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Information Technology in Audit Processes: An Empirical Evidence from Malaysian Audit Firms

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ABSTRACT

This paper attempts to highlight the usage of information technology for auditors at different levels and positions in audit firms in Malaysia. Factors influencing the usage of information technology in the audit processes are also investigated. Questionnaires were distributed to external auditors in Klang Valley. Descriptive statistics and regression analysis were carried out to analyze the data. Telephone interviews were also conducted to support the results. The result indicates that information technology is widely used in the audit processes. Information technology is especially used to generate the audit working papers and audited financial statements and to select samples during audit processes. The results indicate that information technology is mainly used by the senior auditors and audit managers in their organizations. The results appear to suggest that the auditors are motivated to use information technology because it helps to shorten the time of the audit process and get their job done in a more efficient manner.

Keywords: Audit Process, Auditors, Information Technology
JEL Classifications: M42, M15

1. BACKGROUND OF THE STUDY

In today's digital world, technology such as computer and machine is very important to an organization to manage its business and ensure that it runs smoothly and get the works done in more effective and efficient manner (Vasarhelyi and Romero, 2014; Broadbent et al., 1999). Technology has large impact on many areas in business such as designing, engineering, managing and planning (Yang and Guan, 2004). Information technology increases the transaction processing of an organization and leads it to competitive advantage in terms of cost savings, reducing human errors and operational efficiency (Abu-Musa, 2008).

In accounting, technology is broadly used in recording, bookkeeping, generating financial reports, auditing and designing a better costing system for an organization (Cannon and Crowe, 2004). The rapid changes in technology motivate accounting firms and organizations to invest in the technology to ensure that they are up to date with the current technology (Smith, 1997). Among others, emerging information technology can give an impact on the audit process by the auditors. Previous study suggests that auditors need to increase their awareness on usage of information technology in the accounting system and detect the risk cause by information technology systems (Bunget et al., 2009). Because of this, many public accounting firms, especially the big firms, made large information technology investments, primarily in audit software and knowledge-sharing applications (Banker et al., 2002). The investments by public accounting firms in high technology audit software are to facilitate the auditors in conducting their tasks.

When combined with information technology, audit can become more advanced in risk detection compared to the traditional methods which use the manual audit methods to complete the audit procedures (Higgins and Nandram, 2009). It is also claimed that information system is an integral part of the audit process since it complements the auditor's role and supports the auditor's judgment on the quality of the information processed by computer systems (Majdalawieh and Zaghloul, 2009). The emerging information technology is important to the audit processes and it brings both advantages and disadvantages to the auditors at different ranks in different ways (Banker et al., 2002). However, survey

showed that certified public accountants do not frequently and systematically use these computer-assisted auditing techniques in practice (Bierstaker et al., 2001). For example, generalized audit software (GAS) is not on the list of the "common software public accountants used" according to the survey series conducted by AICPA. Another survey indicates that both ex-post and concurrent computer-assisted auditing techniques are used primarily in internal audit settings by proprietary implementation. Even the most commonly installed computer-assisted auditing techniques, integrated test facility, are used only by 5-20% of organizations (Shaikh, 2005). It is also claimed that there are limited studies examine the usage of information technology in the audit environment. Hence, this study is conducted to investigate the auditors' usage of information technology in their audit work. Specifically, the objective of this study is to explore the usage of information technology in the audit processes of Malaysian audit firms.

The remainder of the paper is structured as follows. Section 2 gives a review of the relevant literature and Section 3 describes the methodology used for the study. Section 4 presents and discusses the empirical results and, finally section 5 provides the conclusions of the study.

2. LITERATURE REVIEW

Recent changes in the business environment transformed large organizations into giant multinational corporations. This changing business environment has also signified the need for companies to search for new ways to survive and succeed. Information technology offers the necessary tools for companies to respond effectively and efficiently to these changes. And companies are forced to keep up to date with the new technologies to remain competitive (Spathis and Constantinides, 2004). Information technology evolution has affected the accounting and auditing process in organizations and auditors require a different method and procedure for auditing in a technology driven environment (Chaveerug and Ussahawanitchakit, 2009).

