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TECHNOLOGY ADOPTION: ARE THE SMALL-MEDIUM SIZE AUDIT FIRMS READY?

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ABSTRACT

Technology in this Fourth Industrial Revolution (IR4.0) keeps changing and moving very fast. Technology is transforming some aspects of society as well as the working industry. The area of auditing is at a crucial moment. Independent audits continue to be conducted annually, which rely primarily on historical data for the review and reporting routines. Because of the changes, investors, audit committees, regulators, and other stakeholders' expectations regarding the use of technology advances in the nature of the audit are rapidly evolving. Big firms' audit already makes significant changes and evolve accordingly with technology to ensure they boost customers' confidence with their initiative by using an advanced technological system as their audit tools. However, small and medium audit firms recorded a significant number of zero technological development which enlarge their gap with big audit firms. Previous research is focusing more on the technology in big firms. The study is inadequate on technology adoption in small-medium audit practices. In accordance with these matters, this study aims to examine the relationship between technology complexity, top management commitment, and industry pressure on the adoption of technology in small and medium audit firms. This research provides primary data by using a self-administration survey that originally come from 96 auditors from small and medium audit firms in Klang Valley areas. Statistical studies such as descriptive analysis, correlation analysis, and regression analysis have been carried out. The result of this study indicates that top management commitment and industry pressure have a significant influence on the adoption of technology in audit SMPs. However, the technology complexity reported has an insignificant influence on technology adoption in small and medium-sized audit practices in Malaysia. Thus, this research contributes to the audit industry, audit profession, decision-makers, government, and policymakers by presenting evidence on factors that could influence the adoption of technology in small and medium-sized audit practices.

Keywords: *Technology adoption, Small-medium size audit firms, Industrial Revolution (IR4.0), Technology advanced system, Top management commitment.*

1. INTRODUCTION

For decades, information technology (IT) has been prevalent around the world, with rapid changes in customer demand and the need to cope with competitors. Compete to deliver better service at a reduced cost in good time. As an industry with a high workforce, audits need coherence and effectiveness to increase the productivity of the auditor during the audit process. The use of IT should, therefore, improve productivity in the audit process, provide quicker communication, and guarantee customer data security (Pham et. al., 2018).

In most businesses, qualified audit services provided by public accountants is necessary to ensure that financial results are accurate and fair to businesses (Ismail & Sobhy, 2009). Auditors must gather and review audit proof to see if business transactions have been handled correctly by their business customers. As information technology (IT) expands, businesses are increasingly embracing AIS to handle their business processes. Audit companies must also be able to audit AIS and use audit technology as a support tool for the audit of the businesses of their clients.

In view of these conditions, the audit profession is ready for rapid changes (Lombardi et. al., 2015). Organizations are more than ever generating and analyzing data. Intelligent use of the latest technology combined with the audit professionals 'existing knowledge and experience will make it possible to deepen the financial aspects of an organization and to provide insight into better decision-making, better quality audits, and essentially value for their customers (KPMG, 2017). The area of auditing is at a crucial moment. Independent audits tend to be carried out periodically, which rely primarily on historical data for the review and reporting routines.

As a result of the reforms, customers, audit committees, regulators, and other stakeholders' perceptions about the use of technological developments on the nature of the audit are rapidly changing. Through the survey conducted by the International Federation of Accountants (IFAC) in their Global SMP Survey 2018, it had been stated that most big accounting firms are now making significant investments in the development of data analytics tools and methodologies for home-grown audits to differentiate themselves from the competition, meet customer demand and meet shareholders ' expectations. These advances and benefits must still be achieved by small and medium-sized audit practices (SMPs). Major investments including human capital, software, and hardware are needed as well as resource growth. Large audit firms are investing heavily in the development of customized and branded advanced data analytics tools, but for many audit SMPs, these pioneering hardware and software investments are expensive and simply beyond their available resources.

Other than that, it is stated that over one-third (36%) of Small Medium Audit Practices (SMPs) in Malaysia reported zero technological development is worrying. This figure is greater than in Asia as a region (25%) and globally (26%) which could affect the competitiveness of Malaysia, particularly as the digital economy and the Fourth Industrial Revolution (IR4.0) expand.

Janvrin et al. (2008), support this nation that the use of audit technologies varies depending on the size of the organization. Sundgren and Svanstrom (2010) state that in non-big four companies, audit quality is considerably lower. It is primarily because a single-wide customer fee extends to the auditor and impacts audit efficiency adversely (Craswell et al., 2002). Differences in company-size audits compared to the finding that large companies, Big 4 companies, are likely to be deprived of capital and technological investment.

Although audit technology advantages are widely identified (Ismail & Abidin, 2009), only 21% of audit firms are using audit technology. Past literature found that the most recent research

on audit technology adoption has concentrated on individual internal auditors within organizations (Huang, Hung, & Tsao, 2008; Mahzan & Lymer, 2009; Mahzan & Veerankutty, 2011). Although these studies have provided insight into the impact of audit technologies, the main factors concerned were investigated from the auditor's perspective (Rosli et. al., 2016).

