

## DETERMINANTS OF COMPUTER ASSISTED AUDIT TECHNIQUES (CAATS) ADOPTION. A STUDY IN SMALL AND MEDIUM PRACTICES IN MALAYSIA

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### ABSTRACT

**C**omputer Assisted Audit Techniques (CAATs) is one of the audit tool used to assist audit firm in external and internal auditing. Adoption of CAATs in audit firm comes with bundles of advantages but the expenses of adoption may be can be adopted by large companies. Therefore, Small and Medium Practices (SMPs) are still struggling in CAATs adoption. Thus, this study aims to examine factors affecting the SMPs' behavioral intention (BI) of CAATs adoption by adapting the Unified Theory of Acceptance and Use of Technology (UTAUT). Survey questionnaires were distributed and collected from a sample of 120 SMPs. This study employed multiple linear regressions (MLR) and Pearson's Correlation Coefficient to test the hypothesis. The findings indicated that performance expectancy, social influence and facilitating condition have significant influence on behavioral intention towards CAATs adoption. However, effort expectancy has insignificant relationship on behavioral intention towards CAATs adoption. These findings can provide valuable insights to the SMPs in Peninsular Malaysia about CAATs adoption.

**Key words:** Computer Assisted Audit Techniques (CAATs), Small and Medium Practices (SMPs), Behavioral Intention.

## 1.0 Introduction

Nowadays, technology had given impact to audit profession in performing IT audit as businesses nowadays are implementing computerized accounting information systems. CAATs is one of the audit technologies or software which was defined as a tool use to assist audit firm in their external and internal auditing on organizations' financial reports and internal controls (Rosli, Yeow & Siew, 2012). According to Karkar (2002), there are several types of CAATs which includes Generalized Audit Software, Utility Software, Test data aghaseminairnd so on. Rosli, Yeow & Siew (2012) indicate CAATs bring the benefit to audit sector. For example, CAATs allow the auditor to independently access the data stored on a computer system without dependence on the client. Therefore, it allows IT audit work to perform efficiently, effectively and reduce audit time.

According to MIA (2016), there are 1247 registered audit firms in Peninsular Malaysia with most of the audit firms located in Kuala Lumpur 496 firms (39.8%), Johor 132 firms (10.6%) and Penang 113 firms (9.1%). Therefore, the study focus in these state where the questionnaire were distributed. Addition, 77% of audit firms have fewer than 10 staff, which is considered as Small, and Medium Practices (MIA, 2015).

### 1.1 Problem Statement

According to Transforming Small and Medium Practices (SMPs) (2015), it had been a long existed issue SMPs in Malaysia had faced challenges in CAATs adoption. SMP department was organized effective on 1<sup>st</sup> May 2015 by MIA to address the challenges faced by SMP in Malaysia. Phua, Lau, and Chris (2011) stated that SMPs in Malaysia are facing challenges in CAATs adoption due to the lack of physical resources, intellectual resources, human resources, financial resources, and organisational resources. Other than that, according to Phua et al. (2011), SMPs in Malaysia do not adopt CAATs because they do not have expertise to perform IFRS audits. Hence, they will lose their competitive advantages in the long term. However, according to Curtis and Payne's study (as cited in Rosli et al., 2012), SMPs in Malaysia is struggling in the adoption of CAATs due to their limited resources.

Previous studies have explored the behavioral intention to adopt and use technology in audit context. Most of the prior studies investigated the behavioral intention to adopt and use technology via the Unified Theory of Acceptance and Use of Technology (UTAUT) [Bierstaker, Janvrin, and Lowe (2013), Shamsuddin, Logenthiran, Dhinesh, Ameer, and Punnir (2015); and Mansour (2016)]. Moreover, Pedrosa, Costa, and Laureano (2015) investigated the behavioral intention to adopt and use technology by statutory auditors using UTAUT integrated with value for money and peer group influence.

Other than using UTAUT model, Uyar, Alnipak, and Guner (2015) applied Technology Acceptance Model (TAM) in this research area. Besides, Kim, Mannino, and Nieschwietz (2009) also using the TAM and modified it by taking into account organizational factors, social factors, and individual factors to study the behavioral intention to adopt and use technology in audit context.

Most of the past empirical studies were conducted in overseas. For instance, Bierstaker et al. (2013) and Curtis and Payne (2014) was conducted in United States. For Mansour (2016), it was conducted in Jordan and for Pedrosa et al. (2015), it was conducted in Portugal. One of the special cases for Mahzan and Lymer (2014) was conducted in both majority in UK and minority in Malaysia. Barely one past empirical study was conducted in Malaysia which is Shamsuddin et al. (2015) as compare to overseas. Therefore, the lack of studies in Malaysia urge the study to explore in details.