In response to these auditing concerns, many computer-assisted audit techniques and methodologies have been introduced and implemented in Malaysia. For example, Monetary Unit Sampling Plan (MUS) is used by many big accounting firms in Malaysia to perform the sample selecting task to increase the accuracy and select the most relevant samples during the process of gathering the supporting data and document to support the figure in the financial statement (Abdul-Hamid et al., 1996). MUS Plan is also used in the process of selecting samples for audit evidence purposes in other countries. Another software, GAS is used by the auditors to enable them to access the accounts and data stored in different formats that can only be read by GAS in the computer. In addition, this software also enable auditors to gather some important information and evidence from client's master file, which the information is not provided in the reports generated by the client. This allows the auditors to access client's electronic data file and perform their job more effective and efficient (Liang et al., 2001; Shaikh, 2005; Hall, 2013). This proved that the emerging of information technology helps auditors in the audit process. Other than that, some computer-assisted auditing techniques for instance the embedded audit module which is a technique with one or more programmed modules embedded in a host application, subsequent analysis as well as transactions that meet predetermined conditions during the audit process. This can become easier when auditors examine the organization's transaction flows and detect the exceptions in the host application (Hall, 2013). This is supported by Liang et al. (2001) who claims that concurrent computer-assisted auditing techniques such as embedded audit modules and system control audit review file can be installed to examine transaction flows and to detect exceptions on-line, such as suspicious transactions (Liang et al., 2001).

An auditor needs to search a lot of data from internal and external parties of their client's organization. In-depth information searching of the computerized assisted auditing is the capability of the computerized assisted auditing to provide and help to access the auditing information need, information sources and reduce the time response and reliability in retrieving data to be utilized in the audit process. It is claimed that the auditors can access all the information easily with the help of in-depth information searching (Rezaee et al., 2001).

2.1. Advantages of Information Technology on the Audit Process

Information technology is perceived to bring advantages to auditors in the audit process (Shaikh, 2005). Information technology assist auditors getting their work done more efficient and effective, can shorten the time of substantive test during an audit process, and can enhance their productivity.

Several auditing standards suggest that usage of information technology in auditing improves audit efficiency and effectiveness. Computerized assisted auditing includes any use of technology to assist in the completion of an audit and this would include automated working papers and traditional word processing applications as computerized assisted auditing (Braun and Davis, 2003). Auditing standards also encourage auditors to use the computerized assisted auditing to check the accuracy of electronic files and re-perform selected procedures such as aging of accounts receivable (Zhao et al., 2004).

According to previous literature, the usage of information technology in auditing can enhance audit work effectiveness (Chaveerug and Ussahawanitchakit, 2009). Some of the components are in-depth information searching, corrective transaction analysis, comprehensive audit practice, continuous audit process improvement and audit reporting timeliness.

Information technology can help auditors to shorten the time of substantive test in terms of samples selection process. Both statistical and non-statistical sampling methods are allowed for substantive tests in auditing (Higgins and Nandram, 2009). The common use of statistical sampling method computer application in substantive test and test of control during an audit process in selecting sample is MUS (Abdul-Hamid et al., 1996). MUS is a method of statistical sampling used to assess the amount of monetary misstatement that may exist in an account balance.

This method is also known as dollar-unit sampling or probability-proportional-to-size sampling, has been used for many years and is widely accepted among auditors (Johnstone et al., 2014).

With software such as CAATs, GAS and MUS related software, auditors can generally shorten the time of audit process. For example, MUS software can let auditors key-in all the available data and select the samples by using the software. It is faster and easier because the software is designed to run in a group of formula (Abdul-Hamid et al., 1996).

Previous research also claimed that information technology can increase productivity and increase the revenue of audit firm (Banker et al., 2002). There are potential impact of work efficiency and productivity at individual level, business process and work group levels. Although information technology has different impacts on professionals at different ranks, the impacts are all in positive direction (Banker et al., 2002).

At individual level, junior auditor, senior auditor and audit manager have different benefits from information technology. Normally a junior auditor is assigned to prepare the working papers. Most of these tasks are relatively repetitive and involve substantial calculations and referencing across different accounts. Computer applications can automate such structured tasks and substantially reduce the processing time and at the same time allow junior auditors to concentrate on more complex tasks and enhance their individual performance (Millman and Hartwick, 1987). Senior auditors normally would review the works of junior auditors, assist in audit plan development and organization of audit activities. An audit software can organized all required audit procedures in a common list and cross-referenced them to items in the working papers and these benefit senior auditors and enhance their productivity (Kraemer et al., 1993). An audit manager normally acts as a supervisor or reviewer of working paper from their subordinates. Audit software can organizes all audit evidence collected by juniors and seniors in an electronic format and audit managers are likely to be more effective when reviewing such data. Audit decision quality is enhanced because an electronic format of working paper is clear than manual format of audit paper (Kraemer et al., 1993).

