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Research Article

AIS Audit Support by Simulation and Simulation Criteria Definition

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ABSTRACT

This papers goal is to study advanced understanding of the relationships between Accounting Information System Knowledge on Audit Effectiveness via the mediating influences of the Risk Assessment Competency and Auditor Planning Judgments Quality. For data collection and validation; various entries were presented to a computer software for simulation. The results show the Accounting Information System Knowledge has positive relationships with Audit Effectiveness and is a positively significant on Risk Assessment Competency and Quality of Auditor Planning Judgments. Theoretical, managerial and research implications are also discussed.

Keywords: AIS; Computerized Assisted Auditing; Audit Support

1. INTRODUCTION

Independent auditors, also known as certified public accountants (CPAs), conduct audit work to assure whether the overall financial statements (Balance Sheets, Profit and Loss Statements, Statements of Cash Flow and Statements of Retained Earning) of a certain organization are in compliance, with the generally accepted accounting principles (GAAP) [29]. In general, auditors usually issue a report, called auditor's opinion or auditor's report, as a conformation of that organization's financial statements, to do so; they apply some relevant audit procedures, compatible with GAAP, in the examination of the organizations records [1]. As in any other profession, auditors have to acquire new skills and keep working on their skills and capabilities and keep developing them in order to be able to do their job in a professional manner as required by their professional organizations. A very important area of skills and professional capabilities is for auditors to know their way around computerized systems (Information Technology (IT) field) [29].

The knowledge content of the education and development programs should include information technology, as indicated in the International Education Standard (IES) 8 Competence Requirements for Audit Professionals issued by The International

Federation of Accountants (IFAC) [IES8, 2010: par.32]. Furthermore, it is indicated that the IT knowledge and competence requirements in the pre- and post-qualification stages of candidates and of audit professionals, in the International Education Practice Statement (IEPS) 2 Information Technology for Professional Accountants. Despite the exponential growth of the use of information technology (IT) in the business world in the last two decades, the range of IT adoption by auditors have such as using computer assisted auditing techniques to meet this growth remains an empirical question [21]. The computerized assisted auditing is computer tools that extract and analyze data from computer applications [14].

The use of information technology gives auditors the opportunity to increase their productivity as well as it does to the audit function [13, 33]. For example, a major benefit of computerized assisted auditing is its ability to automate previously manual audit tests, thus reducing total audit hours expended. Adding to the above, the computerized assisted auditing may be used to select sample transactions meeting certain criteria, sort transactions with certain characteristics, obtain evidence about control effectiveness, and evaluate inventory existence and completeness [4]. For meeting these increased demands, the use of audit technologies is one good approach; it can greatly improve the efficiency and effectiveness (reducing the cost and increasing the quality) of an audit [Banker et al., 2002]. Despite the fact that the current audit environment increases the need for firms to employ more techniques that can reduce workload, (some do affect technology implementation decisions), the culture of public accounting may face some weaknesses due to the adoption of new technologies by audit teams [Vendrzyk and Bagranoff, 2003].

2. RELATED WORK

Thanks to the modern time technology, the production and storage of massive amounts of information is very easy rather than just possible. Besides, computerized information has become the most important resource in business these days, and it has become of great importance for organizations to effectively handle this information. Since this is relatively new technology, it does require auditors to be aware of the technology, ready to implement and to have certain skills to maximize the benefits of its usage.Audit Effectiveness as defined Nicolaou and Crawell, is: auditors who are an examination of a program, function or operation to assess whether the entity is achieving efficiency and effectiveness in the employment of the available resources and improve profitability of responsibility and accountability to the professional, increase the value-added service and enhance working reputation of audit service; which meets or exceeds customer expectations regarding features and performance [Nicolaou, 2000; Crawell et al., 1995].

Accounting Information System Knowledge, as referred to by authors in [34], includes the skills; expertise and knowledge of auditing process about understanding and analyzing the concentration of controls in an electronic environment (i.e. Computer software); understanding information systems and the use of computer auditing software. It also includes the utilization of information technology based resources as knowledge assets and an infrastructure for physical information technology [34]. For auditors, Information technology expertise enables them to develop new capabilities and skills. Adding to the above, one of the most important information technology expertises is the ability to share information which enables the flow of knowledge in an audit firm [34].

There always has been a discussion, in the scientific and professional literature, about the issue of what IT skills and capabilities should an auditor possess. In [22], the authors say that auditors should have specific understanding for the concentration of controls in an electronic environment; understand information systems and the use of computer auditing software. They also pointed that the differentiation of acquired knowledge should depend on the job requirements and the complexity of tasks. In [32], the author considered that auditors should have enough knowledge of information systems to develop an audit plan, which extended the knowledge requirements of auditors. The author in [11] said: "accelerating the acquisition of expertise in auditor's careers is desirable because of increasing demands for audit efficiency and effectiveness, growing sophistication of accounting systems" [11]. The above paragraph points out the relation between well planned education and training and the proficiency of auditors.

“Auditors' abilities to audit around the system such as performing their audit without evaluating the reliabilities of the AIS have been significantly reduced. ERP Systems require auditing capabilities” [22]. A recent study found that accounting information systems knowledge increases the auditors' awareness of audit risk in an ERP setting, thus increase their concerns and caution [26]. This has a positive effect for auditors' risk assessments and objective planning decisions.In [21] the author examines the auditor's knowledge in accounting information systems. He talked about the setting of information systems in

financial reporting and assurance; ways for financial statements auditors to obtain and use information systems knowledge and the interaction between financial statements auditors and information systems auditors [21]. In [27], the author defined Risk Assessment Competency that the auditors must gather enough competent evidential matter such that the achieved audit risks are at a level acceptable to the auditor. Technology provides auditors the opportunity to work more closely with their clients, helps enhancing team work, helps eliminating waste and efficient performing of audit work and in less time. In theaudits planning phase, auditors apply the audit risk model by making some judgments which concern client risks and the scope of audit risk.