Technology now also provides the ability to undertake better audits for its present purpose in the traditional context. Closing the expectation gap in audit reports found that 55% of the public in all 11 countries consent to prevent corporate failure if auditors comply with the current audit requirements (ACCA 2019a). Moreover, 70% expect that audits must improve to ensure that businesses do not fail. While some may argue that such anticipations are impractical, technology may contribute at least partly to meeting potential public demand. Overall, as the business climate is rapidly evolving, accounting standards are evolving, and regulatory system developers are facing rising challenges. According to the data on the website of the Malaysian Institute of Accountants (MIA), there are more than 1000 audit companies in Malaysia, ranging from the smallest entity to the largest with more than 1000 employees. Increasing numbers of Malaysian audit companies indicate a strong and competitive market.

With the recognition of their role in supporting SMEs, IFAC has launched several projects to address the needs of SMPs. Blackburn and Jarvis (2010) indicate that audit SMP research is very limited and, therefore, a great deal of work is required to enhance the continuing acquisition of SMP information. Blackburn and Jarvis (2010) indicate the research that is focusing on SMPs is very limited, and therefore a great deal of research is required to improve a steady build-up of knowledge about SMPs. Hence, the main objective of this study is to investigate factors that may affect the technology adoption among audit SMPs in Malaysia. More specifically, the research objectives for this study are to determine whether technology complexity influences the adoption of technology in audit SMPs; to examine top management commitment to influence the adoption of technology in audit SMPs and to identify industry pressure that influences the adoption of technology in audit SMPs.

2. TECHNOLOGY ADOPTION

The world is changing quickly, and just in the last decade, we have seen a vast array of innovations take just about everything to the next level. Technology provides ways to use production, design, quality systems, etc. efficiently and effectively through businesses. People resist innovation, however, because they do not know how to use it or believe they cannot use it and resist growth. (Celik & Bindak, 2005). With advanced technology-based accounting systems, it is important to ensure that the audit process is consistent with these technologies. Automation through auditing processes of information technology has thus gained considerable significance, through the consistency and efficiency of audits (Guven & Ertaş 2008).

Globally, the effect of technological advancement is being stepped up by businesses, the audit industry, professional authorities, and regulations. Technology advancement will offer clear benefits to financial inclusion and lessons from operational efficiency. For example, the auditor can analyze large amounts of structured and un-structuring data relating to a company's financial information by using new technology techniques. Such capacity can allow the auditors to check 100% of the transactions of an organization rather than just a population sample.

Malaysia's Auditor General, Tan Sri Ambrin Buang put into words in his recent concern on the under-utilization of audit technology among the auditor in the public sector (Ambrin Buang, 2015) and most of them are still focusing on the traditional control of information technology (IT) rather than advanced IT control (Mahzan & Veerankutty 2011). Rosli et al. (2013), found that the study indicates lower usage of audit technology by external auditors.
The auditing profession is typically facing growing challenges as market conditions become complex, accounting standards change, and regulatory frameworks are becoming more

stringent. The large number and competitive competition within the industry are demonstrated by many audit firms in Malaysia and due to that large audit firms have made major investments in IT to create and sustain their competitive advantage (Banker, Chang, & Kao, 2002; O'Donnell, & Schultz, 2003).

2.1 Technologies for Audit Firm

The audit and finance were significantly affected by artificial intelligence (AI) advances, data analysis, and blockchain technology. In January 2016, Klaus Schwab, the founder and managing director of the World Economic Forum, said We are engaged in the Fourth Industrial Revolution, portrayed by a bunch of diverse new technology that will radically change the way we live, work, and interact. The transition of computer-based accounting systems with experienced technical advancement also has influenced systems for accounting audit and the shift to audit techniques is crucial. In this way, computer-related audits of these electronic environments have become important in companies in many areas from the performance of the daily business of companies to the development of financial tablets, processing, and storage of data. Rapid technological advances are prompting accounting firms and organizations to invest in software to keep them up-to-date with the latest technology (Smith et. al., 1997). The developments in high-tech auditing tools by public accounting firms would make it easier for auditors to carry out their duties. According to Masli et al. (2010), the new audit quality specification has increased the need for technology-based audit procedures. When digitization becomes more business-focused, auditors have to rapidly embrace analytics (Protiviti, 2018). Although the benefit of IT audit procedures is widely accepted, some auditors are still failing to perform technological audit tasks. Moreover, academic scholars are showing that technology-related auditing is slower in adoption (Smidt et al. 2018; Bierstaker et al. 2014; Ahmi & Kent 2013) and this is backed by professional literature, which indicates that auditors do not achieve sufficient technology advancement and technology-enabled auditing performance, as well as analytical use in auditing, are still poor (Protiviti, 2018).

In the last two decades, while IT has increased exponentially over businesses, few studies look at the use of IT, particularly outside the largest audit companies. (Banker et al., 2002; Janvrin et al., 2008). It is argued that the inability of smaller audit companies to compete with larger companies with respect to IT resources may have contributed to possible entry barriers and an increase in audit quality and effectiveness problems (Janvrin et al., 2008). IFAC has taken several initiatives to address the needs of SMPs in recognition of the importance of SMP in supporting SMEs.

2.2 Technology-Organization-environment (TOE) Theory

The theory used in this study is the Technology-Organization-environment (TOE) Theory (Tornatzky & Fleischer, 1990). The theory describes the entire innovation cycle that ranges from scientists and developers creating technologies to embracing and implementing these innovations by consumers in a company environment. The TOE structure for the introduction and application of technologies is a component of this process. The TOE paradigm is a theory at the organizational level demonstrating that three distinct elements of a company's history influence decisions on adoption. Besides looking at the individual employee factor, there are other aspects that companies need to consider. The technological, organizational, and external environment of companies are important factors that can influence the decision to adopt the technology. The three components are the context of technology, the organizational context, and the environmental context.