In business process level, information technology can reduce paper work in office and the information can be easily accessed by the whole organization (Broadbent et al., 1999). For example, when the database of a client is stored in a master server and all the audit engagement team members can access the server, it can expedite the audit process. This can reduce the working hours for a client and improve efficiency, while at the same time reduce the operating cost in printing unnecessary documents.

In work group level, email is the most important network application for the auditors to communicate with each other, clients, and overseas colleagues. Online instant messaging software can help auditors conduct online real time conversation with their clients or colleagues at a very minimum cost. Besides that, use of email or other technology communication can also decrease in operating costs such as postage and travelling expenses (Ho, 1999).

In other words, information technology can improve the productivity of the firm and reduce its operating costs, while at the same time increase revenue of the firm. In such situation, electronic presentation of audit working paper can led to high quality of audit decision making and gets more new client, which can boost up the audit firm's revenue (Banker et al., 2002).

2.2. Disadvantages of Information Technology on the Audit Process

However, it is also claimed that using information technology has a few disadvantages too. It is claimed that computerized assisted auditing lack a common interface with information technology systems, such as file formats, operating systems, and application programs. The problem is, auditors have to design one specialized audit software for each auditee's electronic data processing system if the electronic data processing system uses proprietary file formats or different operating systems (Lanza, 1998). This is time consuming when auditors need to design different audit software for each of their clients.

Applying an advanced computerized assisted auditing is usually very costly even if it is possible because for some audit software, it requires special audit software modules be embedded in the electronic data processing system in the designing stage. Therefore, the early involvement of auditors at the time when the system is under development becomes necessary. Besides that, when an audit policy changes, it may require a major modification not only to individual audit software modules, but also to entire electronic data processing systems (Wells, 2001).

As the auditees' electronic data processing systems become more complex, it is essential for the auditors to audit through the computers. Most computerized assisted auditing currently in use cannot directly access the clients' data on-line. Auditors usually gather the historical data file from the auditee's personnel (Liang et al., 2001; Shaikh, 2005). This situation creates the possibility that the auditors may be given manipulated data (Lanza, 1998). In addition, electronic data tampered by unauthorized personnel can remain undetected forever if sufficient internal controls are not in place.

3. METHODOLOGY

Data for the study was collected using primary data, which is through questionnaires and interviews. About 200 questionnaires were distributed to external auditors in Klang Valley through mail and e-mail in December 2011. The questionnaire was adopted from prior studies (Abu-Musa, 2008; Banker et al., 2002; Braun and Davis, 2003; Chaveerug and Ussahawanitchakit, 2009). The respondents must have at least 6 months of working experience in audit firm. They are auditors at big firms, medium firms and small firms. Telephone interviews were also conducted to support the results. Data was analyzed using descriptive statistics and multiple regression analysis. The regression analysis attempts to examine the impact of auditors' perceptions on their usage of information technology in the audit processes.

The following is the regression model used in this study:

$$UTAP = \beta_0 + \beta_1 PAET + \beta_2 PAST + \beta_3 PAIP + \beta_4 PDCI + \beta_5 PDCY + \beta_6 PDCO + \varepsilon$$

$$UTAP_i = \beta_0 + \sum_{j=1}^{6} \beta_j X_j + \varepsilon$$

Where,
UTAP = Usage of technology in audit process,
PAET = Perceived advantages - emerging technology helps in audit processes,
PAST = Perceived advantages - shorten time of audit process,
PAIP = Perceived advantages - increase productivity of audit firm,
PDCI = Perceived disadvantages - lack a common interface with information technology systems,
PDCY = Perceived disadvantages – costly,
PDCO = Perceived disadvantages – system complexity,
ε = Error.

4. RESULT AND DISCUSSION

4.1. Respondents' Profile

Table 1 shows the profile of the respondents used in the study. About 200 questionnaires were distributed to auditors in Klang Valley, however, only 56 completed questionnaires were returned and completed to be used in the study.

Row 2 of Table 1 indicates that 57.1% of the respondents are female and 42.9% are male. Most of the respondents (91.1%) are in the range of 21-year-old to 30-year-old. About 37.5% of the respondents are attached to Big 4 audit firms, while another 39.3% are from medium firms, and the balance are from small firms. About 25% of the firms have 100-300 employees and 10 firms have more than 500 employees.

