

Recognition of the Skills and Knowledge of Iranian Auditors at workplace

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ABSTRACT

The purpose of this research is to investigate and identify the skills, knowledge, and attitudes required by today's auditors in Iran. To this end, a questionnaire was distributed among the auditors of audit firms located in Mashhad to determine the significance of the skills identified for the efficiency of auditors and the performance of auditors in each of the skills. For data analysis, the exploratory factor analysis and the T test student were used. The results show that the most important skills required from the auditors' point of view are accounting and auditing practices, mastery of accounting and auditing standards and regulations, and honesty. The 37 of the examined skills were categorized into 6 groups, which were titled as the communication and decision-making competency, technical and functionality competency, planning and future planning competency, organizational perception competency, subjective competency, and professional competency. The greatest gap is between the performance and the importance of planning and foresight competency and the shortest gap is between performance and the importance related to the competence of organizational perception. Moreover, the results indicate that auditors have a good performance in complying with legal requirements and paying attention to ethical values and ethics. The findings show the need for review in the areas of accounting and auditing to improve the auditor's competencies through adding courses entitled, communication's skills of the vocabulary, audio and writing in the course syllabus, and using the apprenticeship course at different levels of education.

Keywords: Skills, knowledge, attitudes, competencies, auditors.

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1. Introduction

Today, various types of accounting scandals have been reported in different parts of the world, and the center for these scandals is related to Enron and WorldCom companies in the United States of America from 2001-2002 (Siriwardaneet al., 2014). Many other countries have witnessed at least one scandal in the last century. Usually, in accounting scandals, the blame has come to the attention of the auditor (Alsop, 2003; Merritt, 2003; Lumb, 2012). According to Curd & Thorpe(2008), although auditors do not have to prevent fraud, they must recognize it to not continue. While fraud detection is not the main task of auditors, the community is tired of hearing accounting scandals every year. As a result, at least, the community expects auditors to fulfill the expected job roles. So the next question is, "Do the auditors carry out their duties and responsibilities in a full, strict and, diligent manner?" According to the International Federation of Accountants, "The auditor's objective is to identify and assess the risk of false statements, either due to an error occurred or fraud "(2010, p. 264). Undoubtedly, with the growing scandals and failures that occur in auditing around the world, auditors' performance is subject to greater scrutiny by both statutory auditors and the general public (Gandel, 2008; Johnson, 2010; Nuthalland Verma, 2011). While determining whether auditors are guilty or not in accounting scandals is beyond the scope of this research, the recognition of the skills, knowledge and attitudes necessary for auditors to carry out their tasks in their current business environment is a matter of concern in this research.

In this study, special attention is paid to the auditing's environment - where the audit profession is precisely set and the community has more expectations and responsibilities than those that existed in the past for auditors. We are also interested in knowing the most important skills, knowledge, and attitudes we are examining. Another question that the research intends to answer is to what extent do the audit partners work well in each of the skills, knowledge, and attitudes?

2. Review literature and previous researches

The rapid growth of audit institutions over the past few decades has led to an increase in the importance of human resources management in these institutions as a result of the significant increase in auditors and staffing of audit firms. Belkaoui (1989) considers human resources as the most important asset of their audit firms and states that "the success of audit firms depends on the ability of managers to motivate employees, keep them satisfied, and maintains them." On the other hand, the introduction of new rules governing audit units, changes in economic laws and regulations, and the formulation of new accounting principles and rules made audits a complex and dynamic concept that broadens its scope rapidly and its future implications can have behavioral and occupational effects.

Today, employers seek for graduate students with a wide range of skills and qualities (Mohamedand Lashine, 2003). Therefore, graduate students are expected to develop their professional knowledge in their professional lifetime and gain more comprehensive and diverse skills (Howieson, 2003). Many authors have expressed the need to change the curriculum due to the difference between the curriculum and the method of accounting in practice. In order to improve the quality of education and reduce the gap between expectations for employer demand, academic accounting education needs to be reformed.

Audit skills are defined by the ability to perform relatively complex tasks, in an appropriate manner and based on accumulated knowledge in specific fields

(Wright, 1988). In the audit literature, there is seldom an inquiry about the skills, knowledge, and attitudes of auditors, and is a major study on the competence of accountants, internal auditors, and management accountants. Previous studies about auditing have emphasized on issues covered by academic audit periods and on individual attitudes of (also referring to personality traits or individual characteristics) expert auditors and did not address the skills, knowledge, and attitudes required by the auditors. Individual features considered in the previous studies are based on a list of expert psychological features created by Shanteau(1987).