Previous studies cover the factors that lead to the adoption of technology in the context of individual employee factors in terms of perceived usefulness and perceived ease of use. As

suggested by Delone and McLean (2003), "Researchers must also consider the nature, extent, quality, and appropriateness of the system use". While technology may be viewed as useful and advanced, an organization cannot implement the technology if it does not meet the audit task requirements. In addition to analyzing the individual worker element, the TOE discusses the fundamental aspects that businesses need to tackle. It defines three elements of the business context, which affect the mechanism by which technological innovation is introduced and implemented.

The research framework of this study focused on the relationship between independent and dependent variables. The three independent variables are; 1) technology complexity, 2) top management commitment, and 3) industry pressure. Hence, the independent variables were supported and can be explained by the element of TOE theory. These factors may influence the technology adoption in small-medium audit practices in Malaysia.

3. HYPOTHESES DEVELOPMENT

3.1 Technology Complexity

Technologies that are not easy to use and require a number of steps by step processes may make the use of the applications difficult for the respondent. (Kim et al. 2009). With the increasing complexity of technology systems, people are still required to manage them, and business companies that consider IT too complicated will probably not adopt the technology (Roger, 2003). There are several steps to improve the technology used for auditors but there is still limited IT use among auditors (ACCA, 2019). Technology advancement is revolutionizing almost every aspect of the daily routine and operation of the business. However, despite the advantages of audit technologies, the implementation among public accounting firms is not widely used (Curtis & Payne, 2008). Based on a study conducted by Roger (2003), the study indicates that companies that see an IS / IT as too complex will probably refuse to adopt the system. Wischmann et. al. (2019) identifies that the second major obstacle to the adoption of Industry 4.0 in SMEs is the lack of employee knowledge of the technology system. From the previous study, employees with inadequate knowledge will tend to avoid technology adoption because they think the system is too complex to be adopted.

In general, an accounting information system (AIS) is a computer-based method of monitoring accounting operations through IT services. The audit firm uses the AIS system to collect, store, and process accounting and financial data. One of the key challenges to the introduction of AISs is the difficulty of AIS technologies (Abate, 2019). Studies by Edison et. al. (2012) of the factors affecting the adoption of AIS have shown that the complexity of AIS is negative. Likewise, Venkatesh et al. (2003) found that the nature of IT impacts decision-making on the adoption of AIS technology. The main obstacle to innovation acceptance and usage is broadly understood as uncertainty. According to hypotheses, the possibility of innovation being introduced is less likely if the expected innovation is viewed as complex. Therefore, we believe that technology complexity will give an insignificant influence on the adoption of audit technology.

H1: *Technology Complexity has an insignificant influence on technology adoption in audit SMPs*

3.2 Top Management Commitment

Top management commitment refers to the level of involvement, guidance, and support of top management in audit firms in audit technology adoption. The chances of Internet adoption in an audit firm could be higher if the top management sponsors its adoption at the

office. The adoption of technology in the business involves the decision and support from the top management. Here we can say that the management itself plays an important role in the context of technology adoption in audit SMPs. In the context of technology adoption among auditors, the partners of the business also play a major role in encouraging their employees to embrace the audit software in the sense of technology adoption (Curtis & Payne, 2008).

Top management support in the decision on technology adoptions in an organization was found important. (Bradford & Florin 2003; Mahzan & Lymer 2009; Ramamurthy & Premkumar 1995). Shih (2004) argues that management regulation is a central element in the organizational use of technology. Even though technology could provide tremendous benefits to the profession and business, without support from the top management, the value could not be reached. Lee et al. (2006) also suggest that management support is positively related to the acceptance of the technology. Management of an organization that does not engage in pre-adoption preparation and supports the introduction of audit technologies would not give a good path to technology adoption. Young and Jordan (2008) attribute their finding to a management effect on new technology deployment and use. Likewise, Hallowell and Gambatese (2011) conclude that efficient management support allows creativity to be applied.

Several IT scientists have found a strong link between the implementation of the technology and owner support (Damanpour et.al. 2012; Al-Qirim, N. 2007; Premkumar et. al. 1999). A lack of support from top management might hinder the adoption of new technologies. As stressed in the previous study, auditors would have a preference to use audit technology if the audit firm's management encourages its usage (Curtis & Payne, 2008). Thus, it is anticipated that the top management commitment will positively influence audit technology adoption.

H2: *Top Management Commitment has a significant influence on the technology adoption in audit SMPs*

3.3 Industry Pressure

Industry pressure can comprise competitive pressure as well as the client's expectation pressure towards the responsibility of the auditors in managing the audit works more efficiently providing more quality of audit accordingly with the rapid changes and innovation of the technology. Competitive pressure refers to the perceived level of pressure within the business environment in which audit firms operate. Competitive pressure is found as a factor affecting AIS adoption (Cartman & Salazar 2011). As stressed by the TOE framework and previous studies, firms are more likely to accept IT when many competitors in its industry are adopting the technology (Iacovou et al. 1995; Tornatzky & Fleischer 1990; Zhu et al. 2003).

