

The Barriers of Using Computer-assisted Auditing Techniques in the Private –Sector Auditing Enterprises of Iran

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ABSTRACT

An auditor may consider computer as an essential tool in for his auditing purposes. In the present article, the existing barriers of using computer-assisted auditing techniques in the private-sector auditing enterprises of Iran have been discussed. To do this, some questionnaires were given to the Iranian certified auditors who were the professional auditors of auditing institutes of Iran. To be ensure of the reliability of the questionnaires, the researchers used Cronbach's alpha which was shown to be 92%. The Cronbach's alpha proved the reliability of the results. Also in the present article, descriptive statistics was used to analyze the data and χ^2 for testing the hypotheses. The results showed that the most important barrier of using computer-assisted auditing techniques by the private-sector Iranian auditors is their unfamiliarity with computer-assisted auditing techniques.

KEYWORDS: Computer-assisted Auditing, auditing techniques, certified Iranian auditors, CAATs.

1. INTRODUCTION

Nowadays, computer is used as an ideal technology in various professions since it does its job with more accuracy and speed than what humans do. Many organizations have opted to utilize sophisticated information technologies for developing their business process support as well as improving their information processing activities (Ramamoorthi, 2004). This increases the need for CAATs in such businesses to allow auditors to continue to be able to perform their review and monitoring tasks effectively, as well as to play key roles in the process of innovation in these businesses more generally.

To meet the challenges of rapid advances in client information technology usage, audit standards suggest that auditors adopt computer-assisted audit tools and techniques (CAATs). Adoption of Computer Assisted Audit Techniques and Tools (CAATs) has not only become a beneficial choice for some businesses, but has become a fundamental part of many audit methodologies.

Auditing institutes have to use computer because of increasing efficiency and usefulness of their activities while implementing auditing techniques. However the general goals of auditing in computer-assisted version does not change a lot, in auditing techniques using computer may be viewed necessary.

Computer Assisted Audit Tools and Techniques are computer tools and techniques that an auditor (external or internal) uses as part of their audit procedures to process data of audit significance contained in an entity's information systems (Singleton, 2003). CAATs permit auditors to increase their productivity as well as that of the audit function (Zhao et al. 2004, 389).

CAATs may be used in performing various auditing approaches such as:

- 1) Test of transaction details and balance of accounts
- 2) Analytical examination approaches
- 3) Test of observing the general computer controls
- 4) Test of observing the implicational computer controls

Thus, an auditor must consider appropriate manual audit combined with computer-assisted auditing techniques while programming auditing. This matter causes an increase in the efficiency and usefulness of auditing activities.

It can be pointed out that the efficiency of auditing programs in evaluating the auditing practices may be improved using computer-assisted auditing some techniques including the followings:

- Using computer in processing some transactional groups (for testing the whole or a major portion of transactions) may be more effective than using other selected methods.
- While implementing analytical programs, transaction tests or details and preparing non-normal reports may be more effective when a computer is used than when traditional methods are applied.
- Using CAATs may make the implementation of additional proving tests more effective than focusing on the controls and tests related to observing appropriate approaches.

By using advantages of information technologies, auditors can verify internal controls, access records and generate information with productivity and efficiency, which could not be matched with manual audit approach.

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The acceptance and usage of CAATs between auditors is very important, because CAATs increase audit effectiveness and efficiency. Recent audit standards encourage auditors to adopt CAATs to improve audit efficiency and effectiveness (AICPA 2001, 2002a, 2002b, 2002c, 2006). Prior CAAT research is generally descriptive in nature. Recent research suggests that CAATs acceptance is fairly low and varies among firms (Liang *et al.* 2001; Debrecey *et al.* 2005; Curtis and Payne 2008). Why is that happening?

Only a limited number of academic studies have been conducted seek to aid wider understanding of the issues of CAATs adoption. While academic research on this topic is very limited, there have been a number of surveys carried out by professional bodies to which auditors belong, outlining CAATs usage in practice across a variety of industries.

Diane Janvrin has studied the auditor acceptance of CAATs. Results indicate that performance expectancy and facilitating conditions such as organizational and technical infrastructure support influence the likelihood that auditors will use CAATs. These results suggest that to increase CAAT usage, audit firm management may want to develop training programs to increase auditors' degree of ease associated with using CAATs. Furthermore, audit firm management may want to enhance their organizational and computer technical support for CAATs to encourage their usage (Diane Janvrin *et al.* 2008).