The individual characteristics considered in the previous studies are largely related to the inherent abilities. Ton and Libya (1997) also agree that personality traits are almost unchanged. The gap between industry and academic education and the inadequacy of these pieces of training with the needs of society and social demand are fundamental problems that have been emphasized for many years (Ejtehadi and Behrouzi, 2006). The study of the accounting training program in Iran shows that in general, unlike the increase or decrease in the units, there are no substantial changes in the academic accounting curriculum, in a way that responds to the changes in the accounting and auditing profession. In the globalized labor market, organizing work based on teamwork, job rotation, multi-skill and autonomy, and empowerment of staff, and reduced management levels have revolutionized student education patterns. Accordingly, the patterns emphasized on the scholarship education were underscored. In new approaches to curriculum planning it has been emphasized a lot on problem-solving, and more importantly, problem creation, creative design, and information processing power. In a study by Leroux and Luffier (1995) in Canada about the basic skills needed by the labor market, from employers' point of view, skills that help the increase of employment are grouped into three groups.

1. Academic skills include communication skills, critical thinking, problem-solving ability, and recognition of the importance of need in life.
2. Personnel management skills include the ability to set goals, act responsibly, self-confidence, take the lead in affairs, and have acceptable attitudes.
3. Group work skills include the ability to work with others, respect for others, and the ability to lead and guide the group.

Lin, Sweet, and Anisef (2003) have divided the skills, competencies, and job market skills needed into three main groups, including academic skills, individual management skills, and teamwork skills. Academic skills are a group of skills that provide a solid foundation for gaining, maintaining, and progressing in a job and achieving the best possible outcomes. These skills include communication, thinking, and learning. Individual management skills, this combination of skills and attitudes are needed, such as the attitudes and behavior that are positive and responsible for obtaining, maintaining, and advancing in the job. Workgroup skills are skills such as the ability to collaborate and work effectively with others that are needed to work with others in a job and to achieve the best possible outcomes. A report from the review of the curriculum, course content, and structural methods in 188 universities and colleges in the United States by Johnson et al. (2003, p. 262) shows that the change in audit training generally reflects a slow progress than the demands of academic reformists and the recent effective incidents in this career. Given the importance of this topic, the following questions are raised.

The first research question

Identification and ranking of skills, knowledge, and attitudes which are necessary for

the performance of auditors.

The answer to the above question is two steps.

- 1) Creating a list of skills, knowledge, and attitudes important for the auditors.
- 2) Ranking the importance of the skills, knowledge, and attitudes mentioned above.

To select the discussed skills, knowledge, and attitudes, we use Palmer et al. (2004), the most comprehensive study of accounting competence, which includes: communication, interaction, general business knowledge, accounting knowledge, problem solving skills, information technology and features, abilities and expertise for auditors, and all of these seven skills mentioned in the study of Ton (1999), as essential features for a superior audit performance. Further, the above-mentioned skills have been identified in Kullberg et al. (1989) as the qualification criteria. In addition to the foregoing, this study will include some other issues that have been investigated in Siriwardaneet al. (2014), which are as follows:

1. *Professional Integrity*: Research by Pritchard (2006). Becker, Haugen, and Mattson (2005) have shown that auditors have sometimes helped customers hide bad financial information and ignored the evidence of fraudulent financial reports. In other words, they have violated their professional conduct.

2. *Professional skepticism*: According to American and international accounting standards, professional skepticism involves the questioning mind and the critical evaluation of audit evidence (Public Accountants Supervision Board, International Federation of Accountants, 2010a) and in this study, both ways of professional skepticism are examined includes: 1) questioning mind and 2) the ability to assess the audit evidence.

3. *Negotiation Skills*: Though negotiations between the auditor and the client usually occur between peers or audit directors and senior financial officers, auditors at all levels may have situations to negotiate with their customers (or their assignment managers). This is especially true when there is a need for improving auditing or time pressure (Gibbins, McCracken and Salterio, 2007). Therefore, we consider negotiating skills as a skill, knowledge, and attitude that the auditors should have to effectively conduct audits.

4. *The ability to understand customer business*: Many auditors adopt a methodology for auditing that requires a strategic risk assessment of their business as a first step in assessing business risks. (O'Donnell & Schultz, 2005). During the strategic assessment phase, auditors focus on all aspects of the organization, which include the organization's strategy to create value for customers (Eilifsen, Knechel, and Wallage, 2001). In order to detect deceptive behavior, auditors must have a comprehensive understanding of the customer's business. The focus of this research is not on the customer's knowledge through experience, but on the ability to understand the customer's business, even if it is a new customer.

5. *Ability to assess risk*: Auditors traditionally use a risk-based approach to minimize the likelihood of an adverse audit opinion. Because of the new emphasis on business process risk, auditors also argue for a broad range of potential risks to the client organization (Bell et al., 1997; Eilifsen et al., 2001). The International Standard on Auditing No. 315 identified three procedures for risk assessment: the question of managers and others in the client organization, the implementation of analytical procedures, observations, and reviews (International Federation of Accountants, 2010, p. 265). While the importance of risk assessment knowledge is

not a new issue in auditing, its importance may be reinforced by the abundance of financial scandals. This factor continues to become an important skill, knowledge, and attitude for auditors.