The past empirical studies from overseas focused on two groups of respondents. Some of them focused on

internal auditors such as Mahzan and Lymer (2014) and Gonzalez, Sharma and Galletta (2012). Some of them focused on external auditors such as Mansour (2016), Curtis and Payne (2014) and Pedrosa et al. (2015). It is important to provide both internal auditors' and external auditors' point of view regarding the behavioral intention to adopt and use CAATs as according to Chartered Institute of Internal Auditors (2015). However, in Malaysia, Shamsuddin et al. (2015) studied the usage level of CAATs among the internal auditors in Malaysia without taking into account the external auditors. In order to fill up the gap within the past empirical studies from overseas and Malaysia, the study investigate the behavioral intention of SMPs (external auditors) in Malaysia to adopt and use CAATs by using UTAUT in order to provide a Malaysian external auditors' point of view in this research area.

### *1.2 Objectives of the research*

The objectives of research are as follows:

#### General objective:

- To identify how the Unified Theory of Acceptance and Use of Technology (UTAUT) factors will influence the behavioral intention of SMPs in Peninsular Malaysia to adopt and use CAATs.

#### Specific objectives:

1. To examine the influence of the performance expectancy (PE) on the behavioral intention of SMPs in Peninsular Malaysia to adopt and use CAATs.
2. To examine the influence of the effort expectancy (EE) on the behavioral intention of SMPs in Peninsular Malaysia to adopt and use CAATs.
3. To examine the influence of the social influence (SI) on the behavioral intention of SMPs in Peninsular Malaysia to adopt and use CAATs.
4. To examine the influence of the facilitating condition (FC) on the behavioral intention of SMPs in Peninsular Malaysia to adopt and use CAATs.

### *1.3 Significance of Study*

In the practical significance from this research, we believe it will bring benefits to the SMPs in Malaysia. Nowadays, the use of CAATs for conducting audit works is important to ensure that they are able to face the challenges in competing environment. This research will probe the factors that influence the behaviour intention to adopt CAATs and give some useful recommendations to the SMPs for better understanding about CAATs adoption.

From the theoretical aspect of significance, it benefits to researchers or academicians for research interest to investigate the behavioral intention of audit firms in Malaysia to adopt and use CAATs. We hope that this study will served as a reference for future researchers in this study area.

## 2.0 Literature Review

### 2.1 *The Relationship between Performance Expectancy and Behavioral Intention*

Prior study by Aoun, Vatanasakdakul and Li, (2010) were investigated the factors that affect the usage of Accounting Information Systems (AIS) by accounting practitioners in Australia. They extended their research model by introducing a cultural related communication factor by Hall's (1973) national cultural theory to the UTAUT. Their purpose want to understand the effect of low context communication (LC) characterising Australian culture on the AIS acceptance and usage. Their target respondents were accountants in Australia. The results showed that performance expectancy positively affect behavioral intention and utilization of AIS. Besides that, their result also showed empirically that the LC characterising Australian culture has positive relationship to the use of AIS. Other research conducted by Tan and Lau (2015) examined the intention to adopt mobile banking services among Generation Y in Malaysia. They modified the UTAUT model by excluding the facilitating conditions and including the perceived risk in their research model. Their target respondents were students enrolled in a private university in Kuala Lumpur. The data collection method used by them was survey questionnaire. Multiple regression analysis was employed to analyse 347 valid responses. From the results, it showed that performance expectancy has significant influence on behavioral intention to adopt mobile banking. Therefore, it suggest that millennial generation has great concern about the performance of mobile banking and the benefits derived from it. Due to this, banking institution should conducted marketing campaign such as sales promotion, public relation and advertising to convey more information and educate consumers about the benefits of using mobile banking services. Contradicted with Celik (2015), the results showed that anxiety has a negative influence on performance expectancy. However, performance expectancy has a positive influence on behavioral intention to adopt online shopping. This research focus on customers' adoption of online shopping by using UTAUT integrating with anxiety level of customers toward online shopping. Anxiety refers to the degree to which an individual temporally experiences apprehension, fear and aggression when considering use of an online shopping channel. The target respondents in this study were Turkish online shoppers. Survey questionnaires were distributed. In performance expectancy dimension, auditor believed that performance would increase when they adopt technology. Similar to the original UTAUT model, the first hypothesis is formulated:

**H1: Performance Expectancy positively affects behavioral intention of small and medium practices in Peninsular Malaysia to adopt CAATs.**

### 2.2 *The Relationship between Effort Expectancy and Behavioral Intention*

Previous study conducted by Ahmad, Markkula and Oivo (2013) was to explore whether effort expectancy will affect the adoption of e-government services in Pakistan from a citizen perspective. Their target respondents were Pakistani university students because they are under the adult population who has massive use of internet in their daily lives. The data collection conducted based on convenience sampling and 115 responses collected through questionnaire surveys. The data analysis method used is descriptive statistics. The results showed that effort expectancy has positive relationship with technology adoption, which is adoption of e-government services in Pakistan. Similarly with Im, Hong and Kang (2010) investigated how technology adoption in Korea and U.S affected by culture with UTAUT model. Their target respondents were students and full-time employees in Korea and the U.S. The data collection conducted based on distributing questionnaire survey to 660 peoples and 550 responses received using SEM analysis. The results

showed that effort expectancy has positive relationship with U.S. and Korea users' decision-making on technology adoption. It is supported by Mohammadyari and Singh (2014) in their study showed that effort expectancy has positive relationship with individuals' level of comfort on e-learning technology adoption. The target respondents were New Zealand accountants working in small and medium-sized enterprises (SMEs). In effort expectancy dimension, if the technology is ease to use, individual are willing to learn about the features, and adapt their work practices to fit its norms (Mohammadyari & Singh, 2014). This same goes with auditors. Thus, the following hypothesis is proposed:

**H2: Effort Expectancy positively affects behavioral intention of small and medium practices in Peninsular Malaysia to adopt CAATs.**

### *2.3 The Relationship between Social Influence and Behavioral Intention*

Past empirical study by Hsiao and Tang (2013) defined social influence as a degree to which personal perceives that others trust he or she should use e-textbooks. The purpose of this study is to investigate whether social influence will lead to college students' behavioral intentions to adopt e-textbook for their studies pertaining to well-known theoretical intention-based models. Their target respondents were all business school undergraduate students from a large university with more than 10000 students. Data collection used by them was questionnaire method that used for subsequent analysis by the researchers to test the hypothesis. Their results show that that social influence has a positive impact on the behavioral intention which similar to subjective norm. Supported by Gonzalez, Sharma, and Galletta (2012) defined social influence as degree to which an individual perceives that person vital to other believe other should use the system. The objective of this study is to explore whether social influence in terms of UTAUT will lead to the antecedents of internal auditors' intentions to use continuous auditing technology. Their target respondents were 210 internal auditors worldwide on the status of their use of continuous auditing. Data collection method conducted by them was online survey by e-mailing respondents a link to their electronic survey site. Their results indicate that social influence is significant positive predictors of internal auditors' intention to use audit technology. In social influence dimension, Gonzalez, Sharma and Galletta (2012) explained that internal auditors' perception of social influence originates from their peers and superiors. It is their decision on whether to implement the audit technology. Thus, the following hypothesis is proposed:

**H3: Social Influence positively affects behavioral intention of small and medium practices in Peninsular Malaysia to adopt CAATs.**

### *2.4 The Relationship between Facilitating Conditions and Behavioral Intention*

Previous research done by Tan, Chong, and Lin (2012) investigated the factors that influence the intention to use internet marketing among Malaysians and South Koreans. Their target respondents are 150 Malaysians and 150 South Koreans. The data collection method used by them was convenience-sampling method through using the self-reporting questionnaires by target respondents. Multiple regressions were used to analyse the result of the study. The result of their study shows that facilitating condition is a construct that is significantly related to the intention to use internet marketing by both Malaysians and South Koreans and it is necessary in order to promote the young generation about internet marketing. The second empirical study conducted by Dwivedi, Khoubati, and Williams (2007) was to examine various attitudinal, normative and control factors affecting the adoption of broadband internet in Pakistan. The target respondents are the citizens who used the broadband facility. The data collection method was snowball or chain sampling

