E-COMMERCE IMPACT: THE IMPACT OF E-AUDIT IMPLEMENTATION ON THE AUDITOR’S PERFORMANCE
(EMPIRICAL STUDY OF THE PUBLIC ACCOUNTANT FIRMS IN SEMARANG, INDONESIA)

Evi Maria,
Faculty of Information Technology
Satya Wacana Christian University
Indonesia.

Yayuk Ariyani,
Faculty of Economics and Business
Satya Wacana Christian University
Indonesia.

ABSTRACT

E-audit implementation is unavoidable by Public Accounting Firm (KAP), because the KAP auditees have already used the EDP system in processing such transactions. However, the inspection process using IT (e-audit) often have problems and also often face failures (Hartoyo, 2011). Therefore, this study aims to perform an empirical test of whether the e-audit implementation in KAP has significant impact to the auditor’s performance or not, especially in KAP in Semarang. The data in this study were collected with questionnaires and were analyzed with simple linear regression. The study results found that the e-audit implementation had positive and significant impact on the auditor’s performance. Auditor’s performance was affected by e-audit factors (61.6%) and the remaining were influenced by other factors. Since the e-audit implementation had a major contribution to the improvement of the auditor’s performance, than the head of the firm should consider the auditor's level of acceptance of new audit technologies that include performance expectancy, effort expectancy, social influence, and expectations of users in the organization and technical infrastructure to support the system running.

Keywords: E-audit implementation, Auditor’s performance, Public Accountant Firm.

Introduction:

Currently, the organization relies on sophisticated electronic data processing (EDP) system to manage the business transactions and perform accounting records to win the business competition. The use of EDP systems in almost all organizations, of course, has an change impact not only in the accounting field, but also the auditing field. Practitioners in auditing field and professional organizations such as the Auditing Standards Board (ASB) has paid more attention to the organization's dependence on EDP systems, for example by issuing the Statement of Auditing Standards (SAS). While in Indonesia, the Indonesian Public Accountant Institute (IAPI) has adopted SAS in Public Accountant Professional Standards (SPAP), which serves as a guide for auditors in performing audits of entities which use EDP systems.

The use of EDP systems in business has an impact like two sides of a coin where one side gives a lot of convenience, but on the other hand may weaken the documents reliability as an audit evidence since there is a shift in the audit evidence from documentary evidence to electronic evidence (Maria, 2010). The audit track is only applicable for a limited time or even none at all because the transactions are automatically processed in the EDP system (Khemakhe, 2001). Auditors are required to follow the information technology (IT) development when performing the audit work (Fleenor, 1995). Public accounting firm (KAP) must keep and maintain the quality of the business environment amid audits and quickly evolving EDP systems because if the auditor fails to keep it, there will be lawsuits by third parties (Lowe et al., 2002; Earley, 2002; and Herusetya, 2007). Since the emergence of Enron scandal in 2001, the public accounting profession has experienced a major change in accordance with the publication of the Sarbanes-Oxley which put impact on the accuracy and transparency of company’s financial reporting (Elders et al. 2010). Auditors are required not only able to test the financial transactions, but also examine management practices. Audit process using Computer
Assisted Audit Techniques (CAATs) or e-auditing could no longer be postponed to be applied by the firm because the majority of clients both large and small companies, has already used computers to perform transaction processing (Goodhue and Thompson, 1995). In addition, the use of e-audit can overcome the risk of fraud and can detect activities with fraud potential (Olasanmi, 2013) so it may assist the auditors in carrying out inspection tasks effectively and efficiently (Hartoyo, 2011).

The concept of e-audit in the public sector has been included in the strategic plan of Indonesian Supreme Audit Agency (BPK RI) 2011-2015 in the framework of inspection management and financial responsibility of the state. This concept is planned to address the problems associated with the short inspection time and the limited number of auditors because of the increasing number of state financial manager entities. Application of e-audit concept in the public sector is expected to provide benefit in preventing, detecting and tracking the fraud in the management and accountability of state financial (BPK RI, 2012). BPK can employ external examiner such as a public accountant who works in the firm who is registered in BPK to assist the state financial examination duties (Act No. 15 of 2004 chapter 9). In addition for KAP, Hartoyo (2011) stated that the use of e-audit is not a new point in assisting the auditees inspection process. However, the inspection process using IT often encountered a problem and also failed frequently because the audit process ran unsafe and illegal (Hartoyo, 2011). Therefore, regulatory, hardware, software and human resources should be ready for the succeed e-audit implementation.