6. *Introduction to Internal Controls:* The Tread way Committee Supporting Committee (1992) defines internal controls as a process that is influenced by a broad body of executives, management, and other employees, and is designed to provide reasonable assurance of achieving the goal of effectiveness and efficiency, operations and financial reporting reliability, and compliance with laws and regulations. According to the Sarbanes-Oxley Act (SOX), independent auditors must assess their effectiveness and affirm their management and internal control reports through financial reports. In auditing, internal controls and internal control systems are becoming increasingly important, to the extent that an internal control explosion has been observed (Maijoor, 2000).

7. *Fraud detect ability:* Incorrect statements in financial statements may result from errors or fraud. Fraud is a deliberate act, while the error is not. According to Coenen (2010), fraud is rarely discovered by financial statement audits, since the main purpose of such audits is not. The importance of fraud detection skills as a skill for auditors is growing, but it may vary in different areas or geographic locations.

8. *Decision-making skills:* Although most of the major decisions are made by the chief executives, managers, and partners, there are other decisions that all auditors must take individually or collectively.

9. *Project Management Skills:* The auditor responsible for an audit that acts as a project manager must have project management skills to plan, execute, and manage the audits well. This planning is useful for maintaining the scope of the audit and the objectives we are seeking for (Sinason, 2002).

10. *Written and oral communication skills:* Communication is divided into both oral and written categories; the ability to write writing in different ways, the use of correct spelling, and the ability to read correctly are the meanings of written communication skills. Oral communication skills are the ability to correctly interpret verbal information from another person. Afshari, Honary, and Ghafouri (2010) reviewed the managers' skills in three branches of perceptual, human, and technical skills for managers of physical education departments of universities across the country that also used in this research. Since the skills of each profession in the two perceptive and human domains are largely the same, the cognitive and human skills of Afshari, Honary, and Ghafouri (2010), which were reviewed for managers, were also used in this research. And the items that were not measurable or not applicable in the scope of the auditors were discarded.

Based on the researches of Siriwardaneet al. (2014), Afshari et al. (2010) and the current needs of the Iranian Accounting and Auditing Society, out of 37 skills, the knowledge and attitudes investigated in this study, there was a total of thirteen skills for perceptual skills, eleven skills for human skills and thirteen skills for technical skills, as the following was selected and investigated:

According to the stated content, we will examine all the skills of auditors in three areas of perceived, human, and technical skills, while also using the International Accounting Standard.

In this regard, from the standpoint of international educational standards, the skills required by accountants are as follows (Helliari, 2013).

Technical Skills	Human skills	Perceptual Skills
Accounting and Audit Experience	Observance of politeness and respect in the workplace	Ability to understand organizational structure
Mastering Accounting and Auditing Standards	Attention to values and ethics	Ability to understand organizational priorities
Professional integrity	Written communication skills	Ability to recognize the weaknesses and strengths of the organization
Professional Skepticism (Assessing audit evidence. Questioning mind)	Oral communication skills	Foresight
Project management skills	Negotiation skills	Targeting
Fraud detection skills	Existence of team spirit-team work	Innovation and creativity
Internal control knowledge	Ability to manage meetings	Comprehensive planning
Risk assessment knowledge	Ability to oversee affairs	General business knowledge
Compliance of requirements and Legal regulations	Control of Contradiction And conflict of views	Ability to understand client's business
R & D in auditing	The ability to solve conflicts	Time management
The ability to use computers in auditing	Decision-making skills	Critical thinking skills
Ability to audit computer systems		Assess the effectiveness of the program
Fluency in English		Ability to adapt to changes in the work environment

Table 1.
Triple Skills

Title	Subdirectory
Knowledge	<ul style="list-style-type: none"> • Accounting, finance and other related sciences • Business and Organizational Activities • Information Technology
Skill	<ul style="list-style-type: none"> • Mental skills • Technical and functional skills • Individual skills • Interpersonal and communication skills • Organizational skills and business management
Attitude	<ul style="list-style-type: none"> • Public interest and sensitivity to social responsibility • Personal Progress and Continuity of Learning • Reasonable, Responsible, Accurate, Respectful, and respect for the rules and regulations

Table 2.
List of
accounting
learning
needs

Students who are eager to enter the profession must be fluent in all the requirements for professional development expressed in international educational standards. This not only involves the learning of technical knowledge, but also includes transferable skills that can actually be transferred from the learning environment to the workplace or from one position or field to another. Students also need to be expert in transferable skills such as writing reports and interpersonal skills, such as listening and oral communication as well as providing, discussing, and defending arguments (Sin et al., 2012).