In terms of professional qualification hold by the respondents, half of the respondents (50%) have ACCA professional qualification. The others have CPA Australia (16.1%), ICAEW (12.5%), and MICPA (7.1%). About 43% of the respondents have worked in audit industry for 1-3 years, 23.2% have been in this line between 3 and 5 years, and close to 20% have been in this industry for more than 5 years. Close to 45% of them hold audit senior position, followed by audit junior and audit manager which consists of 37.5% and 17.9% respectively. And close to 60% of them have been in this position between 1 and 5 years while the balance holds this position <1 year.

4.2. Usage of Information Technology Software by Auditors

The respondents are requested to identify the information technology software(s) that is(are) normally used in their audit processes. Table 2 shows the result from their responses. About 35.7% of the respondents use Microsoft Excel as information technology software during audit process. They claim that this is due to the simplicity of the software. Followed by CaseWare (26.8%), which is an audit report generating software. CAAT, MUS and GAS are used by 12.5%, 8.9% and 3.6% of the firms respectively.

Table 1: Respondents profile

Variables	Frequencies (%)
Gender	
Male	24 (42.9)
Female	32 (57.1)
Age	
21-30	51 (91.1)
31-40	5 (8.9)
Firm size	
Big four	21 (37.5)
Medium	22 (39.3)
Small	13 (23.2)
Number of employees	
<50	13 (23.2)
50-100	10 (17.9)
100-300	14 (25.0)
300-500	9 (16.1)
More than 500	10 (17.9)
Professional qualification	
ACCA	28 (50.0)
ICAEW	7 (12.5)
CPA Australia	9 (16.1)
MICPA	4 (7.1)
Other	8 (14.3)
Duration in audit industry	
6-12 months	8 (14.3)
1-3 years	24 (42.9)
3-5 years	13 (23.2)
More than 5 years	11 (19.6)
Position	
Audit manager	10 (17.9)
Audit senior	25 (44.6)
Audit junior	21 (37.5)
Duration in current position	
<1 year	23 (41.1)
1-5 years	33 (58.9)

Table 2: Usage of information technology software by auditors

Software	Percentage
GAS	3.6
CAAT	12.5
MUS	8.9
Microsoft Excel	35.7
CaseWare	26.8
Other	12.5

GAS: Generalized audit software, MUS: Monetary Unit Sampling

4.3. Ranking of Usage of Information Technology in Audit Processes

The respondents are also required to identify the audit procedures which involved information technology and rank their usage of information in the audit processes. Table 3 shows the ranking of the usage of information technology in audit procedures which are ranked by the 56 respondents. Generally, information technology is greatly used in generating the audit working paper which is ranked first. Information technology is also widely used in generating the audited financial statements (ranked second), sample selection procedure (ranked third), conduct of the audit fieldwork (ranked fourth), and in the audit planning stage (ranked fifth).

4.4. Ranking of Usage of Information Technology for Different Position of Auditors

Respondents are also asked to rank their usage of information technology based on the position of the auditors. There are four positions being ranked, which are audit partners, audit managers, senior auditors and junior auditors. First, they are supposed to rank according to what they think the usage should be, for example, information technology should be most useful for auditors in which position. After that, by using the same criteria, they are required to rank based on the real situation happening in their organizations.

The results are presented in Table 4. The results indicate that the respondents think that information technology is most useful for audit managers, followed by the senior auditors, audit partners and lastly, junior auditors. But, based on auditors' experience at their organizations, senior auditors rank first in the usage of information technology. Then, followed by audit managers, junior auditors and audit partners.

4.5. Auditors' Perception on the Usage of Information Technology in the Audit Process-regression Analysis

The data is cleaned, checked for reliability, validity, non-response bias, normality and multicollinearity before the regression analysis is carried out. The value of the Cronbach's alpha is 0.706, and the value of the Kaiser–Meyer–Olkin measure of sampling adequacy is 0.78. The non-response bias test also indicates that there is no difference between those who returned the questionnaire earlier and those who sent later.

Table 5 provides information about the skewness, kurtosis, mean and standard deviation of the items/statements used in the paper.