The nature of competitiveness and a high degree of competition between companies appears to increase the possibility of acceptance of innovation with a view to achieving a competitive advantage in the market (Abeta, 2018). The more an agency adopts and uses AISs, the better the professional and competitive rivals in the industry. The argument regarding the pressure that could increase the possibility of technology acceptance has a lot of empirical evidence from the previous study by Mekasha (2015) ; Al-Qirim (2007); Premkumar et. al. (1999).

KPMG (2017) report analyzes the need for the auditor to keep pace with the changing client's expectations as well as the areas in that the audit needs to be evolved. The outcome stated that nearly eighty percent (80%) of the respondent believes that the auditor needs to use a larger sample in their day-to-day work and seventy-eight percent (78%) of the

respondent support that more advanced data collection and analysis techniques should be used by the auditor. Moreover, from the analysis also, sixty-seven percent (67%) do agree that clients are searching for more professional experts with increased technology skills.

The previous study focused more on the competitive pressure despite the pressure from the client's expectations. Thus, this study takes an overall context of pressure within the industry to measure the effect of technology adoption in audit SMPs. Therefore, we believe that industry pressure will significantly influence the adoption of technology.

H3: *Industry Pressure has a significant influence on technology adoption in audit SMPs*

3.4 Conceptual Framework

The research framework focused on the relationship between independent and dependent variables. There are three independent variables for this study which consist of 1) technology complexity, 2) top management commitment, and 3) industry pressure that might influence the technology adoption in small-medium audit practices in Malaysia. The Independent Variable has been supported by the Technology, Organization, and Environment framework as we can see the variable can be explained by the element TOE framework.

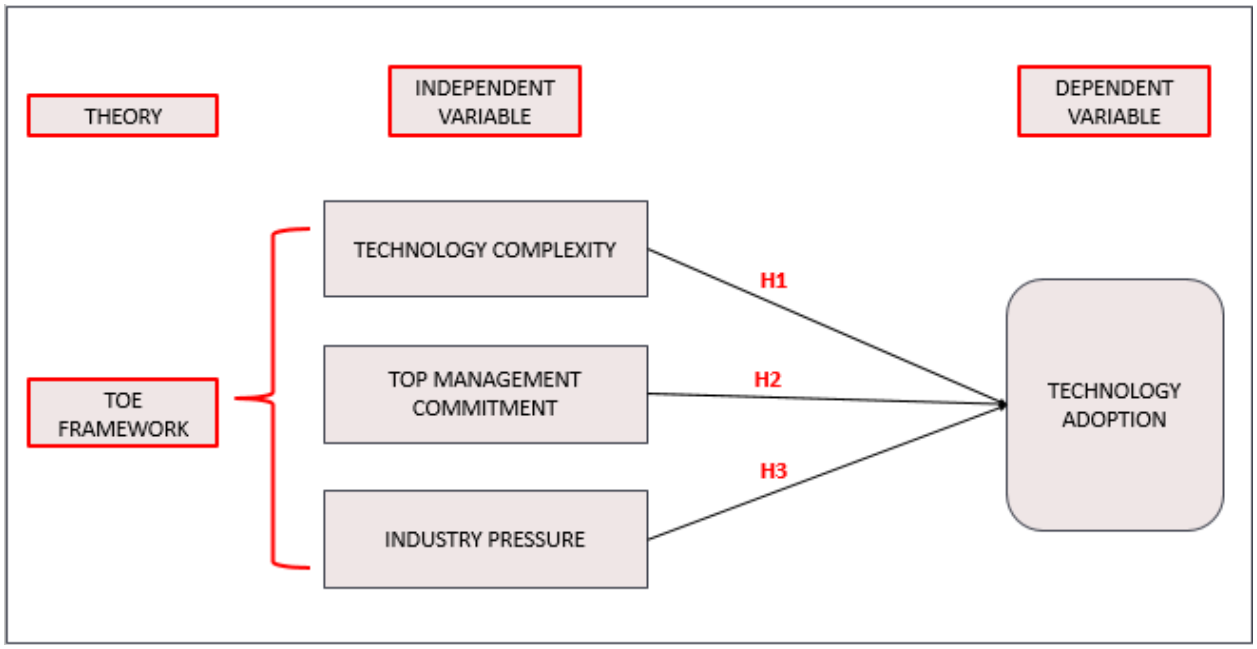

Figure 1.0: The Influence of Technology Complexity, Top Management Commitment, and Industry Pressure on Technology Adoption in Small and Medium Audit Practices in Malaysia

4.0 RESEARCH METHODOLOGY

4.1 Population and Sample of the Study

This study used a survey research questionnaire with a single (cross-sectional) time horizon. This is a quantitative method of research in which it attempts to explore the connection between an independent and dependent variable. The dependent variable in this research was the technology adoption in small-medium audit practices and the independent variables were technology complexity, top management commitment, and industry pressure.

The Malaysian Institute of Accountants (MIA) listing is used as the population frame because MIA is a body that governed all the audit firms in Malaysia.

This study uses individuals as the unit of analysis, and the sample are auditors working in small-medium audit practices located in Klang Valley. The overall number of audit firms in Malaysia is 1,482 firms that are providing audit services and assurance based on the information provided by the MIA website. This study only focused on the SMP firms in Klang Valley as the sample of respondents. The reason was that Klang Valley records the highest number of auditors in Selangor and Federal Territory Kuala Lumpur area with a total of 872 audit firms.

