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### Identification of Factors Affecting the Quality of Auditing in Information Technology (IT)

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#### ABSTRACT

The study aimed to investigate factors affecting the quality of the IT audit and rating of these factors. The selected population is independent auditors who are members of the Auditing Organization of Iran. Due to The facilities available to researchers, the three cities of Yazd, Kerman and Tehran were selected using random sampling, and by using Cochran, a sample consisting of 410 audits was covered and a total of 384 approved responses were received. Factor analyses were used to introduce 7 affecting factors and all of the questions were rated by TOPSIS technique. The ranking determined that "interaction between the client and the auditor" ranked as first "audit team members' knowledge of accepted principles of accounting and auditing" ranked as seventh and among the considered factors "appropriate ways to conduct fieldwork by members of the audit team" ranked as first and "knowledge of audit team members about accepted accounting principles" have accounted in the last ranking.

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#### INTRODUCTION

Auditing is a Regular and systematic process for collecting and objective evaluating of evidences for management claims in relation to economic activities and events, to determine the world according to these claims or statements including predetermined criteria and also to report the results to Beneficiaries. So auditing is independent review of the management claims of an organization that should have been developed based on a set of guidelines and standards. For the audit to be classified as auditors for the audit of classified information, investigation should be based on information technology which may be part of the auditing of financial statements or may be defined as a separate activity. IT auditing is a systematic process of collecting and objective evaluating of evidences and supporting one or more claims of information systems, procedures and operations of the organization. Assessment of evidences obtained during the audit shows that if the information systems are secure, Data will maintain proper and the Company's operations will meet the requirements of organizational goals efficiently and effectively. IT auditings are presented vastly and internationally, so that the activities, efficacy, controls and basic systems safety are identified for the identification of opportunities to have improvement. Varying definitions exist for IT audit quality. These definitions can include Ideas like impact or effectiveness, completeness toward various standards, efficacy or cost. One of the objectives of IT auditing is to provide a guarantee that management is that an automated process or system has achieved its objectives. Nowadays, computer deals can be done in a short time. Almost every aspect of modern life, are closely related to computer systems. Trading has been done with a High speed and also in high volume; this simply shows that the old auditing techniques are no longer effective. These techniques can no longer guarantee the correctness and integrity of company's conducted transactions. Advances in information technology have led the company to do their business transactions using new tools such as data electronic exchange and databases. These technologies will provide updated auditing information for users. Thus, users having access to updated information of organization may have little interest in annual financial statements based on historical data and Comments of periodic audits. In fact, users' demands about auditing profession have changed and they are mostly willing to know what the comments of auditors are about the company Reliability of updated information. So it can be said that the developments of information technology has increased the demand for

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information technology audit. Accounting and auditing profession may be more exposed to being used than other areas of financial knowledge fields and using the new environment facilities. New environment for recording and reporting the data has a significant impact on the efficiency and effectiveness of this profession. Quality of IT audit which determines the performance of the audit function is dependent on several factors such as: the ability of the auditor (including knowledge, experience, ability to adapt and technical efficiency) and professional implementation (including independence, objectivity, professional care, conflict of interest and judgment). Audit quality structure is multidimensional, but invisible, so it is extremely difficult to be measured. Since many factors affect the quality of IT Audit, setting a framework to identify this type of Audit quality is crucial. Hence, IT Audit can be affected by many factors, this study aimed to identify and rank the effective factors.

#### *Theoretical background and review of literature:*

In the current era, the perspective of audit society has been modified from functional view to analysis one, and auditors can promote their focused attention from data collection and interpretation, to analyzing, they can also increase the accuracy and reliability of financial statements. Instead of spending energy on data collection, Furthermore, time should be managed in a way so that reports and information are available to all users. The use of information systems and accounting and auditing software as well as the utilization of electronic information, have created new developments in the world of e-commerce for a long time. Nowadays most financial transactions are conducted by using information systems and their complexity implementation is increasing every day, and auditors are obliged to rely on financial reports generated by these systems in performing the activities. Information technology has affected on the audit profession in how the audit is done and the necessary to knowledge to draw conclusions about the operation or effectiveness of the system, efficiency, honesty and integrity of records. At first, this impact was on the change of processing environment and as the auditor's needs started to grow with the specialization of technology and skills, IT audit started to grow.