Table 3: Ranking of usage of information technology in audit procedures

Audit procedures	Mean	Rank
Generate audit working paper	1.79	1
Generate audited financial statements	2.41	2
Sample selection procedure	3.96	3
Conduct of the audit fieldwork	5.25	4
Audit planning	5.27	5
Determining planning materiality level	5.46	6
Analytical review	6.13	7
Test of control	7.31	8
Statutory audit	7.41	9

Table 4: Important of information technology for different position of auditors

Position	Information technology most useful for which position of auditors?		Based on real life experience, information technology is most used by which position?	
	Mean	Rank	Mean	Rank
Audit partners	2.43	3	3.66	4
Audit managers	2.14	1	2.16	2
Senior auditors	2.23	2	1.59	1
Junior auditors	3.20	4	2.59	3

As shown in this table, the value of skewness and kurtosis is between ±3.0, thus the data is assumed to be normally distributed.

When the correlations between the variables are checked, the results show that all the correlations are below the threshold value of 0.70 (Hair et al., 1998), indicating that there is no multicollinearity problem among the variables.

4.5.1. The regression analysis

Table 6 shows the regression result which examines how the auditors' perceptions affect their usage of information technology in the audit processes.

The result in Table 6 indicates that the adjusted R^2 for the model used in the study is 0.219 and the F value is 3.570 ($P < 0.000$). It means that close to 22% of the variation in the usage of information technology can be explained by the model.

Column 4 of Table 6 indicates that two of the independent variables, PAET and PAST are significant. The perceived advantage that emerging technology helps in the audit processes, represented by *PAET*, appears to significantly influence the auditors' usage of information technology. This result is consistent with the earlier finding from another study by Chaveerug and Ussahawanitchakit (2009) which finds that information technology helps to enhance the audit work. A brief telephone interviews with three auditors reveal the following:

> *"Information technology (IT) helps to simplify our audit processes."*
>
> *"IT gets us to do our work easier and more efficient, especially when we need to cross-reference the figures to other sections in our working files."*
>
> *"IT is really a help especially when we need to re-calculate and check the accuracy of our clients' data."*

Another independent variable, the perceived advantage that information technology can shorten the time of the audit processes (*PAST*) is also positively influence the auditors' usage of information technology in the audit processes. This result appears to suggest that information technology helps to reduce their time in doing auditing works and motivate them to use it, for example in the sample selection process. This is admitted by the auditors during the interviews:

> *"We really save time when we use software in generating our audit working papers, it helps to expedite our audit."*
>
> *"Using software to select samples is faster."*
>
> *"Using IT to generate our audited accounts help us to be more efficient and save time."*

However, other independent variables are not significant in influencing the auditors' usage of information technology. These insignificant results appear to suggest that the usage of information technology is not motivated by the possibility that it can increase the productivity of the firm. The lack of common interface and the complexity of the information technology system also do not influence the usage of information technology. The high investments and costs of information technology software also is not a significant factor to de-motivate the auditors using it. This