4.2 Instrument of the Study

The tool used for data collection was a survey method used to draw up and distribute a questionnaire. Specifically, self-administered electronic questionnaires that have been distributed randomly through email to the selected participants as it was simple to administer, cheap, quick to deliver, and automatic response processing (Sekaran & Bougie, 2016). In order to clarify the objectives of the survey and study performed, a cover letter was attached to the questionnaire that had been distributed to auditors. It has also been provided to explain the protection of the respondent's confidential information. The cover letter also includes the researcher's contact information in case there are any queries and further explained that the respondents might need it.

4.3 Measurement of Variable

The questionnaires for this study were distributed to 100 auditors employed auditors with small and medium-sized audit firms in Klang Valley. The sample size of the study was therefore explained by Bartlett, Kotrlik, and Higgins (2001). The sample size for this study was approximately 100 people for continuous data with an error margin of 0.03 or an alpha level of 0.05 as well as for a population of more than 600. This sample used purposive random sampling where every auditor in the Klang Valley area will have a similar chance to be selected as a sample or respondent. Each participant was selected and included in the study based on their willingness to take part in the study. The research required some direct connections to fulfill the objectives of this report, the study was conducted in a normal working atmosphere by distributing the respondents with questionnaires.

The questionnaire used a 5-point Likert scale from 'Strongly Agree–1 to Strongly Disagree–5'. The elements in the Likert Scale were found to be more reliable, easier to use, and provide more detail on a true assessment of a respondent (Finstad, 2010). The variable will be calculated and assessed based on the Likert Scale in the questionnaire to measure the findings and results of this research.

The questionnaire consists of five parts or sections that indicate a measurement for each variable. Section A contains general information about the respondents' demographic profile. Section B will measure the technology adoption, while Section C measures the technical complexity that might influence the technology adoption in small-medium audit practices in Malaysia, top management commitment measurement was defined by Section D and lastly, Section E will measure the industry pressure that might influence the technology adoption in small-medium audit practices in Malaysia.

In Section A of the first part of the study, the general information of the respondent is obtained to construct the demographic profile. The respondent is required to provide some

fundamental information for this research which includes the firm's size, firm age, working experience, service provided by the audit firms, awareness of technology adoption, and intention to adopt the technology where the information provided will be helpful to this research in conducting the descriptive analysis. The dependent variable for this study is technology adoption in small-medium audit practices which represents Section B in this study. The instruments were adopted from Rosli et al. (2013). Under this variable, it discusses the frequently used technology in the firms which contain the less advanced or advanced technology system. It also explores more on the facilities that are available in their firms which indicates whether their firms are having sufficient facilities provided in conducting their fieldwork to adapt to the advancement of technology systems in this Fourth Industrial Revolution (IR 4.0). Section C reflects a statement on the technology complexity which measures the degree of difficulty to use and understand the audit technological systems in small-medium audit practices. The instruments were adopted from Rosli et al. (2013) ; Hadi et al (2018); Stentoft et al. (2019). The relevant issues on the complexity of the technology were created based on arguments submitted in past research and adapted to this research. Section D explains the second independent variable of this research. The top management commitment is measuring the degree of top management involvement, contribution, direction, and support given towards the adoption of technology systems in their firms to respond to the Fourth Industrial Revolution's requirements and criteria. The instruments were adopted from Rosli et al. (2013); Haderi et al. (2018). Relevant issues regarding the top management's commitment were created in past research based on arguments. The issues have been altered to fit this research based on the analysis of prior literature. The last Section E in this research is being filled by the last independent variable which is industry pressure. The industry pressure had been selected as a variable to explain the environmental factors that contribute towards the adoption of the technology in small-medium audit practices in Malaysia. Instruments were adopted from Rosli et al. (2013); Habiba et al. (2019). This variable will measure the level of pressure that occurs in the audit industry due to the technological advancement in the Fourth Industrial Revolution.

4.4 Pilot Test

A pilot test was conducted in advance three weeks prior to the distribution of the questionnaires to the selected audit companies in the Klang Valley area. Ten auditors from different levels of skills, different positions, and expertise also auditing experience were screened among small and medium-sized auditing companies for participation in the pilot. The pilot test aimed to ensure that the questionnaire was appropriate for respondents and to identify certain weaknesses. Input from the pilot study helped to strengthen the questionnaire, especially in sections C, D, and E, where some respondents indicated that comments from the auditor's perspective should be worded properly.

4.5 Data Collection and Analysis

This study uses primary sources of data, particularly autonomous electronic questionnaires, distributed randomly to the chosen participants via email. Data collection was carried out between the end of April 2020 and early March 2020. The surveys have been distributed to respondents through an online survey, an easy-to-access survey platform, and they can provide a response anytime and anywhere to the survey. The online survey was used as a method to distribute the questionnaire, as it improves efficiency by saving time. Data are available immediately and can be easily transferred to advanced analytical software or tablets if a more thorough analysis is required. In addition to that, online surveys are more reliable as the margin of error is greatly decreased by participants accessing the program directly through online survey platforms. The findings of the online survey are also available for review. In short, online surveys are an excellent choice because it takes less time to move cheaper, fast

results and data and to address important questions in different applications. Data collected were coded and analyzed in descriptive or non-discretionary statistics. The tests were measured and evaluated using version 22 of Windows IBM SPSS. Several statistical analyses have been carried out for the testing of hypotheses.