#### *IT Audit quality:*

One of the goals of IT audit is to provide assurance for the management that an automated system or process has achieved its objectives. Factors affecting the quality of the audit include various features of the audited processes and systems, processes or techniques used to implement the audit, audit staff behavior, organizational environmental and many other factors. Naturally, this work expands to the point that the structural model of IT audit quality and its consequences are provided; however, there is no test on these features for identifying the measurable components of the IT audit quality [12]. In the survey done by Epstein and Geiger (1994) it was found out that 70% of investors believe that audit should provide absolute certainty that there is no misrepresent the significance of the financial statements. Assessment and measurement of audit quality is very confusing and unclear, and the results of audit quality are not directly visible. Audit quality control procedures need to venture to develop and support higher standards for oversight of the audit process. But the negligence or fault of the auditors usually appears like what happened with Enron affair bankruptcy business unit. When a company experience failure and auditing failure, working pressure, will reveal scandal . Also, in some cases lack of accountability and quality may not been disclosed in the light of issued report.

Since that audit quality is multidimensional and invisible, the researchers are searching for substitutes or indicators of audit quality as experts to determine the data and quality results .Some researchers use the concrete outside data as a basis for evaluating the quality of their audit. In the absence of indicator to assess quality of audit, the auditor reputation can be used.

Di Angelo in 1981, defines the quality of the audit assessment of that the auditor first detects the important distortions in the financial statements or the accounting system and then reports the important discovered distortion. The likelihood that the auditor detects important distortion depends on auditor competence and the possibility that the auditor reports the important discovered also depends on the auditor's independence. The definition of this concept Di Angelo expresses the actual quality of audit based on users' perceptions or market deduction of the quality of the audit. Using this definition in expression of real quality of audits is carried out with the basic assumption that quality of audits reflects the actual quality of the audit [1]. Palmrvs (2009) defines audit quality based on the auditor accredit, since the auditor's objective is to create confidence in the financial statements, the audit quality means the audited financial statements is free of misstatement.

#### *Review of the literature:*

Lin *et al* [11] investigated the views of practitioners, academics and students to identify the knowledge and skills required for accounting students which indicated there were significant differences between the views of different groups and reform of accounting education is not only necessary but also binding. So it should be used as an efficient tool in this direction. Given the importance of this information is necessary to identify the factors affecting the audit quality. Rakvtan *et al* (2007) in a study called "technical solutions of auditing and IT" concluded that the practitioners, academics and the intellectual skills, IT skills, communication skills,

interpersonal skills, accounting knowledge and leadership are paramount. The study Dowling and Lynch (2007) to investigate the factors influencing the design of accounting systems, support systems of audit of four major institutions were reviewed in 2004 and 2005. In their study, the support systems of audit institutions have been compared on the basis of factors such as how to create a policy and applying the system, manual or automatic adjustment of the client's case, the automatic integration of the results of the decisions of the audit and the role of the audit system in process of audit. Considerable differences appeared in the design of support systems of audit institutions is providing important insights which can be effective in generalizing and integration of findings of studies related to audit support systems. Kim (2009) examined the adoption of information technology and impact of its features and complexity of the company. In their study, the effective use of the system, the prospects of success and comfort of functions are the factors which examined by the characteristics of IT and complexity of companies. The results show that the complexity and ability and knowledge of information technology had not significant impact on audit quality. Results Astvyl 1 (2012) investigated the factors affecting the quality of IT audit, auditor independence, knowledge of IT auditors and audit capabilities, knowledge of business processes, accountability and audit work plan as an independent variable versus dependent variable, IT audit quality and the significance of these factors were analyzed by statistical tests. The research Astvyl *et al* (2012) respondents are questioned to assess the impact of any agreement on audit quality IT by using five Likert scale range from no effect to infinite influence. Respondents ranked IT and finance, and the methodology as more important than other factors for IT audit quality. Havlka *et al* [9] in their research based on audit quality using information technology theory of group processes, the audit quality on the basis of information technology has been analyzed.

His research sample selected from the group auditors and IT managers. The results show that IT is affecting the quality of the audit work.

#### Method:

Objectively this study is practical and according its procedure is and exploration-survey. The population studied in this research includes the official auditors independent audit firm working in three provinces of Yazd, Kerman and Tehran in 2013 respectively. A method of sampling in this study due to the ease of use and availability of Yazd, Kerman and Tehran is simple random sampling. Cochrane methodology was used to determine sample size. The number of independent auditors mentioned in the province for statistical population was considered infinite then number 5/384 was obtained after applying the formula. To get this number, 410 questionnaires were distributed among the independent auditors, audit society's members of Yazd, Kerman and Tehran. 384 questionnaires were approved after collecting the opinions of the ones.