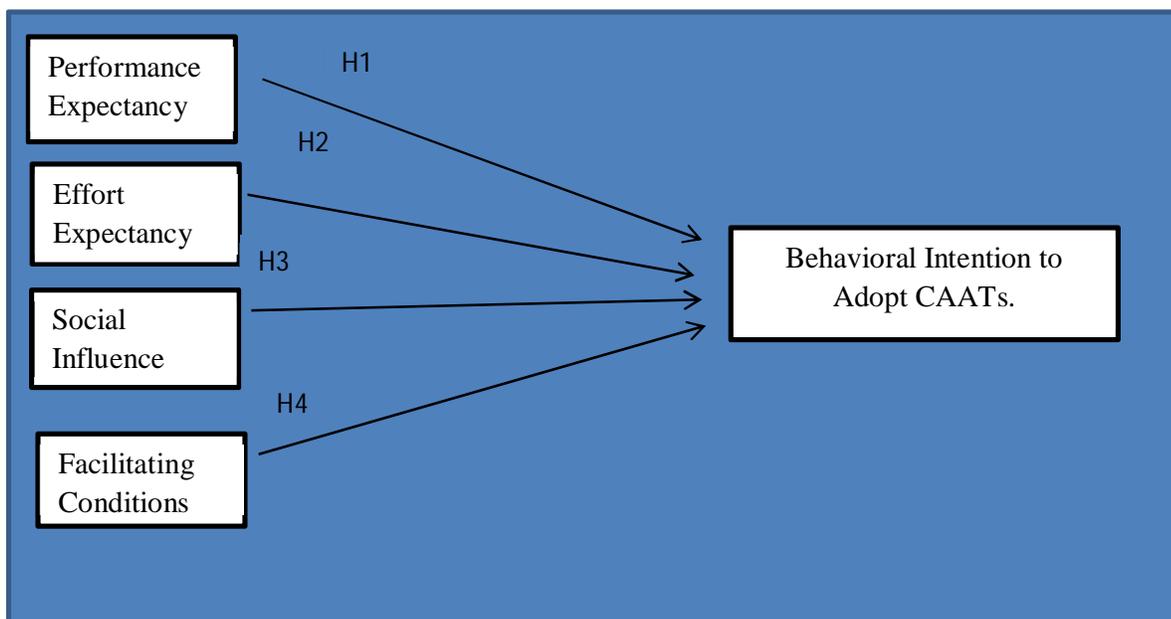
techniques. The findings of their study stated that facilitating conditions resources emerged as significant factor that influence consumers' behavioral intention to adopt broadband. In facilitating conditions dimension, Venkatesh, Morris, Davis and Davis (2003) had explained that facilitating conditions is the degree to which an individual believes that an organizational and technical infrastructure exists is to support the use of system as cited in Aoun et al. (2010). However, Tan, Chong, and Lin (2013) also proposed other conditions include costs and other resources, and the prior knowledge that users must have before adopt the technology. Thus, the following hypothesis is proposed:

**H4: Facilitating conditions positively affects behavioral intention of small and medium practices in Peninsular Malaysia to adopt CAATs.**

#### 2.4 Conceptual framework

The above discussion leads to the following conceptual framework of this research.

Figure 1: Conceptual framework



Adapted from: Tan, Chong, & Lin (2012).

Figure 1 shows the conceptual model of the study. Four dimensions of UTAUT such as performance expectancy, effort expectancy, social influence, facilitating conditions serve as the independent variables. Behavioral intention remains as the dependent variable to be tested for this study.

### **3.0 Research Methodology**

The target respondent in this research is SMPs in Peninsular Malaysia. The reason of choosing SMPs is these firms face the challenges of technology adoption generally according to Transforming SMPs in 2015. Besides, this research believe that it may help SMPs to gain competitive advantages by using technology in their daily audit work. There are 1260 small and medium practices in Peninsular Malaysia (Member Firm Directory, 10<sup>th</sup> September 2016). This

research use probability sampling since the population is known which can be found from the MIA website. Furthermore, this research use cluster sampling which focuses on three geographical areas such as Kuala Lumpur 496 firms (39.8%), Johor 132 firms (10.6%) and Penang 113 firms (9.1%) as these three areas are where the majority firms located. These three areas have represented 59.5% of total audit firms in Peninsular Malaysia and this research can have different areas of feedback from the north and south part of Peninsular Malaysia. This research randomly distribute survey questionnaires to the audit firms in selected areas. Based on the Hinkin (1995) study for calculating sample size, it can be identified through items to response ratios range from 1:4 to 1:10 for each set of scale to be factor. A minimum of 80 respondents is considered enough for this study as this study have total of 20 items.

The questionnaire consist of three sections. It starts with a brief description about the purpose of the survey and how to answer the questionnaire. The second section contained basic demographic characteristics such as gender, age, measures for assessing the usage of CAATs experience. In the third section, participants need to answer on the five constructs of the model: performance expectancy, effort expectancy, social influence, facilitating conditions and behavioral intention (Mansour, 2016).