This research is using descriptive analysis. Descriptive statistics, also known as univariate analysis, summarized the respondent's responses according to the variables depending on the questionnaire and mostly regarding demographic profiles of the auditors in a small medium-sized audit firm in Malaysia (Rowley, 2014). A reliability test, validity test, and normality test were conducted before the data were run using correlation analysis. This research also performs a correlation analysis. According to Sekaran and Bougie (2016), a correlation analysis is performed to determine the multicollinearity issue among the variables. Therefore, multicollinearities exist if the variable provides redundant information. The interpretation can be either insignificant to substantial results or vice versa under this circumstance. Hence, to assess the multicollinearity between variables, this research used the Pearson Coefficient to analyze the variable.

5.0 FINDINGS OF THE STUDY

5.1 Demographic Profile

Auditors from the small-medium-sized auditing company represented the unit of analysis. The data provided in this study include company size, age of the organization, auditors' work experience, service offered by the audit firms, the awareness of technology adoption, and the intention to adopt the advanced technological system. The findings are provided in this report.

5.2 Firm Size

Firm size is used as the measurement to ensure that the respondent is qualified and compatible with the goal of this study which focuses on small and medium audit firms in Malaysia. As indicated in Table 1.0, of the 96 respondents, 39 (40.6 %) respondents were from small audit firms and the other 57 (59.4 %) were from medium-sized audit practices. This indicates that auditors from both audit companies have therefore been involved in this study. Therefore, the type of company size of respondents is listed in the table below and the largest population in this study was medium-sized audit practices.

Table 1.0: Firm Size

Demographic Characteristic		Frequency	Percentage
Firm Size	Small	39	40.6
	Medium	57	59.4
	Total	96	100.0

5.3 Working Experience

Working experience as an auditor was chosen to provide value-added as one of the demographics in this study. The following table 2.0 indicates the year of work experience as an auditor for the respondent. The survey reveals that most of the participants have less than 5 years of work experience (54.2%), followed by 5-10 years of work experience with 39 (40.6%). The minimum work experience as an auditor is five years and below from the survey can be generalized. This indicates that almost all the respondents were able to provide the

exact details required for this study and had spent a considerable amount of time working with their organizations.

Table 2.0: Working Experience

Demographic Characteristic		Frequency	Percentage
Working Experience	< 5 Years	52	54.2
	From 5 to 10 Years	39	40.6
	> 10 Years	5	5.2
Total		96	100.0

5.4 Awareness

The study revealed that the majority of companies are aware of the latest advanced technologies and awareness of technology adoption. Most respondents indicated that 78 (81.3 percent) of their businesses realize the current state of the advanced technological system. The rest of the respondents reveal that 18 (18.7 percent) of their companies do not know the current technology system. These findings show that, although most companies are aware of the advanced technology system, there are still reported a significant number of companies in this Fourth Industrial Revolution (I.R. 4.0) that are not aware of the present technology system.

5.5 Intention to Adopt

Findings from this study show that most businesses intend to implement advanced technology tools to be used in the area of auditing. Of the 96 respondents, 52 (54.2 percent) have been confirmed to have demonstrated that their company intends to incorporate the advanced technology program. However, many respondents were also recorded with 44 (45.8 percent) who did not intend to use advanced technology systems. It is important for the audit industry, and it shows a significant gap between both technology and the audit profession.

5.6 Instrument Validation

5.6.1 Reliability Test

The study makes use of various findings to assess respondents' expectations of four variables, specifically technology complexity (10 statements), top management commitment (10 statements), industry pressure (10 statements), and technology adoption (11 statements). The use of items for measuring individual expectations (dimensions) includes the reliability or accuracy of the items concerned. The alpha value of high reliability above 0.75 is generally acknowledged as being moderately reliable 0.5 to 0.75 but typically low reliability is seen in table 3.0 (Hilton, Brownlow, McMurray, & Cozens, 2005). The dimensions for Technology Complexity, Top Management Commitment, and Industry Pressure were in the range of .910, .932, and .888, respectively as shown in Table 3.0. Cronbach’s alpha value is .875 for the dependable variable. The score value of Cronbach alpha for all the variables was higher than.75 The Cronbach alpha values have therefore been considered reliable and appropriate for this study. The items may have been used to analyze the data.

Table 3.0: Values of Cronbach's Alpha for Independent Variable (N= 96)

Section	Independent Variables	Total Statement	Value of Cronbach's alpha
C	Technology Complexity	10	.910
D	Top Management	10	.932
E	Commitment	10	.888
	Industry Pressure		

5.6.2 Normality Test

The result of the normality test that covers the value of Skewness and Kurtosis of the Technology Complexity, Top Management Commitment, Industry Pressure, and Technology Adoption was illustrated in table 4.0. We can see that the value of skewness and kurtosis for all the variables lies between -1.327 and 2.061. Data standard, skewness, or kurtosis thumb rules must be whittled down between -3.00 and +3.00 (Mustapha & Siaw, 2012). According to Salleh and Yunus (2015), the thumb rules indicate that if the standard skewness is within the value of -1.96 and +1.96 and the standard value for kurtosis is -2.00 and +2.00, then the data is normal.

