0%
4.	PAF Category	Big 4	34	34%
		Non-Big 4	66	66%

The purpose of measuring data validity and reliability using SmartPLS is to determine the accuracy and dependability of the obtained data. In this process, the authors used several analysis measures to assess data validity and reliability, including Cronbach's alpha (CA), Composite Reliability (CR), Average Variance Extracted (AVE), R-square (R^2), and Heterotrait-Monotrait Ratio (HTMT). When an analysis metric falls within the prescribed range of values, it is considered accurate and dependable.

Table 3. The CA scores were higher than 0.6 and the composite reliability was higher than 0.7. These showed that all constructs had passed the reliability testing. The confirmatory result analysis for measurement model is shown in **Table 4**. Furthermore, the table shows that the

Reliable CA should be >0.6 and CR score should be >0.7, and valid AVE values are beyond 0.5. The loading factors of all constructs were higher than 0.7, and the AVE scores and communality were higher than 0.5. HTMT score should be below 0.9, or ideally 0.85 to be considered valid. In this context, the HTMT result all show values below 0.9 where all the data meets the threshold for discriminant validity. The data results are shown in

AVE root was higher than the latent variable correlation and the cross-loading was higher than 0.7. These results showed all constructs had passed the discriminant validity testing which is shown in **Table 5**. The structures and relationships between each variable are portrayed in **Figure 2**.

Table 3. Discriminant Validity – Heterotrait-Monotrait Ratio

	AB	AT	BI	PBC	PEOU	PU	SE	SN
AB								
AT	0.701							
BI	0.762	0.871						
PBC	0.677	0.665	0.766					
PEOU	0.567	0.613	0.702	0.785				
PU	0.624	0.834	0.794	0.582	0.798			
SE	0.573	0.725	0.745	0.784	0.689	0.595		
SN	0.803	0.839	0.780	0.679	0.633	0.686	0.658	

Table 4. Confirmatory Factor Analysis Results for Measurement Model

Constructs	Cronbach's alpha	Composite Reliability	AVE
Perceived Ease of Use (PEOU)	0.867	0.900	0.602
Perceived Usefulness (PU)	0.935	0.949	0.755
Attitude (AT)	0.805	0.911	0.836
Subjective Norm (SN)	0.910	0.937	0.787
Perceived Behavioral Control (PBC)	0.845	0.896	0.683
Self-Efficacy (SE)	0.877	0.924	0.802
Behavioral Intention (BI)	0.903	0.932	0.775
Behavior of CAATS Usage (AB)	0.858	0.933	0.875