Before addressing the second question, we will briefly explain each of the perceptual, human and technical skills.

1. *Perceptual Skills*: is the ability of an individual to understand the complexity of the environment in the setting of executive activities to achieve the goals and strategies defined. Acquiring cognitive skills requires the acquisition of theories of behavioral sciences, especially “organizational theories”, "management", "decision making" and their practical application. Having cognitive skills helps auditors make effective decisions by identifying interactions between different factors, identifying the priorities, and organizing the best results with their actions.

2. *Human skills*: Includes the ability to collaborate with others in achieving predictable goals. Achieving human skills requires recognizing one's strengths and weaknesses. To this end, one must provide a secure and acceptable environment for the development of cooperation, in a spirit of respect for the beliefs, values, and feelings of others through the use of clear thoughts and self-confidence.

3. *Technical Skills*: The ability of an individual to have a specialized knowledge in effectively dealing with topics that are relevant to his/her field of work. Technical skills are achieved through training, internship, and experience. Since these skills have objective and measurable criteria, it is easy to control and evaluate them.

Question two of the research

Do auditors have the necessary qualifications includes skills, knowledge, and attitudes?

The second question’s objective is to provide a set of competencies based on the importance of the skills, knowledge, and attitudes defined in the first question. Then, we review the auditors' perceptions about the performance of their audit partners by considering the issues identified as a set of skills, knowledge, and attitudes required for today's auditors.

3. Research background

Nasirzadeh (2010) in a research study in the field of accounting implies the necessity of adapting educational institutions and students' curriculum with the changes in the economic environment and emphasizes that the creation of a change in the preparation of students by the profession of accounting as well as by the instructors of educational units is a necessity.

Momeniet al. (2012) in a study entitled, “Investigating the level of job skills required in the labor market in the curriculum of the Bachelor of Accounting, Civil Engineering, and Food Industries”, reviewed this issue from the viewpoint of faculty members, instructors, and undergraduate students in the field of Accounting , Food Industry and Civil Engineering Department of Islamic Azad University of TorbatHeydarieh and concluded that students and accounting professors believe that employment skills are not taught in the curriculum.

Salehi et al. (2014) investigated the challenges of accounting education in Iran from the point of view of professional practitioners and academic authorities. The research results indicated that according to the respondents' viewpoint, the current system of accounting education failed to fulfill its mission of training and equipping students with accounting concepts to function properly in the labor market. Further studies have revealed that respondents had more complaints about the current situation, "lack of sufficient attention to students' familiarity with modern information technology tools", "lack of adequate attention to appropriate training of legal cases needed in the world of practice" and "lack of sufficient practical skills for students", compared with "lack of adequate transfer of concepts and ethical training to students" and "non-compliance of educational contents with accounting standards".

Che Ku (2014) explores the cause of accounting failure, his study results show that the current education system has an over-emphasis on technical skills, while with regard to flexible marketplace, employers expect to have an employee who is more inclined to work and is more familiar with the accounting software. As a result, there is a contradiction between educational content and industry needs.

Siriwardane et al. (2014) identified and evaluated the skills and attitudes required by the auditors. They ranked the importance of 20 skills for auditors by senior auditors. Meanwhile, they determined the distance between the importance and performance of novice auditors in these skills. Their research results show that professional honesty is an important skill for current auditors, which is different from the results of the previous studies that examined the importance of skills from the perspective of academics. Professional skepticism and the ability to understand customer business were also the next major skills identified in his research. Also, the research results show that business competence has the highest performance gap for the newly arrived auditors.

Khani and Tayebi (2015) determined and prioritized accounting training skills based on the hierarchical analysis model. The research results show that communication skills and IT mastery are of the highest priority for partners and employees of the audit firms, respectively.

Damasiotis et al. (2015) examined the importance of IT knowledge among academics and business accounting professionals. Their research results show that information technology knowledge is important for both employees and academics, which requires further investigation about the capacity for using this knowledge in both academic and business areas.

In 2015, Pratama (2015) examined the views of academics and practitioners about the eligibility criteria of accountants. His research showed that there is a difference between the attitudes of academics and students in the field. In fact, academics have a theoretical perspective on the subject, but the viewers are based on practical experience and business requirements.

Siriwardane et al. (2015) explored the communication duties, skills, and attitudes needed by novice accountants in their 2014 research development. Their research results show that novice auditors are weak in communication skills, especially oral communication, while according to their results, communication skills are the most important skill identified by the employees.