Table 4.0: Result for Skewness and Kurtosis (N=96)

Section	Variables	Skewness	Kurtosis
B	Technology Complexity	.871	1.070
C	Top Management Commitment	.866	.607
D	Industry Pressure	1.327	2.061
E	Technology Adoption	-.447	-.512

5.6.3 Correlation Analysis

Table 5.0 shows the result of the correlation coefficient between technology complexity, top management commitment, industry pressure, and technology adoption. The Pearson correlation between technology complexity and technology adoption shows the value is -.101. Such a result indicates the variable has a very weak negative but insignificant correlation. This is because the p-value is .329 greater than .05 (p-value > 0.5). Thus, there is no significant correlation between technology complexity and technology adoption. The correlation value between top management commitment and technology adoption is -.226, an indication that the variable has a very weak negative significant correlation where the p-value is .027 (p-value < .05). Thus, there is a significant correlation between top management commitment and technology adoption in audit SMPs. Table 5.0 indicates the correlation value between technology adoption and pressure from the industry is -.306. The findings indicate that industry pressure has a weak negative correlation but is very significant since the p-value is .002 (p-value < .001). Therefore, it is shown that there is a significant correlation between industry pressure and technology adoption in SMPs practices.

Table 5.0: Correlation Result

		Technology Complexity	Top Mgt Commitment	Industry Pressure	Technology Adoption
Pearson Correlation	Technology Complexity	1	.228*	.331**	-.101
	Top Mgt Commitment		1	.429**	-.226*
	Industry Pressure			1	-.306**
	Technology Adoption				1
Sig. (2-tailed)	Technology Complexity		.025	.001	.329
	Top Mgt Commitment			.000	.027
	Industry Pressure				.002
	Technology Adoption				

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**. Correlation is significant at the 0.05 level (2-tailed).*
***. Correlation is significant at the 0.01 level (2-tailed).*

5.6.4 Multiple Linear Regression

The linear relationship between one dependent variable and two or more independent variables can be examined using multiple linear regression. Thus, this analysis can be used to evaluate the relationship between the independent variables and the dependent variable. Three independent variables, Technology Complexity, Top Management Commitment, and Industry Pressure. Based on multiple regression of the equation model, the result shows in table 6.0 that Technology Adoption is 3.626, holding constant all other variables. Such an outcome indicates that a .004-unit increase in technology adoption can be predicted for every single unit increase in the number of technical complexities. However, when the top management is not providing support and commitment, the adoption of technology among audit SMPs will decrease by .035. Similarly, a decline in the adoption of .103 technologies in audit SMPs can be expected for any unit that raises the pressure in the industry.

Table 6.0: Regression Coefficients

	Unstandardized Coefficients		Standardized Coefficients
Variables	B	Standard Error	Beta
(Constant)	3.626	.112	
Technology Complexity	.004	.033	.012
Top Management Commitment	-.035	.032	-.117
Industry Pressure	-.103	.045	-.260

a. Dependent Variable: Technology Adoption

The summary analysis of regression is shown in Table 7.0. The result shows that the R square value is .105. This demonstrates that 10.5% of the variation in the adoption of technology

among audit SMPs can be explained by the variation in technology complexity, top management commitment, and industry pressure. Yet lower R-squared values do not mean they're not good. The percentage is quite small which means that there may be other factors that could influence technology adoption in small-medium audit practices.

Table 7.0: Summary analysis of regression

	R	*R* Square	Adjusted *R* Square
1	.324[a]	.105	.076

a. Predictors: (Constant), Technology Complexity, Top Management Commitment, Industry Pressure
b. Dependent Variable: Technology Adoption

To assess whether a linear relationship exists between all the considered independent variables and dependent variables, the F-test was performed to demonstrate the model's overall significance. The significant value (p-value) is less than .05ass portrays in table 8.0. It is also recorded that the overall variable is significant (F (3.92) = 3.596, p-value = .017). Thus, we reject the null hypothesis. There is data, therefore, indicating that at least one independent variable has a significant linear relationship.

Table 8.0: ANOVA

		Sum of Squares	*Df*	*Mean Square*	*F*	*Sig.*
1	Regression	.617	3	.206	3.596	.017[b]
	Residual	5.261	92	.057		
	Total	5.878	95			

a.Predictors: (Constant), Technology Complexity, Top Management Commitment, Industry Pressure
b.Dependent Variable: Technology Adoption

The outcome of the regression coefficient for technology complexity reveals that the variable is not significant since the p-value = .909 based on Table 9.0 which the value is greater than .05. The first hypothesis is therefore accepted for this study since it is stated for the first hypothesis which has no significant influence on technology adoption in audit SMPs. The study concludes that there is no significant relationship between technology complexity and technology adoption. Technology complexity does not influence the intention of audit SMPs in adopting technology in their work field. Such findings indicate that regardless of whether the system is complex or not, the adoption of technology is still required for the audit profession and firms. The result of the regression coefficient for top management commitment shows that there is a significant negative linear relationship between technology adoption (t (96) = -1.070, p-value = .027). Therefore, the second hypothesis is accepted.