Figure 2. *Result of Structural Modeling Analysis*

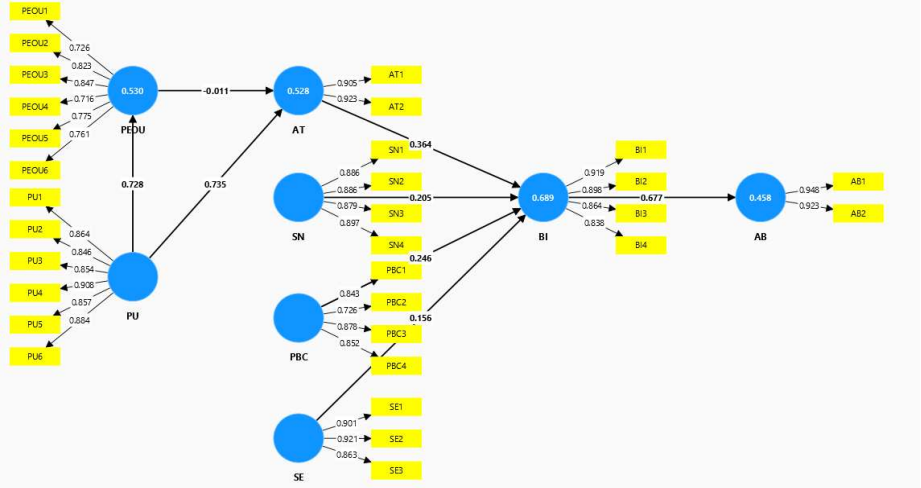

Table 5. AVE Root of Latent Variable Correlation

	AB	AT	BI	PBC	PEOU	PU	SE	SN
AB	0.935							
AT	0.589	0.914						
BI	0.677	0.746	0.880					
PBC	0.579	0.561	0.681	0.827				
PEOU	0.495	0.524	0.631	0.676	0.776			
PU	0.560	0.727	0.730	0.528	0.728	0.869		
SE	0.500	0.615	0.668	0.674	0.596	0.543	0.896	
SN	0.712	0.721	0.711	0.609	0.573	0.637	0.595	0.887

To assess the proportion of variance in dependent variable that is explained by the independent variables, researchers used R^2 statistics. The R^2 value below 0.25 is generally considered weak, between 0.25 and 0.5 is considered moderate, and above 0.5 is considered strong. However, R^2 value below 0.5 can still be accepted in several social studies with strong theoretical justification. In the context of this research, R^2 value of AT, BI, and PEOU are above 0.5, as portrayed in **Table 5**. On the other hand, R^2 of AB is 0.458. It means 45.8% of the variance in AB can be observed by the variables in the model. Adjusted R^2 took account the number of independent variables in the model. The adjusted R^2 value of AB is 0.453, which means 45.3% of the variance in AB can be accounted for. The moderate R^2 value is likely due to the diverse answers from the respondents. Several auditors admitted that they do not use CAATs every day as their type of work does not always require CAATs.

Table 6. R-square Testing Result

	R-square	R-square adjusted
AB	0.458	0.453
AT	0.528	0.518
BI	0.689	0.676
PEOU	0.530	0.525

The hypotheses were accepted when T-statistic value is ≥1.64 and P-value is ≤0.05. Additionally, the original sample value should be positive. Therefore, H1 was accepted when perceived ease of use has positive influence towards perceived usefulness (P-value= 0.000, T-statistic= 15.029). H2 was accepted when perceived usefulness has positive influence towards attitude (P-value= 0.000, T-statistic= 7.751). H3 was rejected when perceived ease of use has negative influence towards attitude (P-value= 0.464, T-statistic= 0.092). H4 was accepted when attitude has positive influence towards behavioral intention of auditor in using CAATs (P-value= 0.000, T-statistic= 3.456).

H5 was accepted when subjective norm has positive influence towards behavioral intention of auditor in using CAATs (P-value= 0.016, T-statistic= 2.181). H6 was accepted when perceived behavioral control has positive influence towards behavioral intention of auditor in using CAATs (P-value= 0.016, T-statistic= 2.173). H7 was accepted when self-efficacy has positive influence towards behavioral intention of auditors in using CAATs (P-value= 0.038, T-statistic= 1.787). H8 was accepted when behavioral intention has positive influence towards auditor's behavior of CAATS usage (P-value= 0.000, T-statistic= 11.507).

Table 7. Hypotheses Testing Result

Hypotheses	Construct	Original Sample	STDEV	T statistics	P values	Result
H1	PEOU -> PU	0.728	0.048	15.029	0.000	Accepted
H2	PU -> AT	0.735	0.095	7.751	0.000	Accepted
H3	PEOU -> AT	-0.011	0.123	0.092	0.464	Rejected
H4	AT -> BI	0.364	0.105	3.456	0.000	Accepted
H5	SN -> BI	0.205	0.094	2.181	0.016	Accepted
H6	PBC -> BI	0.246	0.113	2.173	0.016	Accepted
H7	SE -> BI	0.156	0.087	1.787	0.038	Accepted
H8	BI -> AB	0.677	0.059	11.507	0.000	Accepted

6. DISCUSSION OF RESULTS

The result of this study discovered that perceived ease of use had a positive influence towards perceived usefulness of auditors in using CAATs. Both perceived ease of use and perceived usefulness are derived from TAM. This finding supports the studies of Davis [16] and Winarno et al [38]. The easier technology is to be utilized, the more likely the users perceive it as useful. This research also showed that perceived usefulness had a positive influence towards auditors' attitude in using CAATs. Attitude itself came from TPB. This finding is consistent with Davis [52] and Shihab et al [11]. When auditors see CAATs as useful, they tend to develop a positive attitude towards using it.