Basically, this study aims to provide empirical evidence on whether the e-audit application in KAP has significant influence on the auditors performance or not. The study sites had been selected on purpose which were KAPs in Semarang because there had been no research on this matter in Semarang and Central Java Government has given full support to the concept of e-audit by signing BPK Memorandum of Understanding and Central Java provincial government No. 172 / NK / X-XIII / 2/5/2011 on May 6, 2011, which contains the development and management of information systems for data access of Central Java provincial government in the framework of management and state financial responsibility inspection (Rianto, 2011). The study results are expected to provide an overview of the e-audit implementation that has been carried out by the firm, especially in Semarang, whether IT has been fully utilized to support the implementation of the audit assignment and observe its impact on the auditors performance and provide input for the leadership in the firm in order to improve and develop concept of e-audit so that the audit process can be run effectively and efficiently.

Literature Review:

E-audit Concept:

Elders et al., (2010) defined auditing as a process of collecting and evaluating evidence of the information to determine and report the degree of information suitability with the criteria that have been set. Auditing should be carried out by a competent and independent person. E-audit is not too different than auditing, only the process of collecting evidence, and the evidence evaluation is performed with computers. Evidence collected to be evaluated also no longer in the form of hard copies but computer data files. Computer Assisted Audit Techniques (CAATs) is divided into three (3) approaches those are around the computer audit, the audit through the computer, and computer assisted audit.

Auditor's Performance Concept:

Auditor's Performance according to Mulyadi (2010) is a public accountant who carry out the objective inspection assignment of the financial statements of other companies or organizations with the aim to determine whether the financial statements are presented fairly in accordance with generally accepted accounting principles or not, in all material respects, the financial position and operation results of the company. Auditor’s Performance as evaluation to the work performed by employers, peers, self, and direct employees (Trisnaningsih, 2007). Larkin (1990) stated that auditor’s performance consists of ability, professional commitment, motivation, and job satisfaction. Performance is a condition that must be known and confirmed to certain parties to determine the level of results achievement associated with the organization's vision. Esya (2008) defined the auditors performance as auditor’s work potential expression in the form of auditor's work behavior in carrying out the audit tasks to achieve optimal results which are measured using two (2) dimensional factors, objective factors and subjective factors. Indicators of objective factors are results and work discipline. While indicators of subjective factors are initiative, cooperation and loyalty.

Public Accounting Firm Concept:

Public Accounting Firm (KAP) is a business entity that is established either by a person or a group of Public Accountants to provide services in accordance with the characteristics of the public accounting profession, using the name of one Public Accountant founder and obtain a business license. Law No. 5 of 2011 defines KAP as a business entity incorporated under the provisions of laws and obtain a business license under the provisions of this Law.
Previous study and Hypothesis Development:

Technological advances not only affect the accounting field but also has an impact on the auditing field (Maria, 2010). Accounting information systems (AIS)-based on computers also need to be audited to ensure that the financial statement results reflect the true condition of the company so that the information is not misleading the users (Firdaus, 2007). IT developments affect the public accounting profession. If a KAP is not ready for auditors who have enough knowledge about IT, then it must be abandoned and replaced with KAP which is ready. This phenomenon occurs because the auditees have been using computers to generate financial statements (Sasongko, 2002; Goodhue and Thompson, 1995). On this basis, then the auditing standard setters such as American Institute of Certified Public Accountant (AICPA) then developed guidelines for public accountant to conduct the audit process with the information system includes the Audit and Accounting Guide, Computer Assisted Audit Techniques (CAATs).

In a complex IT environment, audit quality is determined by the competence, independence and due professional care attitude which are owned by the auditors (Maria, 2010). Therefore, in the audit process using CAATs or e-audit, the auditor is required to understand the data structures, database scheme and business processes (Braun and Davis, 2003). E-audit implementation conducted by KAP in Indonesia uses an audit approach about computers because not all auditees have already used integrated computer system (Budiasih, 2002). Sasongko (2002) found that the implementation level of information system audit at KAPs in Indonesia was still very low. However, the overall Firm age variable, needs and encouragement of KAP, special knowledge/education, instructions/rules/SPAP, and e-audit implementation technical points had positive impacts on the implementation level of information systems auditing.