Roger Debrecey has evaluated the nature and extent of the utilization of CAATs in financial institutions. In particular, his study established the extent and nature of use of generalized audit software (GAS). He found that the extent and range of use of GAS varies widely between the institutions. Internal auditors see GAS primarily as a tool for special investigations rather than as foundation for their regular audit work.

In the UK/Ireland the Institute of Internal Auditors (IIA) conducted their first survey touching on CAATs usage at the end of 2002. This survey revealed hesitation amongst those overseeing internal audit departments in the UK related to automation development. The key reason cited for this was that they perceived there was a lack of software available in the market that met their needs as internal auditors. The survey suggested that some software packages were too 'cramping' in their requirements to be directly applicable to working audit methodologies in the businesses that evaluated them – requiring too big a change in the methodologies used to justify the costs for the benefits to be accrued.

Sanati Arasteh (Sanati Arasteh, Alireza, 1999) has studied the factors which impede CAATs in Iran. The results of his study showed that one of the most important factors which are a barrier in developing CAATs in Iran is the lack of enough training and expertise in this field. However, the development of computer-assisted auditing in Iran requires other factors such as time, social, and economic conditions of the country.

Hshem Ajami (Ajami, Hashem, 1999) analyzed the impeding factors in using computers in auditing. The results of his study revealed that most of the auditing managers did not use computers and software in their professional comments on financial statements because of their unfamiliarity with the capabilities of the computers and software as well as the way of using computers and software.

Rozita Salehi (Salehi, Rozita 2005) made an analysis of the barriers of using supporting systems of decision making in independent audit. Her study showed that the lack of enough familiarity with the systems, Persian texts and sources, and appropriate software causes these tools not to be used in auditing. The low cost of the system, matching the software with accounting systems should not stop their use in auditing practices, as she believes.

Considering the studies carried out before, the following research question can be posed:

Research question: Why don't Iranian certified auditors use this technological tool appropriately in Iran?

MATERIALS AND METHODS

Regarding the posed research question and the existing literature, the following hypotheses were formed:

Hypothesis 1: Unfamiliarity of the auditing institutes with computer-aided auditing techniques is a barrier in implementing computer-assisted auditing techniques.

Hypothesis 2: The high expense of hardware and software stops using computer-assisted auditing techniques.

Hypothesis 3: The high expenses of training stops implementing computer-assisted auditing techniques.

Hypothesis 4: Problems resulted from using software in real situations is an obstacle in using computer-assisted auditing techniques.

To test the above hypotheses, a questionnaire was developed based on the key items used in them. The barriers of computer-assisted auditing techniques was the dependent variable in this study; while the high cost of software and hardware, expenses of training, and the problems of using software in real conditions were all the independent variables used in the present study.

Considering the aim of this research, the type of the hypotheses, the kind of questionnaire (level type), as well as the ease of making and interpreting the Likert Scale in comparison with other kinds of scales (like semantic difference, Serestun, Gautman, and Bugardus), the Likert Scale was used. Each of the items in the questionnaire was to be answered by choosing one of the five given options, namely THE LEAST, LITTLE, MODERATE, MUCH, and A LOT OF.

As far as the title of the research proposes, the used sample is “the Iranian certified auditors”. The 168 auditing institutes participating in the study have 564 certified auditors as their employees. The sample was determined using statistical techniques of 100.

The questionnaire of this research included seven general questions related to the participants’ general sights, thirty close-ended question packages regarding the hypotheses, and one open-ended question concerned with their views and the administrators. From among the 100 distributed questionnaires, 86 ones were completed and gathered.

RESULTS AND DISCUSSIONS

To evaluate to what degree the employees’ unfamiliarity with computer-assisted auditing techniques impedes using these techniques, the κ^2 test based on scores and the least, little, moderate, much, and very much groups was implemented. As it can be seen in the Table 1, since the mode is the choice “a lot of barrier”; because the κ^2 value is 32.791 and the alpha level is meaningful at 0.0001 which is very less than 0.01. We can state with a certainty of 99% that the unfamiliarity of the auditors of institutes with computer-assisted auditing techniques highly impedes the use of computer-assisted auditing techniques.

To examine the effect of the expenses of software and hardware on implementing computer-assisted auditing techniques, the researchers used κ^2 based on the participants’ scores and various groups of the Likert Scale options. As it can be seen in the Table 2, since the mode is the choice “moderate barrier”, and since κ^2 value is 10.651 and also the α is meaningful at 0.014, less than 0.05, we can state with a certainty of 95% that the difference is effective and that the high expense of software and hardware moderately impedes the implementation of computer-assisted auditing techniques.