Sawani et al. (2016) investigated the impact of internship on the gap between the performance of accounting novices and employer expectations. Their study results show that most employers are satisfied with the performance of trainees in terms of job competence and compliance with job requirements. At the same time, in the eyes of employers, trainees are weak in accounting reporting.

Heyrani et al. (2017) investigate the effect of auditors' professionalism levels on their judgment to resolve the conflict between auditor and management. The results indicated that auditors' professionalism affects the professional judgment. They also showed that professional judgment has an impact on the conflict between auditor and management, but professionalism does not have any impact and professional judgment does not play a moderator role in the effect of professionalism on the conflict between auditor and management.

Zahmatkesh and Rezazadeh (2017) investigated the relationship between auditors' characteristics and audit quality. The aim of their study isto investigate the effect of work experience, professional competence, motivation, accountability, and the objectivity of the auditor on audit quality from the viewpoint of auditors employed in firms. The results show that professional competence, accountability, and objectivity of the auditor show a significant effect on the quality of the audit. The employing people with a great experience increase the audit quality by enhancing the professional competence of the auditor; auditors gain a deeper knowledge and better judgment to achieve the audit quality.

4. Research methodology

This research is applied, in terms of its nature and purpose, and the method of data collection is a descriptive survey. In this study, factor analysis has been used to identify the underlying dimensions of variables. The factor analysis is called a statistical technique in which variables are divided into different categories that make it a factor. In other words, in the process of factor analysis, the number of variables is reduced and different categories of variables are created.

In this research, a field method is used to collect data that some questionnaires have been distributed between the auditors of auditing firms based in Mashhad with at least three years of work experience.

4.1. Society and statistical sample

The statistical sample used in this study are the auditors of auditing firms based in Mashhad with at least three years of auditing work experience. In this research, 110 questionnaires were used.

4.2. Data collection

In this research, for collecting the data, a questionnaire was first determined and its validity was determined and the validity of the questionnaire was verified after preparing by the experts and academic staff, and the validity was confirmed. This questionnaire has 37 questions; and each question is devoted to an audit skill.

Cronbach's alpha scale was used to measure the reliability of this questionnaire. The results obtained for the questionnaire related to the importance of skills section (the second part of the questionnaire) is 959.0, for the section of the questionnaire of the auditors performance (third part of the questionnaire), is 966.0 and for the whole the questions were obtained at 963.0, which gives a high credibility to the questionnaire.

The questionnaire consists of two main parts: 1. reviewing the auditor's view about the importance of each of the skills required for today's auditors. And 2.the auditor's viewpoint about the extent of mastery of their colleagues about the studied skills.

In the questionnaire, a Likert criterion of 5 (from 1 "completely trivial" to 5 "very important") was used. In the third section, respondents were asked to indicate the

extent to which the auditors possessed the required qualifications, including their skills, knowledge, and attitudes, on a 5-point Likert scale (from 1 "Very Low" to 5 "Very High") with a mark.

4.3. Data analysis method

In this research, data from SPSS version 23 software was used and for data analysis, exploratory factor analysis and t-student test were used.

5. Research findings

5.1. Descriptive statistics

Frequency distribution of variables

The results of Table 2 show that 74.5% of respondents are male and 25.5% of them are female. In fact, of 110 questionnaires distributed among audit institutions, 82 males and 28 females shaped our sample. 47.3% of the samples were aged between 26 and 30 years and 31.8% of them are in the age range of 20 to 25 years. The highest frequency is from the age range of 26 to 30 years, and the lowest frequency is due to the age range of 36 years. 71.8% of sample is auditors. The lowest percentage is for the manager or partner of the institute. Also, the results show that 51.8% of the sample people have stated their level of education as a bachelor's degree. 36.4% of the sample have stated their level of education as a Master's degree and 10.9% had lower education than the bachelor's degree. Also, 98.2% of the sample subjects were educated in accounting and less than 2% had entered the audit profession with the management degree. Among respondents, despite other financial fields are mentioned in the questionnaire, like the Economics, there was no responder. The results also show that 75.5% of respondents claim that they have a career background of 3 to 5 years, by which they can be said to be an auditor.

5.2. Inferential statistics

At first, the validity of the questionnaire was evaluated by exploratory factor analysis and then we answer the questionnaire using T-Student and Friedman tests.

5.3. Exploratory factor analysis

In the table below, we can see that the KMO index is appropriate (sampling adequacy) and according to the probability test of Bartlett's sprite test, which is less than 0.05 (first-order error level), it can be concluded that there is a significant relationship between the variables and they are suitable for exploratory factor analysis.

Value	KMO index and Bartlett's sprite test	
0.865	KMO index	
3341.205	Chi-2 approximation	Bartlett's sprite test
< 0.001	Probability value (sig.)	