Instrument of this study is a questionnaire from Havlga and Mrhat written in 2012, the University of Miami, has 37 questions modified as appropriate to Iran. Questions of designed questionnaire are relative scales; attempt to use the Likert and to arrange for options too high, high, medium, low and very low, Report 5, 4, 3, 2, and 1 considered out. Using a standardized questionnaire adapted from article 37, component was distributed to determine the characteristics of effective IT audit quality and audit of the 410 elected members of the Independent Auditor of the province of Yazd, Kerman and Tehran. Of the total of 384 questionnaires were analyzed and verified using factor analysis and test results from the Kaiser-Meyer-Avklyn and Bartlett test, a high correlation between questionnaire scores were determined. The Cronbach's alpha coefficient was high reliability and validity. Using Spss and factor analysis were used to determine the construct validity.

#### Research findings:

The demographic data of respondents using descriptive statistics and data on the components of the questionnaire were analyzed. Demographic characteristics of the respondents, including education, age, work experience and familiarity with computer accounting presentation is extracted from the questionnaire. Table 1 shows declarative results.

**Table 1:** Descriptive findings.

|                           |                      |     |      |
|---------------------------|----------------------|-----|------|
| Groups of subjects        | Accounting teachers  | 20  | 5.2  |
|                           | Independent Auditors | 364 | 94.8 |
|                           | Total                | 384 | 100  |
| Education                 | B.A.                 | 200 | 52.1 |
|                           | M.A.                 | 178 | 52.1 |
|                           | PhD.                 | 6   | 52.1 |
|                           | Total                | 384 | 52.1 |
| Audit Experience          | Less than 5 years    | 39  | 10.2 |
|                           | 6 to 10 years        | 145 | 37.8 |
|                           | 10 to 15 years       | 105 | 27.3 |
|                           | 15 to 20 years       | 62  | 16.1 |
|                           | More than 20 years   | 33  | 8.6  |
|                           | total                | 384 | 100  |
| Computer knowledge to use | Very much            | 130 | 33.9 |

|  |          |     |      |
|--|----------|-----|------|
|  | Average  | 222 | 57.8 |
|  | Not much | 32  | 8.3  |
|  | total    | 384 | 100  |

20 respondents are from professors of accounting and auditing doing the independent audit activities and 364 persons are also independent auditor. 200 respondents have bachelor's degree, 178 master's degrees and doctoral degree in accounting and auditing are 6 persons. 37.8% of respondents have between 6 and 10 years auditing experience, and 57.8 percent of the respondents have modest familiarity with computers and about 33.9% is too much. Having ensured of a high level of correlation between the scores of questions regarding the high correlation coefficient which is specified between the results of questionnaire of Kaiser-Meyer Avklyn Bartlett test, it can be concluded that the factor analysis is justified. More than one-sample t-test was performed and the factors have been investigated and determined that all factors have significant relationship with IT audit quality on the other hand; this factors are more effecter on the quality of IT audit. Finally, using the Delphi technique of TOPSIS 2005 software and components, all factors were ranked and it was clear from the agents factors 'interaction between the auditee and the audit team as highest factor and the knowledge of audit team members about accepted principles of accounting and auditing" the lowest rating and Among the components, Question 13 "performing appropriate manner by audit's members for audit fieldwork " got the highest and question 37, "sometimes accounting principles generally accepted auditing and accounting team members" have the lowest rank. Independent sample t-test assessed the importance of each of the components set forth in the IT audit quality from the perspective of the participants. The results showed among 37 components, assumption of which proposed component has no effect on IT audit quality will be rejected. And it was also clear that respondents have agreed with importance of components in the questionnaire. After omitting 11 components, 26 were classified into 7 factors that include:

1. Interaction between the auditee and the auditor
2. The risk-based audit and quality control
3. Details of the audit information about IT and accounting system
4. Mastering the auditor on the audit and business processes
5. Experience and ability of the audit team
6. The auditor's understanding of the audit purpose and its process and the audit firm knowledge
7. The audit team members' knowledge of accepted accounting and auditing principles

**Table 2:** Seven Factors

| Component | The assessed characteristic  | Number of questions | label of questions     | Cronbach's alpha coefficients |
|-----------|--|---------------------|------------------------|-------------------------------|
| 1st       | Interaction between the client and the auditor   | 6                   | 13, 17, 21, 29, 31, 35 | 0.76                          |
| 2nd       | Risk-based audit and quality control   | 4                   | 5, 6, 25, 26           | 0.703                         |
| 3rd       | The auditor's knowledge of information technology and accounting system                                | 4                   | 16, 18, 19, 20         | 0.704                         |
| 4th       | Dominance of the auditor on the audit and business processes   | 3                   | 10, 27, 28             | 0.724                         |
| 5th       | Ability and experience of the members of the audit team  | 3                   | 12, 15, 22             | 0.757                         |
| 6th       | The auditor's understanding of the purpose and the audit process and understanding the auditee company | 3                   | 1, 2, 3                | 0.739                         |
| 7th       | The audit team members' knowledge of accepted principles of accounting and auditing                    | 2                   | 36, 37                 | 0.728                         |