Table 5: Skewness, kurtosis and mean for normality test

No.	Statements of independent variables	Skewness	Kurtosis	Mean±SD
1.	Emerging technology helps in auditing			
a.	IT helps auditors to obtain a better understanding of client data	−0.821	0.230	3.91±0.394
b.	Data and documentation stored in computer allows future auditors to understand the past events better	0.554	−0.947	3.70±0.737
c.	IT improves in-depth information searching in terms of obtaining useful audit information	0.365	−0.678	3.71±0.653
d.	IT can analyse correctness and reliability of auditing data processing	−0.090	−0.791	4.07±0.684
e.	IT helps auditors to simplify audit process	0.068	0.189	4.14±0.554
f.	Using IT improves overall audit effectiveness	0.000	−0.104	4.00±0.603
2.	Shorten time of audit process			
a.	IT reduces time in generating audited financial statements	−0.073	−0.401	3.86±0.724
b.	IT reduces time in samples selection process	0.138	−0.553	3.86±0.645
c.	Some software can help auditors reduce time in test of control	0.180	−0.503	3.79±0.624
d.	Some software designed to help auditors in random sampling method so that time in selecting samples will shorter than before	−0.230	0.270	3.84±0.654
e.	IT can help auditors to detect high risk transaction during substantive test in shorter time	0.666	−0.536	3.59±0.654
f.	IT reduces time in generating audit working papers	−0.037	0.218	3.89±0.562
3.	Increase productivity of audit firm			
a.	IT increases flexibility in information generation	0.319	−0.662	3.63±0.590
b.	Auditors will able to complete audit procedures more efficiently accompanied by IT	0.240	−0.941	3.84±0.708
c.	Using IT increases the likelihood of audit findings	−0.079	−0.283	3.84±0.708
d.	IT might improve quality of reports	0.029	−0.245	3.95±0.616
e.	IT might improve decision-making process	−0.042	−0.103	3.71±0.653
f.	IT helps in all individual level such as junior auditor, senior auditor, audit manager and audit partner	0.169	−1.073	3.89±0.731
4.	Lack a common interface with information technology systems			
a.	Different audit software system needs to be designed for different clients	0.395	−0.615	3.64±0.616
b.	IT needs more time for designing different software and system to different clients	0.203	−0.596	3.80±0.644
c.	Same audit software can easily be used by every client from different industries without any amendment	0.487	0.435	2.77±0.914
d.	Auditors need to consider another alternative when the existing software cannot suit the client's data processing system	0.071	−0.548	3.79±0.731
e.	It is time consuming to design new audit software for new client	0.608	−0.578	3.61±0.652
5.	Costly			
a.	Investment in audit software will involve more costs to the firm	1.112	−0.007	3.48±0.687
b.	IT needs more security system	0.914	−0.242	3.52±0.660
c.	IT security system is costly	1.240	1.339	3.32±0.606
d.	Some software is not expensive	0.458	1.696	3.11±0.454
e.	New audit software will take time to learn and increase the time cost of auditors	−0.971	2.071	3.93±0.684
6.	Complexity			
a.	Been encountered system problems when auditing that have impaired efficiency	−1.372	0.461	3.98±0.863
b.	Never encountered any problems when using IT auditing	−1.162	2.023	3.84±0.968
c.	Report generated by computer software sometime lack of accuracy	0.973	1.249	3.25±0.694
d.	Authorized staff can easily amend the records	0.826	−0.293	3.52±0.632
e.	Auditors feel confident when using IT in auditing	0.124	0.633	2.73±0.587
f.	IT is generally unsecured	1.995	2.853	2.36±0.586

IT: Information technology, SD: Standard deviation

may be due to the fact that nowadays, a lot of audit firms have provided budgets or make provisions for information technology usage in their firms in their effort to keep up-to date with the market and make sure that they manage to cater the need of their clients as claimed by Banker et al. (2002). The detail investigation of the data in the study reveals that all the auditors use at least one information technology software/spreadsheet in the audit processes as the software/spreadsheet is available to be used in their firms.

5. CONCLUSION

Overall, the result indicates that information technology is widely used in the audit processes. Information technology is especially used to generate the audit working papers, to generate the audited financial statements and to select samples during audit processes. The respondents indicate that information technology is mainly used by the senior auditors and audit managers in their organizations. The results appear to suggest that the auditors are motivated to use information technology because it helps to shorten the time of the audit processes and get their job done in a more efficient manner.

However, the conclusions drawn from this study should be interpreted in a limited way, which would potentially represent opportunities for further investigation in future research. First, the samples which are used in this study are primarily from Klang Valley only, thus it does not represent the perceptions of all auditors in Malaysia. Future research could extend the study to include

Table 6: OLS regression result

Variables	Coefficients	Standard error	t-statistic
Constant	1.470	1.160	1.268
PAET	0.739	0.199	3.710***
PAST	0.272	0.188	1.989*
PAIP	−0.083	0.199	−0.417
PDCI	−0.040	0.168	−0.240
PDCY	−0.109	0.170	−0.641
PDCO	0.113	0.160	0.705
R^2: 0.304			
Adjusted R^2: 0.219			
F-value: 3.570			
Significant value: 0.000			

*,**,***: Indicate significant at 10%, 5%, 1% level respectively, UTAP: Usage of technology in audit process, PAET: Perceived advantages - emerging technology helps in audit processes, PAST: Perceived advantages - shorten time of audit process, PAIP: Perceived advantages - increase productivity of audit firm, PDCI: Perceived disadvantages - lack of common interface with information technology systems, PDCY: Perceived disadvantages – costly, PDCO: Perceived disadvantages – system complexity, OLS: Ordinary least square

auditors from other parts of the country, such as East Coast, South, and North of Malaysia. Secondly, this study is a cross sectional study, where it used a 1 year data. Future research can include more years of data, thus longitudinal studies can be conducted and further investigation about the trend of using information technology in the audit processes by the auditors can be carried out. In addition, this study only considers six independent variables. There are many other independent variables which may influence the usage of information technology in the audit processes and not mention in this study.