Table 4.
Examination
of the
suitability of
sampling for
performing
exploratory
factor analysis

Recognition
of the Skills
and
Knowledge
of Iranian
Auditors at
the
Workplace

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Description	Number	Percentage	The cumulative percentage
Sex			
Male	82	74.5	74.5
Female	28	25.5	100.0
Sum	110	100.0	
Age (Year)			
20 to 25	35	31.8	31.8
26 to 30	52	47.3	79.1
31 to 36	19	17.3	96.4
36 to 40	2	1.8	98.2
More than 40	2	1.8	100.0
Sum	110	100.0	
Professional rank			
Auditor	79	71.8	71.8
Senior Auditor	16	14.5	86.4
Superintendent or supervisor	12	10.9	97.3
Manager or partner	3	2.7	100.0
Sum	110	100.0	
Level of Education			
Less than a bachelor's degree	12	10.9	10.9
BA	57	51.8	62.7
MA	40	36.4	99.1
PhD	1	0.9	100.0
Sum	110	100.0	
Field of Study			
Accounting	108	98.2	98.2
Management	2	1.8	100.0
Sum	110	100.0	
Duration of occupation (years)			
3-5	83	75.5	75.5
6-10	24	21.8	97.3
More than 10	3	2.7	100.0
Sum	110	100.0	

Table 3.
Frequency
distribution of
variables

The following table shows the sharing of questions with each other before being extracted by that factor analysis and after that.

Questionnaire questions	Initial subscription	Extraction subscription
Ability to understand organizational structure	1.000	0.792
Ability to understand organizational priorities	1.000	0.746
Ability to recognize the weaknesses and strengths of the organization	1.000	0.704
Foresight	1.000	0.693
Targeting	1.000	0.658
Innovation and creativity	1.000	0.797
Comprehensive planning	1.000	0.648
General Business Knowledge	1.000	0.613
Ability to recognize customer business	1.000	0.624
Time Management	1.000	0.656
The ability to analyze critically	1.000	0.661
Evaluating the effectiveness of the program	1.000	0.823
Questionnaire questions	Initial subscription	Extraction subscription
Ability to adapt to changes in the work environment	1.000	0.620
Observance of politeness and respect in the workplace	1.000	0.769
Attention to values and observance of morality	1.000	0.707
Ability to establish written communication	1.000	0.737
The ability to verbal communication	1.000	0.644
Negotiation skills and bargaining power	1.000	0.727
Existence of team spirit –team work	1.000	0.642
Ability to manage meetings	1.000	0.677
Ability to oversee affairs	1.000	0.772
Control of Contradiction And conflict of views	1.000	0.749
The ability to solve conflicts	1.000	0.772
Decision-making skills	1.000	0.686
Accounting and Audit Experience	1.000	0.667
Mastering for accounting and auditing standards and regulations	1.000	0.706
Professional integrity	1.000	0.663
Professional skepticism (assessment of audit evidence and an inquiring mind)	1.000	0.728
Project Management Skills	1.000	0.774
Ability to detect fraud	1.000	0.616
Understanding internal control	1.000	0.634
Ability to assess risk	1.000	0.616
Compliance with legal requirements	1.000	0.578
R & D in auditing	1.000	0.651
The ability to use computers in auditing	1.000	0.703
Ability to audit computer systems	1.000	0.621
Fluency in English	1.000	0.610

Table 5.
The sharing of
questions with
each other

In order to find the indicators or key factors required by the PCA method, the following steps were followed: In the table below, the rows of 10 afterward are erased because their special value is less than one. The first block contains three columns with a special value sticker for the values of the correlation matrix. The special value is the sum of the variance of the total test that is estimated by a specific factor and the total variance for each test is (100%). The special value for the first factor is 15.1391. Other special values for later agents are also included in the total column. The column of this block is the percentage of the contribution of the factor to the variance of the factor that divides its specific value into the number of tests. Hence, the special values show the exploratory significance of the factors associated with the variable. Lowering this value for an agent means that it has little role in explaining the variance of the variables.

In the second and third blocks of the table 6, respectively, the sum of the second power factor extracted before the varimic period and the total power of the second factor load times by the varimic period are presented. According to the results, six authors with a specific value greater than 1 have 68.88% of the total variance of the data.

The next table (Table 7) shows the rotated matrix of the components that contain the factor loads of each of the variables in the six remaining after-divergent factors. Whatever the absolute value of the factor loads is higher, the agent has a greater role in the total variation (variance) of the variable in question. The table below shows with the Q1 to Q37 symbols for easy viewing of the questionnaire questions.