Using TOPSIS technique components were ranked in the questionnaire. The results showed that the most important component of effective IT audit includes: Audit fieldwork conducted in a manner appropriate by its team members, the audit team meet the needs of the auditee, ethical standards of members of the audit team, Minimum 2 years experience in audit team members in industry and the lowest component of the respondents included: The auditor's understanding of the audit process, audit team members' knowledge of generally accepted auditing principles(GAAP), Audit team members have enough information about the system of accounting, audit team members are aware of the generally accepted auditing principles. In addition, the most important among seven factors is the interaction between the auditee and the auditor and least significant is audit team's knowledge about generally accepted auditing principles.

**Table 3:** Seven Factors ranking.

| Questions  | Final Index of each factor | Ranks |
|--|----------------------------|-------|
| Interaction between the client and the auditor   | 0.623                      | 1     |
| Ability and experience of the members of the audit team  | 0.54                       | 2     |
| Dominance of the auditor on the audit and business processes   | 0.534                      | 3     |
| Risk-based audit and quality control   | 0.519                      | 4     |
| The auditor's understanding of the purpose and the audit process and understanding the auditee company | 0.478                      | 5     |
| The auditor's knowledge of information technology and accounting system                                | 0.41                       | 6     |
| The audit team members' knowledge of accepted principles of accounting and auditing                    | 0.36                       | 7     |

**Table 4:** Ranking of components.

| Questions | Final Index of Each Question | Ranks |
|-----------|------------------------------|-------|
| 37        | 0.3                          | 26    |
| 19        | 0.314                        | 25    |
| 36        | 0.327                        | 24    |
| 1         | 0.334                        | 23    |
| 15        | 0.35                         | 22    |
| 2         | 0.357                        | 21    |
| 9         | 0.359                        | 20    |
| 28        | 0.373                        | 19    |
| 6         | 0.38                         | 18    |
| 21        | 0.387                        | 17    |
| 10        | 0.388                        | 16    |
| 18        | 0.39                         | 15    |
| 20        | 0.422                        | 14    |
| 27        | 0.424                        | 13    |
| 26        | 0.429                        | 12    |
| 16        | 0.432                        | 11    |
| 31        | 0.436                        | 10    |
| 3         | 0.444                        | 9     |
| 22        | 0.445                        | 8     |
| 5         | 0.474                        | 7     |
| 35        | 0.48                         | 6     |
| 25        | 0.4812                       | 5     |
| 12        | 0.4816                       | 4     |
| 17        | 0.491                        | 3     |
| 29        | 0.502                        | 2     |
| 13        | 0.51                         | 1     |

**Conclusions and recommendations:**

Of respondents considered the most important factors in improving IT audit quality is "interaction between the auditee and the audit team" and "audit team to meet auditee's needs," ,so we can increase and improve audit quality through increasing the interaction between the two groups and correct responses of audit team to auditee

For this purpose, the auditees are recommended to have the most interaction with audit team and auditors also should try to ensure and to meet information needs of auditee to have the trust and interaction, because the positive effects of such interaction will in both groups. Of responders also "doing the right approach to audit fieldwork by the audit team members." has more important and the highest rank or position. The auditors recommended adopting specific procedures and techniques appropriate to characteristics of the companies, and necessary actions to a successful and comprehensive audit. The subject of this study and different fields of auditing and accounting are similar applying subjects, so much more time to spend this kind of research results can be obtained more efficiently. When researcher spends three and four months to collect and produce relevant data It is recommended to spend more time for this type of activity to appear definitely "eye-catching and effective results. The population is larger research more accurate results can be obtained. The population of paper is considered in some of countries, it is recommended for future studies to consider larger population than "more of the options available (Tehran, Yazd, Kerman), to get precise and detailed look at the overall method for implementing IT audit found the country. Exploratory factor analysis was used in this research, we recommend the use of other methods, and the prioritizations of the most important of them are selected. The applicability of this type of research causes to also be done in other regions and with due regard to demographic, social, cultural features we can attain demands of the people of the community. The research is qualitative and variables were derived through questionnaire and by using statistical techniques structural equation have been studied. Because there is no quantitative record in this area, it is recommended to take quantitative model in order to measure and estimate the variables presented in another study.

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