However, this study did not support the hypothesis that perceived ease of use has a positive influence towards attitude. This result differs from Tarhini [32] and Azwar [40]where a positive relationship was found. This contrasting outcome might be due to the difference in sample characteristics. While auditors might see CAATs as easy to use, this does not necessarily lead to the development of a positive feeling towards valuing the technology. On the other hand, this study discovered that attitude had positive influence towards behavioral intention in using CAATs. Behavioral intention stemmed from TAM. This finding supports previous studies from Widya et al [9], Bosnjak et al [30], and Grigoropoulos [41]. When auditors possess a positive attitude towards CAATs, they tend to have the intention to utilize it.

Additionally, the research disclosed that subjective norms had positive influence towards behavioral intention in using CAATs. Subjective norm itself is derived from TPB, and behavioral intention is taken from TAM. This finding confirms the studies of Ajzen [28], Widya et al [9], and Bosnjak et al [30]. When a subjective norm of CAATs adoption is favorable for the auditors, they would have the intention to use CAATs under consideration. Furthermore, the research showed that perceived behavioral control had positive influence towards auditor's behavioral intention in using CAATs, which is in line with Widya et al [9], Handoko & Suryadharma [42], and Lynne [43]. Perceived behavioral control is derived from TPB. The stronger the perceived

behavioral control or extrinsic motivation, the stronger the auditor's plan to adopt CAATs.

This study also revealed that self-efficacy had a positive influence towards behavioral intention in using CAATs. It validates the findings of Handoko & Suryadharma (2020), Purnamasari et al. (2022), and Almagrashi et al. (2023). Self-efficacy is derived from SCT. When auditors are confident in their capability to perform audits using CAATs, they would have a strong intention to utilize the technology. Finally, this study showed that behavioral intention had positive influence towards actual behavior of CAATs usage. Behavior of CAATs usage itself is taken from TAM. This finding is in line with Widya et al [9] and Shihab [11]. When auditors have a strong intention to use CAATs, they tend to approve and put it into practice. Hence, this study proves that TAM, TPB, and SCT are associated to predict auditor's behavior in adopting CAATs.

The results of this research possess implications for academic research and practice. The theoretical implications include aiding the audit research by supporting three theories: TAM, TPB, and SCT. Furthermore, the exploration of theories integration can develop a concept to predict the acceptance and rejection of CAATs usage by using perceived ease of use, perceived usefulness, attitude, perceived behavioral control, subjective norm, self-efficacy, behavioral intention, and behavior of CAATs usage. This research can be used as a guideline for academic researchers to develop research concepts related to general and audit technology development.

The practical implications of this research include being as guidelines and considerations for the decision makers to enable technology-driven auditing process. This study can also be used by superintendents at PAFs to motivate their employees to utilize CAATs in completing their audit responsibilities. For professional trainers, this study could be used as a reference to design specialized courses on CAATs to assist auditors in gaining the necessary skills related to audit technology.

7. CONCLUSION

This research developed and examined a cognitive model by integrating TAM, TPB, and SCT in predicting the factors determining auditors' CAATs adoption. Questionnaires were distributed to 100 external auditors who work at Big 4 and Non-Big 4 PAFs in Indonesia. Key findings of this study discovered that perceived ease of use (PEOU) has positive influence towards perceived usefulness (PU) of auditors, PU has positive influence towards attitude (AT), AT has positive influence towards behavioral intention (BI), subjective norm (SN) has positive influence towards BI, perceived behavioral control (PBC) has a positive influence towards BI, self-efficacy (SE) has positive influence towards BI, and BI has positive influence towards auditors' actual behavior in using CAATs. However, the PEOU does not have a positive influence towards AT.