According to the results of the Table 7, questions about each of the exploratory factors can be identified. Now, you have to select the appropriate title for each of the exploratory factors. To select the appropriate title for each factor, we used Siriwardaneet al. (2014) and the International Standard for Education. Six factors were identified that has been titled as the competence of communication and decision making, competence of technical and operational, competence of planning and prospective, competence of qualification of organizational, competence of subjective, and competence of Professionalism. Moreover, the questions related to each factor are ranked according to the difference between the mean value of the importance questionnaire (right), the familiarity, and performance questionnaire (left).

The average importance of each skill is shown in the Ttable 9. The mean value for each skill is higher than the average (with 36 skills having an average above 4). The data shows that all selected skills are considered critical to the success of the auditors. Based on the average values of importance, the accounting and auditing experience with an average of 545.4 is the most important skill. The second most important skill from the perspective of auditing professionals is to dominate accounting and auditing standards and regulations. The third most important skill from the auditor's point of view is professional honesty. Also, for each factor, the average importance has been identified as the factor of professional competence with the average importance of 51.84 is identified as the most important factor. Fifteen identified critical skills are shown in the table 9.

Component or Factor	Special values			The sum of the second power extracted from the factor loads			The sum of the second power extracted from the rotated factor		
	Sum	Percentage of variance	Cumulative percentage of variance	Sum	Percentage of variance	Cumulative percentage of variance	Sum	Percentage of variance	Cumulative percentage of variance
1	15.391	41.598	41.598	15.391	41.598	41.598	6.859	18.539	18.539
2	3.938	10.642	52.241	3.938	10.642	52.241	6.222	16.816	35.355
3	2.179	5.890	58.130	2.179	5.890	58.130	4.677	12.642	47.997
4	1.524	4.119	62.249	1.524	4.119	62.249	2.795	7.555	55.552
5	1.278	3.454	65.704	1.278	3.454	65.704	2.468	6.669	62.221
6	1.175	3.176	68.880	1.175	3.176	68.880	2.464	6.659	68.880
7	0.991	2.680	71.559						
8	0.943	2.550	74.109						
9	0.837	2.262	76.371						
10	0.795	2.149	78.520						

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Factors						Variables (Questions)
6	5	4	3	2	1	
0.068	0.053	0.848	0.233	0.017	0.103	Q1
-0.112	0.168	0.673	0.439	0.131	0.208	Q2
0.181	0.181	0.678	0.265	-0.062	0.321	Q3
0.170	0.119	0.146	0.734	-0.027	0.298	Q4
0.155	0.047	0.361	0.662	0.086	0.235	Q5
0.003	0.190	0.158	0.765	0.070	0.383	Q6
0.083	-0.045	0.276	0.670	0.019	0.337	Q7
-0.146	0.107	0.470	0.496	0.292	0.168	Q8
-0.021	0.234	0.314	0.587	0.325	0.142	Q9
0.150	0.351	0.169	0.614	0.261	0.189	Q10
0.121	0.758	0.052	0.075	0.244	0.066	Q11
0.025	0.840	0.109	0.210	0.202	0.141	Q12
0.189	0.595	0.231	0.263	0.136	0.301	Q13
0.230	-0.061	0.384	0.189	0.106	0.719	Q14
0.145	-0.015	0.268	0.277	0.207	0.703	Q15
0.256	-0.029	0.085	0.241	0.197	0.753	Q16
0.033	0.177	0.144	0.065	0.207	0.738	Q17
0.088	0.269	-0.08	0.256	0.039	0.761	Q18
0.181	0.105	0.176	0.098	0.263	0.699	Q19
0.054	0.018	0.164	0.239	0.451	0.622	Q20
0.112	0.022	0.026	0.227	0.377	0.751	Q21
0.093	0.218	-0.055	0.413	0.300	0.654	Q22
0.030	0.258	0.042	0.419	0.340	0.642	Q23
0.084	0.208	0.138	0.209	0.312	0.690	Q24
0.728	0.130	0.071	0.099	0.258	0.197	Q25
0.653	0.050	0.132	0.077	0.463	0.197	Q26
0.276	-0.013	0.038	0.196	0.658	0.337	Q27
0.608	0.204	-0.017	0.052	0.493	0.255	Q28
0.457	0.106	-0.100	0.426	0.567	0.203	Q29
0.275	-0.003	0.041	0.256	0.685	0.061	Q30
0.474	0.075	0.045	0.070	0.583	0.237	Q31
0.268	0.207	0.260	0.197	0.597	0.195	Q32
0.045	0.220	-0.034	0.041	0.706	0.163	Q33
-0.001	0.192	0.115	0.066	0.734	0.241	Q34
0.209	0.136	-0.33	0.115	0.754	0.242	Q35
0.115	0.127	0.137	0.023	0.726	0.214	Q36
0.055	0.079	-0.146	0.381	0.615	0.238	Q37