To study the effect of training costs on the implementation of computer-assisted auditing techniques, κ^2 based on the participants’ scores and the questionnaires were distributed among the participants. As it is clear in the Table 3, since the mode is “little barrier” and also κ^2 is 29.581 meaningful at 0.0001 which is less than 0.01, with a certainty of 99% it can be accepted that the high cost of training impedes the implementation of computer-assisted auditing techniques.

To analyze the problems caused by the application of software while implementing computer-assisted auditing techniques, the κ^2 test was run according to the questionnaires results. As it can be seen in the Table 4, since the mode is “moderate barrier”, the κ^2 amount is 50.465, meaningful at 0.0001 which is less than 0.01, with 99% certainty it can be said that the difference is significant and problems of using software is a barrier in the implementation of computer-assisted auditing techniques.

Table 1: (Descriptive - κ^2); the First Hypothesis

Differential Level	κ^2	Mode	d.f.	Difference	Expected	Observed	Test Testee
0.0001	32.791	Much barrier	3	.....	.....	.....	The least barrier
				-16.50	21.50	5	Little barrier
				-9.50	21.50	12	Moderate barrier
				14.50	21.50	36	Much barrier
				11.50	21.50	33	Very much barrier
						86	86	Total

Table 2: (Descriptive - κ^2); the Second Hypothesis

Meaningful level	κ^2	mode	d.f.	Difference	Expected	Observed	Test Testee
0.014	10.651	Moderate barrier	3	-9.50	21.50	12	The least barrier
				0.50	21.50	22	Little barrier
				11.50	21.50	33	Moderate barrier
				-2.50	21.50	19	Much barrier
				.....	.....	.....	Very much barrier
						86	86	Sum

Table 3: (Descriptive - κ^2); the Third Hypothesis

Meaningful level	κ^2	mode	d.f.	Difference	Expected	Observed	Test Testee
0.0001	29.851	Little barrier	4	-9.20	17.20	8	The least barrier
				14.80	17.20	32	Little barrier
				2.80	17.20	20	Moderate barrier
				4.80	17.20	22	Much barrier
				-13.20	17.20	4	Very much barrier
						86	86	Sum

Table 4: (Descriptive - κ^2); the Fourth Hypothesis

Meaningful level	κ^2	mode	d.f.	Difference	Expected	Observed	Test	Testee
0.0001	50.465	Moderate barrier	3	.....	.....	.....	The least barrier	
				-1.50	21.50	20	Little barrier	
				25.50	21.50	47	Moderate barrier	
				-3.50	21.50	18	Much barrier	
				-20.50	21.50	1	Very much barrier	
					86	86	Sum	

CONCLUSIONS

Although application of information and communication technologies in transaction processing results in specific risks, it also gives opportunities for improvement of control procedures. Computer Assisted Audit Techniques (CAATs) have been seen as an important element of both the external and internal audit process for many years. Specific guidance on the use of CAATs is presented by several auditing standards setters (AASB 2001, 2004; IAASB 2003b; ISACA 1998). Yet, there is “virtually no research interest” in data analysis. This study makes a first step to provide evidence on the barriers of using computer-assisted auditing techniques in the private –sector auditing enterprises of Iran.

According to the stated hypotheses and obtained results the findings of the present study can be summarized as follows:

Focusing on the obtained results reveals that in all of the three studies hypotheses like “*unfamiliarity of employees, managers, and auditors with computer-assisted auditing techniques is a barrier in implementing the computer-assisted auditing techniques*”, or “*the lack of training and expertise in employees, managers, and auditors is a barrier in implementing the computer-assisted auditing techniques*” have been all confirmed.

On the other hand, a careful look at these three studies shows that the high cost of training and implementing computer-assisted auditing techniques has been rejected in all of them. Thus, it can be resulted from the present study that training or implementing computer-assisted auditing techniques is not a barrier while practicing the techniques.

Finally, we can state that while the hypothesis of “*lack of appropriate auditing software*” has been confirmed in Ajami’s study, in the present study the hypothesis “*the problems caused by using the software in real conditions*” has been rejected which proves that currently there are appropriate software for auditing purposes with no special implementation. It may be a good point to state that there is auditing software but most of the auditors are not informed of the existence of such software. Perhaps the reason of this problem goes back to the weak informing in accounting profession.

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