This study measure variable by using interval method by rating the satisfaction level. The scale of measurement that used is a five-point Likert scale, ranging from strongly disagree (1) to strongly agree (5). The five-point Likert scale used because it is most widely used in the survey questionnaires.

### **4.0 Findings, Results and Discussions**

This chapter will discuss the statistical analysis and major findings of this research.

#### *4.1 Demographic Profile of the Respondents*

The demographic profile of the respondents was presented in the below table including age, gender, race, education level, working experience and CAAT usage. 120 sets of questionnaires were usable and the results as follows:

Table 1: Demographic profile

Demographic profile	Frequency	Percentage (%)
<b>Age Group:</b>		
21 – 30 years old	80	66.67
31 – 40 years old	21	17.50
41 – 50 years old	13	10.83
51 years old and above	6	5.00
<b>Total</b>	<b>120</b>	<b>100.00</b>
<b>Gender:</b>		
Male	41	34.17
Female	79	65.83
<b>Total</b>	<b>120</b>	<b>100.00</b>
<b>Race Groups:</b>		
Malay	9	7.50
Chinese	84	70.00
Indian	27	22.50
Others	-	-
<b>Total</b>	<b>120</b>	<b>100.00</b>
<b>Education Level:</b>		
Diploma	51	42.50
Bachelor Degree	49	40.83
Master Degree	-	-
Doctorate Degree	-	-
Professional Status	20	16.67
<b>Total</b>	<b>120</b>	<b>100.00</b>
<b>Experience:</b>		
Less than 3 years	30	25.00
4 – 6 years	50	41.67
7 – 9 years	14	11.67
More than 10 years	26	21.67
<b>Total</b>	<b>120</b>	<b>100.00</b>
<b>CAATs usage:</b>		
Yes	30	25.00
No	90	75.00
<b>Total</b>	<b>120</b>	<b>100.00</b>

Table 1 shows the frequency and percentages of the four age groups of the respondents. There are 80 (66.67%) of the respondents are between 21 to 30 years old, 21 (17.50%) respondents are between 31 to 40 years old, 13 (10.83%) respondents are between 41 to 50 years old and 6 (5.00%) respondents are 50 years old and above. This result indicate that most of the respondents are between 21 to 30 years old. The table also illustrates the frequency and percentages of the gender. From 120 respondents, 41 (34.17%) are male and 79 (65.83%) are female respondents. The percentage of female is higher than male respondents by

31.66%. There are four race groups of the 120 respondents which 9 (7.50%) respondents are Malay, 84 (70.00%) are Chinese and 27 (22.50%) are Indian. This result also indicates that majority of the respondents is Chinese respondents which consists of 70% of total respondents.

This table also presents the frequency and percentage of the education level of the respondents. There are 51 (42.50%) of the respondents are Diploma holder, 49 (40.83%) of the respondents are Bachelor Degree holder, and 20 (16.67%) of the respondents are Professional Status holder. From the result, the majority of the respondents are holding Diploma and Bachelor Degree qualifications. Besides, Table 1 exhibits the frequency and percentage of respondents' working experience in the company. The result indicates that there are 30 (25.00%) of the respondents work in the company less than 3 years, 50 (41.67%) works in the company for 4 to 6 years, 14 (11.67%) works in the company for 7 to 9 years while 26 (21.67%) of the respondents work in the company for more than 10 years. It shows that majority of the respondents work in the company between 4 to 6 years. From the 120 respondents, 30 (25.00%) of the respondents' company using CAAT and the remaining 90 (75.00%) of the respondents' company do not using CAAT. This result shows that most of the respondents' company does not using CAAT, which consists of 75% of the total respondents.

Therefore, according to the 120 sets of questionnaires collected, there are more female (65.8%) respondents compared to male (34.2%) respondents. The age groups of the respondents are concentrated at the range of 21 to 30 years old, which is as high as 66.7%. An equal percentage of the respondents were found to be Chinese and Indian. Most of the respondents are holding Diploma (42.5%) and Bachelor Degree (40.8%) qualifications. Besides, majority of the respondent have 4 to 6 years (41.67%) working experience. Less than half (25.0%) of the respondents have used CAATs in their company and more than half (75.0%) of the respondents' company do not using CAATs.