REFERENCES

Abdul-Hamid, M.A., Mohamed, S., Md-Nassir, A. (1996), Sampling size and auditors' judgements: A simulation. Pertanika Journal of Social Science and Humanities, 4(2), 175-184.

Abu-Musa, A.A. (2008), Information technology and its implications for internal auditing: An empirical study of Saudi organizations. Managerial Auditing Journal, 23(5), 438-466.

Banker, R.D., Chang, H., Kao, Y. (2002), Impact of information technology on public accounting firm productivity. Journal of Information System, 16(2), 209-222.

Bierstaker, J.L., Burnaby, P., Thibodeau, J. (2001), The impact of information technology on the audit process: An assessment of the state of the art and implications for the future. Managerial Auditing Journal, 16(3), 159-164.

Braun, R.L., Davis, H.E. (2003), Computer-assisted audit tools and techniques: Analysis and perspectives. Managerial Auditing Journal, 18(9), 725-731.

Broadbent, M., Weill, P., St. Clair, D. (1999), The implications of information technology infrastructure for business process redesign. MIS Quarterly, 23(2), 159-182.

Bunget, O.C., Grigoroi, L., Dumitrescu, A.C. (2009), Detecting and reporting the frauds and errors by the auditor. Megatrend Review, 6(2), 279-291.

Cannon, D.M., Crowe, G.A. (2004), SOA compliance: Will IT sabotage your efforts? The Journal of Corporate Accounting and Finance, 15(5), 31-37.

Chaveerug, A., Ussahawanitchakit, P. (2009), Effective implementation of computerized assisted auditing of CPAs in Thailand: How does influence audit performance. International Journal of Business Research, 9(5), 54-75.

Hair, J.F., Anderson, R.E., Tatham, R.L., Black, W.C. (1998), Multivariate Data Analysis. 5th ed. New Jersey: Prentice Hall.

Hall, J.A. (2013), Accounting Information System. 8th ed. USA: South Western, Cengage Learning.

Higgins, H.N., Nandram, B. (2009), Monetary unit sampling: Improving estimation of the total audit error. Advances in Accounting, 25(2), 174-182.

Ho, J.L.Y. (1999), Technology and group decision process in going concern judgements. Group Decision and Negotiation, 8(1), 33-49.

Johnstone, K.M., Gramling, A.A., Rittenberg, L.E. (2014), Auditing: A Risk-Based Approach to Conducting a Quality Audit. 9th ed. USA: South Western, Cengage Learning.

Kraemer, K.L., Danziger, J.N., Dunkle, D.E., King, J.L. (1993), The usefulness of computer-based information to public managers. MIS Quarterly, 17(2), 129-149.

Lanza, R.B. (1998), Take my manual audit, please. Journal of Accountancy, 185, 33-36.

Liang, D., Lin, F., Wu, S. (2001), Electronically auditing EDP systems with the support of emerging information technologies. International Journal of Accounting Information Systems, 2, 130-147.

Majdalawieh, M., Zaghloul, I. (2009), Paradigm shift in information systems auditing. Managerial Auditing Journal, 24(4), 352-367.

Millman, Z., Hartwick, J. (1987), The impact of automated office systems on middle managers and their work. MIS Quarterly, 11(4), 479-490.

Rezaee, Z., Elam, R., Sharbatoghlie, A. (2001), Continuous auditing: The audit of the future. Managerial Auditing Journal, 16(3), 150-158.

Shaikh, J.M. (2005), E-commerce impact: Emerging technology - Electronic auditing. Managerial Auditing Journal, 20(4), 408-421.

Smith, S. (1997), The smart way to invest in computers. Journal of Accountancy, 185(5), 63-65.

Spathis, C., Constantinides, S. (2004), Enterprise resource planning systems' impact on accounting processes. Business Process Management Journal, 10(2), 234-247.

Vasarhelyi, M.A., Romero, S. (2014), Technology in audit engagement: A case study. Managerial Auditing Journal, 29(4), 350-365.

Wells, J.T. (2001), And nothing but the truth: Uncovering fraudulent disclosures. Journal of Accountancy, 192(1), 47-52.

Yang, D.C., Guan, L. (2004), The evolution of IT auditing and internal control standards in financial statement audits the case of the United States. Managerial Auditing Journal, 19(4), 544-555.

Zhao, N., Yen, D.C., Chang, I. (2004), Auditing in the e-commerce era. Information Management and Computer Security, 12(5), 389-400.