Individual's performance is strongly influenced by cultural, skills and knowledge background they have (Esya, 2008). Because age is a general indicator of the maturity level, the increasing KAP age will increase the KAP maturity in e-audit implementation and e-audit can be better. While education will lead to changes in behavior so that people will be able to solve the problems with their knowledge. The combination of experience and education will improve the ability to perform the duties of the accounting profession (Sasongko, 2002). Therefore, it is supposed that the e-audit implementation in KAPs will affect the performance of their auditors. Then the hypothesis to be tested is:

**H1**: E-audit implementation has significant impact on the auditor’s performance in the Public Accountant Firm

The research model is presented in Figure 1, below.

![Figure 1: Research Model](image)

**Research Methodology:**

This study used a questionnaire as a study instrument. Questionnaires were distributed to respondents in the form of a closed questionnaire that lists the statements with multiple choice, so that respondents could simply choose the answer that has been provided. Respondents' answers to the statements in the questionnaire were based on the Likert scale. Scores 1-5 were used to measure the respondents' answers, favorable statements were scored 5 and unfavorable statements were scored 1.

The study data were obtained by conducting a survey directly by visiting KAPs as the study objects with the aim to improve the response rate of the questionnaire and the researcher could see the process of the e-audit implementation directly in the firm which there were the study respondents within. The respondents used in this study were partners, managers, senior auditors, supervisors and junior auditors who work at the firms in Semarang with several criteria: (1) has been worked in the firm at least 3 (three) months, (2) have the ability to use audit tools / software, and (3) ever use the audit tools / software in audit assignment. List of KAPs in Semarang was obtained from the Firm Directory of Indonesian Public Accountants Institute (IAPI) which is accessible from http://www.iapi.or.id/iapi/directory.php.

The variables analyzed in this study were the e-audit application as independent variables using sub variables as used in the study by Sasongko (2002) those were the KAP age, and KAP needs and encouragement, special knowledge/education, instructions/rules/SPAP, and e-audit implementation technical points. E-audit implementation variable was measured by using 20 statement points. While the dependent variable of this study was the auditor’s performance which included objective factors (work results and work discipline) and subjective factors (initiative, cooperation and loyalty). Auditor’s performance variable was measured with 20 statement points. These variables were at the ordinal level of measurement and the scaling method used here was Likert Scale. For more details, the variables and their indicators can be observed in Table 1 below.
Quantitative analysis technique was used to process and discuss the collected data. Data obtained from the questionnaires were analyzed using parametric statistics for the analysis of interval data and ratio. Since the data of this study were in ordinal scale, data were firstly transformed into interval data by using Method Successive Internal (MSI) so that parametric statistics could be used. The analytical tool used to test the hypothesis was simple linear regression analysis. The regression equation is as follows:

\[ Y = a + bX + e \]

Where: \( Y = \) auditor’s performance  
\( a = \) constanta  
\( b = \) regression coefficients,  
\( X = \) e-audit implementation  
\( e = \) residual value

The hypothesis will be tested with the following steps (Sunnyoto, 2011)

1. **Coefficient of determination:**
   The coefficient of determination is used to determine how much influence of the independent variables in affecting the dependent variable which is denoted by \( r^2 \). \( r^2 \) value ranging from zero to one. If the coefficient of determination is one or almost one, then it means that the independent variables can explain all or nearly all the variance that occurs in the dependent variable, and vice versa.

2. **T test and significance test:**
   Significant test is a test that is performed to determine whether the direction of the hypothesis is accepted or rejected. \( t_{test} \) value > \( t_{table} \) means no significant correlation between independent variable and dependent variable, or it could be a significance below 0.05 for social research. Ho is rejected if the \( t_{cat} \) value > \( t_{table} \) and vice versa.

3. **F Test:**
   This test aims to determine the extent to which the independent variable that is used can explain the dependent variable. To regression model significant test, if \( F_{test} > F_{table} \) it can be concluded that the model obtained is significant.