#### 4.2 Central Tendencies Measurement of Constructs, Reliability and Normality Tests

Appendix 1 demonstrates the central tendencies measurements of each of the constructs. The mean values for PE range from 3.7250 to 3.9750, EE range from 3.4583 to 3.7333, SI range from 3.6833 to 3.8000, FC range from 3.6167 to 3.7500 while BI range from 3.5083 to 3.5750. From this result, it indicates that majority of the respondents chose to be neutral and agree with the items which stated in the questionnaire. Besides, EE2 scores the highest standard deviation of 1.1660 whilst SI4 scores the lowest standard deviation of 0.9325. Based on this result, it indicates that the values of standard deviation for all variables are above 0.9 but less than 1.1660. Table 2 shows the result of reliability test. PE has the highest Cronbach's Alpha value which is 0.863315, while BI has the lowest Cronbach's Alpha value which is 0.748508. All variables are above the acceptable value of 0.7. Hence, the result shows that all variables have strong reliability and validity of the scale of measurement.

**Table 2: Reliability Statistics**

Variables	Constructs	Cronbach's Alpha	Number of Items
IV 1	PE	0.863315	6
IV 2	EE	0.859855	4
IV 3	SI	0.805819	4
IV 4	FC	0.756322	3
DV	BI	0.748508	3

Appendix 2 show the normality test results which include skewness and kurtosis values. In terms of skewness, BI 2 has the highest value which is -0.4735858, while PE 5 has the lowest value which is -0.975877. On the other hand, the greatest kurtosis value is 0.52112228 in PE 5 while the smallest kurtosis value is -0.6074756 in BI 2. All the skewness and kurtosis value are within the range of -2 to +2, so it can be concluded that all the constructs are normally distributed in this study.

#### 4.3 Multicollinearity, Pearson Correlation Coefficients and Multiple Linear Regressions

(MLR)

Table 3 shows the outcomes of tolerance and variation inflation factors (VIF) test. All of the tolerance values are greater than 0.10 and VIF values are less than 10. Therefore, there is no multicollinearity problem existed in this study.

Table 3: Collinearity Statistics

Construct	Collinearity Statistics	
	Tolerance	Variance Inflation
Intercept	-	0
PE Average	0.30903	3.23597
EE Average	0.47062	2.12487
SI Average	0.33034	3.02722
FC Average	0.42428	2.35694

According to Wong and Hiew (as cited in Toh, Marthandan, Chong, Ooi, & Arumugam, 2009), the relationship between the variables can be examined by conducting Pearson correlation analysis (PCA). This is because PCA has been used to assess multicollinearity problem. It is important to access multicollinearity because the greater the multicollinearity, the greater the standard errors. When multicollinearity presents, it will be harder to reject the null hypothesis (Multicollinearity, 2015). Table 4 shows the result of Pearson correlation analysis. The highest correlation value is found between PE and SI with a value of 0.77320, which below correlation value of 0.80. Thus, there is no multicollinearity problem among the independent variables (IVs).

Table 4: Pearson Correlation Coefficients Matrix

Variable	PE	EE	SI	FC
PE	1.0000	-	-	-
EE	0.69641	1.0000	-	-
SI	0.77320	0.66688	1.0000	-
FC	0.71357	0.58603	0.71151	1.0000

According Mansour (2016), an adjusted  $R^2$  of 45% has been generated in his research regarding external auditor's intention to adopt CAAT. The adjusted  $R^2$  value in his research illustrates that the intention to adopt CAAT in audit process can be explained by all his 4 IVs. From Table 5, it has shown that adjusted  $R^2$  value of this study is 61.25%. Hence, it can be concluded that BI on CAAT adoption can be explained by all ther 4 IVs in this research since it is the nearest adjusted  $R^2$  value with Mansour's study. On the other hand, the remaining 38.75% can be explained by other elements, which are not included in this study.

Table 5: Model Summary

Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Standard Error of the Estimate
4	0.54372	0.6255	0.6125	0.29563

Table 6: Parameter Estimates of Construct

Construct	df	Parameter Estimate	Standardized Estimate	Standard Error	t	Pr >  t
Intercept	1	-0.06408	0	0.26549	-0.24	0.8097
PE	1	0.43736	0.39907	0.11251	3.89	0.0002
EE	1	-0.06530	-0.06974	0.07790	-0.84	0.4036
SI	1	0.31204	0.27411	0.11303	2.76	0.0067
FC	1	0.26661	0.24954	0.09361	2.85	0.0052

From Table 6, PE (p=0.0002), SI (p=0.0067) and FC (p=0.0052) have significant and positive effect on the external auditor's BI to adopt CAAT as the p-value is less than 0.05. In other words, H1, H3 and H4 are supported. On the other hand, EE (p=0.4036) do not have significant influence on BI. This showed that H2 is not supported. Consequently, MLR equation is formulated as below:

$$BI = -0.06408 + 0.43736 PE - 0.06530 EE + 0.31204 SI + 0.26661 FC$$

Hence, based on the outcomes, PE, SI and FC have a positive and significant relationship with BI. In other words, this indicated that H1, H3 and H4 are supported. On the other hand, EE was found to have insignificant relationship with BI. This showed that H2 is not supported.