Nevertheless, this study has certain limitations. Data sources are collected through distributing questionnaires to respondents which produce data in quantitative form. There might be qualitative aspects which are not accounted for. Those aspects include subjective experiences, organizational dynamics, and work culture in each accounting firm that could vary based on the situational factors. Besides, this study was only conducted in Indonesia. Hence, the findings might not be applicable to external auditors in other regions or countries with different regulations, technology adoption practices, and economic conditions. In addition, this study was conducted over a specific time period that may not reflect long-term trends, as well as resource limitations in data collection and analysis. Future studies could further explore the role of perceived ease of use in auditor's CAATs adoption to examine whether it has stronger impacts in other contexts or environments. Besides, researchers could use additional factors such as organizational support and external regulatory factors such as moderating or intervening variables to predict auditor's CAATs adoption.

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APPENDIX – Questionnaires

No.	Statement	SD	D	N	A	SA
Perceived Ease of Use						
PEOU1	Learning to operate CAATS would be easy for me.	1	2	3	4	5
PEOU2	I would find it easy to get CAATs to do what I want it to do.	1	2	3	4	5
PEOU3	My interaction with CAATs would be clear and understandable.	1	2	3	4	5
PEOU4	I would find CAATs to be flexible to interact with.	1	2	3	4	5
PEOU5	It would be easy for me to become skillful at using CAATs.	1	2	3	4	5
PEOU6	I would find CAATS easy to use.	1	2	3	4	5
Perceived Usefulness						
PU1	Using CAATS in my job would enable to accomplish audit task more quickly.	1	2	3	4	5
PU2	Using CAATS would improve my job performance.	1	2	3	4	5
PU3	Using CAATS in my job would increase my productivity.	1	2	3	4	5
PU4	Using CAATS would enhance my effectiveness on the job.	1	2	3	4	5
PU5	Using CAATS would make it easier to do my job.	1	2	3	4	5
PU6	I would find CAATS useful in my job.	1	2	3	4	5
Attitude						
AT1	Using CAATs for auditing to complete auditing process is a good idea	1	2	3	4	5
AT2	Using CAATs for auditing to complete auditing process is a wise decision	1	2	3	4	5
Subjective Norm						
SN1	Superintendent thinks that I have to use CAATs for auditing.	1	2	3	4	5
SN2	Decision-maker thinks that I have to use CAATs.	1	2	3	4	5
SN3	Colleagues/fellow auditors would favor me using CAATs.	1	2	3	4	5
SN4	Superintendent thinks that using CAATs is a good idea.	1	2	3	4	5
Perceived Behavioral Control						
PBC1	I think I will be able to use CAATs.	1	2	3	4	5
PBC2	I think I have full control in using CAATs.	1	2	3	4	5
PBC3	I have resources in using CAATs.	1	2	3	4	5
PBC4	I have competence and skills to use CAATs.	1	2	3	4	5
Self-Efficacy						
SE1	I am comfortable using my own CAATs	1	2	3	4	5
SE2	I will use and run my own CAATs.	1	2	3	4	5
SE3	I have sufficient information for using or running my own information technology for auditing	1	2	3	4	5
Behavioral Intention						
BI1	I want to keep using CAATs in the future.	1	2	3	4	5
BI2	I hope I can keep using CAATs in the future.	1	2	3	4	5
BI3	I will advise other people to use CAATs.	1	2	3	4	5

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BI4	I will add CAATs as the facilities I prefer.	1	2	3	4	5
Behavior of CAATS Usage						
AB1	I frequently use CAATs at work.	1	2	3	4	5
AB2	I always use CAATs at work.	1	2	3	4	5

Description: SD= Strongly Disagree, D= Disagree, N= Neutral, A= Agree, SA= Strongly Agree