**Results and Discussion:**

**Profile of the Respondents:**

This study was conducted on auditors who worked in KAP in Semarang and auditors who participated include partners, managers, supervisors, senior auditors and junior auditors. The survey was conducted in April 2014 on 18 KAPs in Semarang, but only 11 KAPs participated in this study as respondents. 7 KAPs refused because they were busy in doing the inspection. The KAPs which participated in this study, including KAP Darsono & Budi Santoso Cahyo, KAP Drs Bayudi Watu & Partners (Branch), KAP Drs. Sugeng Pamudji, KAP Drs Idjang Soetikno, KAP Ngurah Arya & Partners (Branch), KAP Drs Tahir Hidayat, KAP Yulianti SE., BAP, KAP Drs Benny Gunawan, KAP Dra Suhartati & Partners (Branch), KAP Tarmizi Ahmad and KAP Drs. Soekamto. The number of questionnaires provided to the auditors were as many as 110 questionnaires. Of all questionnaires distributed, only 75 (68.2%) of respondents who completed and returned the questionnaires. While the others did not complete and return the questionnaire for various reasons. However, only 51 (46.4%) questionnaires were filled completely and meets the criteria for the sample selection that can be processed for further testing.

**The overview of e-audit implementation in Public Accounting Firms in Semarang:**

From the survey results conducted in 11 KAPs in Semarang in April 2014, it was found that the auditees at KAPs in Semarang had already used the database. The database used such as Microsoft Excel, Microsoft Access and FoxPro. In conducting the audit process, KAPs in Semarang had already used e-audit. KAPs that were surveyed did not develop their own software audit but they used Generalized Audit Software (GAS) such as ACL, IDEA, Lotus Notes and Spreadsheet. Although GAS had been developed by some auditors to obtain audit information in a company that uses a computerized information system, but the software was not compatible with the complex structure of the files in the database system. Auditors usually had difficulty while they were preparing the initial data. 90.90% KAPs which were surveyed still used the audit approach around a computer to assist auditees inspection tasks where of this approach the auditors often ignore the inspection of the data processing stage. This is due to not many auditors could take advantage of access to IT roles ranging from input to
output process. Auditors did not have sufficient expertise to collect and evaluate electronic evidence and most of auditors were still use the audit approach for physical evidence of the electronic evidence. In addition, the auditee’s business size factor also influenced the auditor’s decision-making process of what software to be used in conducting the audit. Until now, the auditees at KAPs in Semarang are small and medium scale enterprises, so sometimes the auditors feel good enough to use Microsoft Excel to assist the audit inspection rather than using other tools. Information systems of the auditees were not integrated, so it was another reason to select Microsoft Excel as an audit tool.

Validity and Reliability Test:
Corrected Item to Total Correlation Coefficient is used to test the validity of the indicators, while Cronbach’s Alpha used in indicators’ reliability testing. Based on the test results for each variable statement on e-audit implementation it can be concluded that all indicators passed the validity and reliability test. This can be seen from the P-value of t count where indicators that passed the validity and reliability test were indicators that had P-value below 0.05, and Cronbach’s Alpha> 0.6 (0.921> 0.6). On auditor performance variable, it was found three (3) statement points which had a P-value above 0.05, then it can be concluded that only 17 statement points about the auditors’ performance valid for further testing. While Cronbach’s Alpha> 0.6 (0.829> 0.6) showed that the indicator of the auditor’s performance variables was reliable.

Hypothesis Testing:
Hypothesis testing is used to determine whether the hypothesis is accepted or rejected by exploring the impact of e-audit implementation on the auditor’s performance in Public Accounting Firms. All data testing and data analysis in this study used SPSS 17.0 (Statistical Program for Special Science) for windows. The test results with regression analysis can be seen in Table 2 below.