The result from data analysis shows that performance expectancy is positively influence the behavioral intention to adopt CAATs in Peninsular Malaysia. This is in line with previous studies of Aoun et al. (2010), Tan and Lau (2015), and Celik (2015) which indicates that performance expectancy is positively related to behavioral intention. External auditors feel that by adopting CAATs in their work will help them to improve their tasks. It may help them to complete their tasks in shorter time. Productivity can be increase when workloads are being done more effectively and efficiency. This leads to positive perception of auditors and reinforce their behavioral intention to used CAATs. Hence, H1 is supported. The results of this study show that effort expectancy is insignificant to the behavioral intention to adopt CAATs. It is conflicted with previous findings of Ahmad, Markkula and Oivo (2013), Im, Hong and Kang (2010), Mohammadyari and Singh (2014) which proven that effort expectancy has positive relationship with behavioral intention. The result indicates that effort expectancy will not influence the decision to adopt CAATs. Hence, H2 is not supported.

However, result of the data analysis verified that social influence is positively influence the behavioral intention of adopting CAATs. In the empirical studies of Hsiao and Tang (2013), Gonzalez, Sharma, and Galletta (2012), and Nair, Ali, and Lim (2015), social influence has positively affect the behavioral intention. Top management, seniors, peers and superiors play an important role to influence each other in adopting CAATs. They are likely to take the opinion of people in their surrounding such as their colleagues into consideration. Besides, it is found that top management and seniors usually have the highest authority to make decision of adopting CAATs. They have the power to make decisions and put CAATs into practices. Hence, H3 is supported. This study also reveals the outcome that facilitating conditions have significant influence on the behavioral intention to adopt CAATs. The results are consistent with the past research of Tan, Chong, and Lin, (2012), Dwivedi, Khoubati, Williams, and Lal (2007), and Mtebe and Raisamo (2014) where facilitating conditions can influence the behavioral intention. The available resources in a company such as the infrastructures may affect the intention of auditors to use CAATs in the work place. It included the technology available in the company and how frequent the software is updated. Moreover, auditors must acquire the skills and knowledge of using CAATs. When they own and perceived the relevant knowledge and adequate resources, they might have the intention to adopt CAATs. Hence, H4 is supported.

## **5.0 Implications of the Study, Recommendations and Conclusion**

### **5.1 Implications of the Study**

The theory of UTAUT model is relevant to explain BI of SMPs in Malaysia on CAATs adoption. The adjusted  $R^2$  value is 0.6125 which implied that all the four independent variables can explain 61.25% of the changes in BI of CAATs adoption of audit firms in Peninsular Malaysia. Furthermore, three out of four constructs which are PE, SI and FC in UTAUT model were proven to be vital to the BI in the CAATs adoption. Thus, suitability and justifiability of UTAUT in the study related to CAATs adoption can be illustrated. Moreover, this study will be affluent in the CAATs adoption by SMPs in Peninsular Malaysia. There are finite theory-based studies which probe BI of SMPs (external auditors) on CAATs adoption by UTAUT model. Majority of studies served preceding model like TAM in the related research. Hence, this study definitely will contribute to future researcher as a reference.

Overall, UTAUT model is significant to business practitioners who are involved in selling CAATs software. This study concluded that PE is the most significant factor that have impact on BI of CAATs adoption, followed by SI and FC, while EE is not significant. Business practitioners might draw most attention to PE to ensure the functions of CAATs fulfil the needs of SMPs. Practitioners should deliver useful CAATs information from time to time via newspaper, magazine, online, and advertisement to enhance the speed, productivity and quality audit work in SMPs. They should also pay attention to SI to escalate number of top management, audit engagement team, senior managers and firm who influence audit users to use CAATs. The marketers can promote the advantages of CAATs via social network to influence the audit users.