This study found that a significant relationship exists between the commitment of top management and the adoption of the technology. This could be explained by the fact that top management commitment will give a good path for the firm to implement the technology in their workplace. It is consistent with the study from Lee et al. (2006) that revealed the clear road of a good path to technology adoption will not be achieved if the management does not commit and involve in the preparation as well as support the organization. The result of the regression coefficient for industry pressure is shown in table 9.0 where there is a significant negative linear relationship on technology adoption (t (96) = -2.294, p-value = .024). Hence, it accepts the third hypothesis. This study indicates that in audit SMPs, there is a significant relationship between industry pressure and technology adoption. This may be clarified by the

fact that the increased pressure within the audit industry, could affect the implementation of technology in audit firms.

Table 9.0: Regression Equation Value

Independent Variable	Coefficient Value	*t*-value	*p*-value
Technology Complexity	0.004	.114	.909
Top Management Commitment	-.035	-1.070	.027*
Industry Pressure	-.103	-2.294	.024*
F	3.596		0.017*
R^2	.105		

** Significant at 5% level (2-tailed)*

6.0 DISCUSSION, LIMITATION, AND FUTURE RESEARCH

6.1 Discussion of the Findings

The adoption of technology for Malaysia's scenario in small and medium audit practices is investigated in this study. This study predicts that there is no significant relationship between technology complexity and technology adoption. However, the top management commitment and industry pressure have a significant relationship with technology adoption in audit SMPs. The TOE theory suggests that the economic, technical, and organizational dimensions of technology adoption in audit firms should be taken beyond the individual perspective. The technology is moving quickly and always up to date, with traditional methods that lie a long way behind current technology and pull over the disadvantages of the audit work. The advancement of advanced technology is therefore seen as the main variable that remains important and relevant to the current situation for the auditing company. Thus, technology complexity, top management commitment, and industry pressure that portrays the technology, organization, and environment aspect in the theory of TOE should be the foundation for audit firms to implement advanced technological systems in auditing.

The first research objective is to determine whether the complexity of technology has any significant relationship to the adoption of technology in audit SMPs. Results show that there is no significant relationship between complexity and technology adoption. Roger (2003); Abera (2018); Edison et. al. (2012) support this notion that technological complexity as a factor affecting technological adoption is found to be negative. Regardless of whether the technology is complex, the purpose of audit companies to use technology as an auditing method does not vary. This proves that technology adoption is still needed and carried out by auditing companies even though the system is seen as complex or has a perceived value for ease of use. The argument that technology complexity has no significant influence on technology adoption was supported by Tornatzky and Klein (1982). Complexity has a significant negative relationship with the adoption of technology where the smaller auditing firms need to hire and train new technical staff, rearrange auditing and accounting procedures, and add significant new internal data processing capabilities to ensure that technology adoption happened in the audit firms.

The results of the study also found that there is a significant relationship between the commitment of top management and the adoption of the technology. This finding is supported by prior researchers (Tushman &N adler (1986); Salleh et. al. (2007); Curtis & Payne (2008); Rosli et. (2016). Auditors use audit technology if the management of an audit firm promotes the usage of the systems in the audit firms (Curtis & Payne, 2008). Therefore, to enhance the efficiency of audit technology, management should give priority to the IT strategy. It is important to develop, disseminate, and raise awareness of the strategy of IT in an audit organization. Managers should ensure that the audit firm's technological activities are consistent with the IT policy. Top management support is an important factor in awareness building and encouraging the adoption of advanced technology. Top management should therefore support the implementation of audit technologies by mobilizing the necessary resources and devoting their time and effort to ensuring that their business accounting system is improved and automated.

The findings also found that industry pressure has a significant relationship with the adoption of technology in small-medium audit practices. This result is supported by prior studies Kumlachew (2015), Al-Qirim (2007); Premkumar et. al. (1999); Abera (2018). The industry pressure which comprises competitive pressure and the client's expectation pressure might increase the possibility of the adoption of technology. The reasons may be for the small and medium audit practices to get the opportunity of having a competitive advantage to compete in the market and fulfill the clients. Firms with advanced technology applications and systems may produce quality audit reports to fulfill the expectation of clients and also to compete within the audit market. In summary, the findings of this study support that technology complexity, top management commitment, and industry pressure provided vital evidence that all three factors had a significant impact on technology adoption among small-medium audit practices in Malaysia.

6.2 Limitations and Future Research

This study was carried out with certain limitations. First, the sample for this analysis included auditors from small-medium audit companies that operate within Klang Valley. Consequently, the findings of this study apply only to the Klang Valley Small and Medium Audit firms. The auditors in other states and public sector auditors in Malaysia cannot generalize the results. There is insufficient time for this work. Additional research and analysis may be carried out with more time to complete the report. In this study, merely three variables are examined. Other factors which have not been included in this study may affect the adoption of the technology of the audit firm. Therefore future studies can expand this analysis by adding other factors that affect technology adoption in audit practices. The factors could be in terms of individual characteristics, the efficiency of the auditors, expected individual performance, expected engagement, social impact, facilitating conditions, and much more.

Despite the limitations, this study could provide more opportunities for future studies. The first recommendation is to require a broader auditing population to provide better empirical evidence for future investigations. The final research will analyze the relationship between the constructs to determine the size moderating effect, validate the structures and thus evaluate the modeling of the structural equation and the analysis of the hierarchical regression. Secondly, awareness of the use of auditing technologies in the tertiary education sector should also be recommended. It could encourage new perspectives for competent audit practitioners to take on audit technology by exposing accounting students to essential auditing technology skills. We also found that there is a need for encouragement among professional accounting bodies to increase the adoption of audit technology.

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