<table>
<thead>
<tr>
<th>Variable</th>
<th>b</th>
<th>$t_{test}$</th>
<th>P-Value</th>
<th>$F_{test}$</th>
<th>F-Value</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>7.238</td>
<td>-0.000</td>
<td>0.921</td>
<td>37.183</td>
<td>0.816</td>
<td></td>
</tr>
<tr>
<td>E-audit implementation</td>
<td>1.068</td>
<td>8.211</td>
<td>&lt;0.000</td>
<td>&lt;0.000</td>
<td>0.785</td>
<td></td>
</tr>
</tbody>
</table>

The results of hypothesis testing in Table 2 indicate that the e-audit implementation had significant impact on auditor’s performance. Auditor’s performance variable on e-audit implementation resulted in a positive regression direction with b of 1.068 and constants of -7.238. Thus the form of the correlation between the two variables could be described by the regression equation y = -7.238 + 1.068X. Before being used for the prediction, significance and linearity test were performed with $F_{test}$ (37.183) with a significance value of 0.000 which means that the regression equation was significant and linear or in other words, our model is good and acceptable. The results of statistical tests using simple linear regression resulted in $t_{test}$ value of 8.211 with P-value of 0.000. This test found that H1 was supported, which means the e-audit implementation which had an impact on the auditor’s performance in KAP was accepted. Positive $t_{test}$ value indicates that the correlation between e-audit implementation and auditor’s performance was positive which means that the higher the e-audit implementation, the higher the auditor’s performance. The magnitude of the correlation strength between the e-audit implementation and auditor’s performance was shown by the product moment coefficient of 0.785 with a 0.000 significance level. This means that the correlation between e-audit implementation was powerful and directional (because it was positive) where the higher the e-audit implementation, the higher the auditor’s performance. 0.000 significance means that the correlation between the two variables is significant (sig> 0.05).

The results of this study are consistent with research conducted by Hartoyo (2011) and Sasonko (2002) which stated that e-audit implementation in inspection could improve the auditor’s performance. Educational programs, training and technical assistance related to the use of information technology in e-audit needs to be performed on an ongoing basis (Sasonko, 2002). Auditor’s performance increased due to the implementation of data collection and inspection process by using e-audit was found to be faster than the conventional way. Advances in technology could make the auditors to ensure the internal control of the auditees, to access documents and records as well as produce a more efficient information that can not be performed by using manual audit approach. From the benefits of e-audit implementation, than KAP should have careful consideration, especially regarding the auditor’s level of acceptance of new technologies used in e-audit. Since the key for successful e-audit implementation is based on the auditors acceptance which include performance expectancy, effort expectancy, as an easy use of e-audit, social influence as the awareness of the influence of other people to use e-audit and user’s expectations on organizational infrastructure and technical points can support the system running. If e-audit implementation has an impact on improving the auditor’s performance, then increased performance will automatically raise the audit quality and the reports it generates. The coefficient of determination indicated that 61.6% of the variation that occurs in auditor’s performance could be explained by the e-audit implementation and
the remaining 38.4% was influenced by other variables in addition to the e-audit implementation that were not addressed in this study such as the idealism dimension in ethical orientation (Barnett, Bass and Brown, 1994) and commitment to the profession (Jeffrey and Weatherholt (1996). Dimensions idealism of the auditors make the auditors uphold the professional standards as a reference in inspection so it may have an impact on performance improvement. While the auditor’s commitment aspect to the profession is also has an impact to the auditor’s performance since people who have commitment will also have fidelity/loyalty to the profession and will uphold the existing rules and standards and they will work with full integrity for the company development in which they work and for the profession they have.

**Conclusion:**

The use of electronic data processing (EDP) by the company has brought a change not only in the accounting field but also in the auditing field. Public Accounting Firm (KAP) in Indonesia, particularly in Semarang improve the audit quality continuously the by implementing an e-audit in their auditing process since the KAP auditees have already used EDP system in processing their business transaction. This study found that the firms in Semarang had implemented e-audit in audit assignments by using Generalized Audit Software (GAS). 90.90% were still use the KAP audit approach around the computer because the auditors had limited expertise in the IT usage and the remaining 9.10% had already used the audit approach through the computer. The KAPs used it to support the audit assignment process.

From the test results it is found an empirical evidence that e-audit implementation in KAP had positive and significant impact on the auditor’s performance of the where the higher the e-audit implementation, the higher the auditor’s performance. Auditor’s performance was affected by e-audit factors (61.6%) and the remaining was influenced by other factors which were not observed in this study for example ethical orientation and commitment to the profession. Since the e-audit implementation had a major contribution to the improvement of the auditor’s performance, than the head of the firm should consider the auditor’s level of acceptance of new audit technologies include performance expectancy, effort expectancy, social influence, and expectations of users in the organization and technical infrastructure to support the system running.

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