In terms of FC, SMPs should upgrade and enhance the facilities periodically to promote the usage of the CAATs. Technical facility and support like WIFI should be provided and internet connection should be excellent. This can help the audit users to upload and download CAATs related file from internet easily and consistently update the version of CAATs. Since EE is not significant, business practitioners should explore the approaches that are able to improve this barely insignificant variable. CAATs developer should design CAATs as an easy access application or program and eliminating all the ambiguity operating process in order to convince audit users to use CAATs.

### **5.2 Recommendations for Future Research**

The target respondents can be extend to other states in Malaysia because firm's location might also become an important factor that influences the CAATs adoption due to the resources available. Besides, future researchers should consider extending the UTAUT model by adding in other factors such as organization culture. Organization culture is a system of shared assumptions, values, and beliefs, which governs how people behave in organizations. Therefore, it may influence the behavioral intention of an audit firm to adopt CAATs. In addition, longitudinal approach can be employed instead of cross-sectional approach. Longitudinal approach allows researchers to investigate adoption intention in more than one stage. As a result, user behaviour can be estimated.

### **5.3 Conclusion**

This research has helps to enhance the understanding of behavioral intentions (BI) on CAATs adoption. It has fully achieved all of the research objectives and answered all the research questions. Adjusted  $R^2$  value indicated that 61.25% of the changes in BI of CAATS adoption can be explained by the four independent variables. Furthermore, this study has found that PE, SI and FC are significant while EE is insignificant to BI. In conclusion, UTAUT was proven an appropriate model to predict the BI in the adoption of CAATs.

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**APPENDIX**

Appendix 1: Central Tendencies Measurements

Variables		Mean	Standard Deviation
<b>Performance Expectancy (PE)</b>			
PE1	CAATs is a useful tool in audit work.	3.7667	1.0826
PE2	I can complete audit jobs in shorter time by using CAATs.	3.8083	1.0314
PE3	CAATs usage increases my productivity in audit work.	3.7250	1.0205
PE4	I am more likely to be promoted with the usage of CAATs.	3.8500	1.0741
PE5	I spend less time on routine tasks with the help of CAATs.	3.9750	0.9827
PE6	My audit work's quality is improved with the use of CAATs.	3.9167	1.0091
<b>Effort Expectancy (EE)</b>			
EE1	I can understand CAATs well and has a clear direction while using it.	3.5750	1.1051
EE2	I can acquire the skill of using CAATs easily.	3.4583	1.1660
EE3	I can use CAATs easily with less effort.	3.5583	1.0908
EE4	I can learn the process of using CAATs easily.	3.7333	1.0826
<b>Social Influence (SI)</b>			
SI1	Top management would think that I should use CAATs.	3.8000	0.9579
SI2	Audit engagement team would believe that I should use CAATs.	3.7083	1.0240
SI3	My firm senior managers would be collaborate (work together) in the use of CAATs.	3.6833	0.9437
SI4	My firm has supported the use of CAATs.	3.7667	0.9325
<b>Facilitating Condition (FC)</b>			
FC1	The resources required for using CAATs are available for me.	3.7500	1.0063
FC2	I have enough knowledge required to use CAATs.	3.6167	0.9543
FC3	Assistance with CAATs' difficulties is always available for me by an individual or group of technician.	3.6833	1.0289
<b>Behavioral Intention (BI)</b>			
BI1	I plan to use CAATs in the future.	3.5083	1.0846
BI2	I forecast I would use CAATs in the coming future.	3.5083	1.0768
BI3	I am going to use CAATs soon.	3.5750	1.0505

Appendix 2: Normality Statistics

<b>Constructs</b>	<b>Items</b>	<b>Skewness</b>	<b>Kurtosis</b>
PE	PE 1	-0.8139725	0.08401138
	PE 2	-0.6804588	-0.2659893
	PE 3	-0.8223689	0.44007599
	PE 4	-0.7709879	-0.1671357
	PE 5	-0.975877	0.52112228
	PE 6	-0.8786619	0.38161091
EE	EE 1	-0.4970785	-0.4925479
	EE 2	-0.5445459	-0.5193238
	EE 3	-0.5468499	-0.2805078
	EE 4	-0.6206799	-0.2872508
SI	SI 1	-0.7536202	0.21406003
	SI 2	-0.6273142	-0.1641181
	SI 3	-0.544307	-0.2991505
	SI 4	-0.7805318	0.36852734
FC	FC 1	-0.635294	-0.2276562
	FC 2	-0.5174529	-0.1870114
	FC 3	-0.6475217	-0.2023636
BI	BI 1	-0.6044578	-0.3345942
	BI 2	-0.4735858	-0.6074756
	BI 3	-0.6659993	-0.136874