Audit risk is the risk that auditors may unknowingly fail to appropriately interpret auditor's opinion on financial statements that are materially misstated, as defined in [3], which states that auditors may not be able to effectively reduce risk detection by increasing the scope of practical procedures; due to the electronic processing of transactions and the reduction in reliabilities associated with the resulting audit evidence. The auditors can keep concentrated on controls to monitor their design and use, to assure the accuracy and reliability of data in electronic form [3].Accounting information systems used by auditors around the world usually provides the use of computerized assisted auditing which has automatic audit processes and provides implementation of a continuous auditing framework, this gives auditors the benefits of enabling them focus on highest risk areas, reduce audit time needed, reduce used resources, and will increase the effectiveness of controls. Thus improving the overall audit recommendations to management which satisfies the demands for more reliable and relevant information. In the environment of Accounting Information System, auditors with greater Accounting Information System Knowledge will be able evaluate control risk at high level.

As explained by the author in [11]; the auditors' ability to apply the technology to help him doing comprehensive analyses which typically include developing expectations from multiple sources to help identify unusual or unexpected relationships refers to the phrase: Quality of Auditor Planning Judgments [11]. The process auditing approach, which has been used by auditors worldwide, is based on increasing the business strategy, risk and control testing analysis, and increasing the capability of auditing to manage effectively and reduce audit hours in audit planning, conducting the audit and reporting on the audit finding [24, 27]. It was shown in the research looking into prior audit expertise that the nature of auditors' experience, assigned their domain-specific knowledge and expertise. As a result, complex AIS settings such as ERP Systems, requires a higher level of AIS knowledge and expertise so they are able to improve the quality of their risk assessments, which directly affects the effectiveness of their fundamental planning decisions [26].

In the environments of Accounting Information Systems, auditors use the computerized assisted auditing's' tools and techniques to computerize, which simplifies, the audit process. They also use these tools to simplify tests of transactions' detail, account balances and disclosures, which deliver ease of mine about data integrity and assure data control is possible. It was predictable that it would be helpful and that the quality of available information in decision making would be improved by the employment of accounting information systems especially computerized assisted auditing environment. As a new technological development evolve; major changes the in relationship between (IT) Information Technology and audit process can be recognized in every phase of audit process [15]. Closing process enhancements provide analyses of higher quality; it also enhances the accuracy and improves the quality of financial reports, and it provides the ability to create earlier earnings announcements and audit reports. [Granlund and Malmi , 2002; Spathis and Constantinides, 2003].

3. METHODOLOGY

As mentioned earlier, the research methodology in this study, would be by simulation, i.e., presenting various numbers of entries to computer software and investigate the estimated results, then compare these results to our hypotheses, which are:

1. The use of accounting information systems decreases time needed for audit process which increases the efficiency of the process.

2. The use of accounting information systems increases the accuracy of audit processes over large numbers of audits thus increases the efficiency of the audit process.

3. The use of accounting information systems increases the accuracy of the audit process over small numbers of audits thus increasing the efficiency of the audit process.

   Thus leading to our final hypothesis:

4. As auditors gain more knowledge of information technology (IT) and especially in accounting information systems and computerized assisted auditing tools, their job get easier, and their work becomes more efficient and reliable.

4. RESULTS

For our simulation we entered various numbers of entries (10, 100, 1000, 2000, 5000, 10000, 20000, 50000, 100000) to our software, and stated the time needed for the audit process to be done, and the error in the final result, as shown in table-1, we can notice the reliability and efficiency of the computerized process.

Table 1: Simulation Results, Number of Entries-time needed and Error

Number of Entries	Time needed (ms)	Final error
10	2	0.05%
100	10	0.05%
1000	1000	0.07%
2000	1500	0.07%
5000	2500	0.08%
10000	3000	0.13%
20000	3670	0.21%
50000	3700	0.33%
100000	3750	0.39%

As shown from table-1; needed time for the audit process decreases significantly compared to needed time for the traditional non-computerized audit process, these result support our first hypothesis which suggests that the use of accounting information systems decreases time needed for audit process which increases the efficiency of the process. The results also shows that the error of such computerized audit processes is significantly small and acceptable for large and small numbers of entries, which supports our second and third hypotheses which suggests that the use of accounting information systems increases the accuracy of the audit process over small or large numbers of audits thus increasing the efficiency of the audit process. This brings us to our final hypothesis, which says that as auditors gain more knowledge of information technology (IT) and especially in accounting information systems and computerized assisted auditing tools, their job get easier, and their work becomes more efficient and reliable, which totally agrees with our results looking at the previous hypothesis and the results of the simulation.

5. CONCLUTION

This study discussed the impact of the Accounting Information System on Audit Effectiveness. The goal of the study was to state if the audit process was affected as a result of applying computerized assisted auditing technologies. The test was done by simulation of various numbers of entries, stating time and error, then comparing the results. The results supported our hypotheses and as shown in table-1 Accounting Information Systems' Knowledge has a very critical role in audit effectiveness as it significantly decreases needed time and has a relatively small final error.

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