Table 7.
Rotated
matrices of the
factors and
their related
factor loads

The difference between the average of the importance and performance	The average of performance	The average of importance	Questions	Questions Symbols	Factor Title
1.073	3.309	4.382	Decision-making skills	Q24	The competence communication and decision-making
1.027	3.336	4.364	Ability to oversee affairs	Q21	
1.009	3.173	4.182	Controversy and conflict control	Q22	
1	3.282	4.282	Ability to manage meetings	Q20	
0.964	3.264	4.227	The ability to solve conflicts	Q23	
0.936	3.418	4.355	Existence of team spirit -team work	Q19	
0.818	3.364	4.182	Negotiation skills and bargaining power	Q18	
0.8	3.518	4.318	The ability to verbal communication	Q17	
0.773	3.482	4.255	Ability to establish written communication	Q16	
0.773	3.573	4.345	Observance of politeness and respect in the workplace	Q14	
0.764	3.609	4.373	Attention to values and morality	Q15	
903.0	393.3	297.4			
1.327	3.073	4.4	Ability to audit computer systems	Q36	The competence of technical and operational
1.282	2.655	3.936	Proficiency in English	Q37	
1.218	3.245	4.464	Understanding internal control	Q31	
1.209	2.982	4.191	R & D in auditing	Q34	
1.191	3.209	4.4	The ability to use computers in auditing	Q35	
1.191	3.245	4.436	Ability to assess risk	Q32	
1.173	3.255	4.427	Ability to detect fraud	Q30	
1.145	3.336	4.482	Professional integrity	Q27	
1.1	3.264	4.364	Project Management Skills*	Q29	
0.991	3.409	4.4	Compliance with legal requirements	Q33	
183.1	167.3	350.4			

Table 8.
Selected titles for the factors and ranking questions related to them based on the difference of the mean from performance

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The difference between the average of the importance and performance	The average of performance	The average of importance	Questions	Questions Symbols	Factor Title
1.355	2.873	4.227	Innovation and creativity	Q6	The competence of planning and prospective
1.309	3.073	4.382	Time Management	Q10	
1.291	3.027	4.318	Comprehensive planning	Q7	
½	2.982	4.182	Targeting	Q5	
1.118	3.018	4.136	General Business Knowledge	Q8	
1.082	3.1	4.182	Ability to recognize customer business	Q9	
1.045	3.045	4.091	Foresight	Q4	
200.1	018.3	217.4			
0.891	3.173	4.064	Ability to understand organizational structure	Q1	The competence of qualification of organizational
0.873	3.245	4.0118	Ability to recognize the weaknesses and strengths of the organization	Q3	
0.809	3.255	4.064	Ability to understand organizational priorities	Q2	
858.0	224.3	082.4			
1.273	2.973	4.245	The ability to analyze critically	Q11	The competence of subjective
1.145	3	4.145	Evaluating the effectiveness of the program	Q12	
1.091	3.118	4.209	Ability to adapt to changes in the work environment	Q13	
170.1	030.3	200.4			
½	3.345	4.545	Accounting and Audit Experience	Q25	The competence of professional-ism
1.182	3.355	4.536	Mastering for accounting and auditing standards and regulations	Q26	
1.155	3.318	4.473	Professional skepticism (assessment of audit evidence and the questioning mind)	Q28	
1.179	3.339	4.518			

Table 8. Selected titles for the factors and ranking questions related to them based on the difference of the mean from performance

Questions	The average of importance	The average of performance	The difference between the average of the importance and performance
Accounting and audit experience	4.545	3.345	½
Mastering accounting and auditing standards and regulations	4.536	3.355	1.182
Professional integrity	4.482	3.336	1.145
Professional skepticism (assessment of audit evidence and the questioning mind)	4.473	3.318	1.155
Understanding internal control	4.464	3.245	1.218
Ability to assess risk	4.436	3.245	1.191
Ability to detect fraud	4.427	3.255	1.173
Ability to audit computer systems	4.4	3.073	1.327
The ability to use computers in auditing	4.4	3.209	1.191
Compliance with legal requirements	4.4	3.409	0.991
Decision-making skills	4.382	3.309	1.073
Time Management	4.382	3.073	1.309
Attention to values and morality	4.373	3.609	0.764
Ability to supervise affairs	4.364	3.336	1.027
Project Management Skills	4.364	3.264	1.1

Table 9.
The most important identified skills

Significant evaluation of the importance of administrative, human and technical skills

The results of single-sample T-Student test were reported at 95% confidence level (5% error level) for each skill.

P-Value	T-Student	Standard error	Mean	Questionnaire	Skill
< 0.001	22.174	0.546	4.182	The importance of skill	Perceptual
0.151	1.035	0.687	3.068	Performance of audit colleagues	
< 0.001	20.495	0.664	4.297	The importance of skill	Humanity
< 0.001	6.676	0.637	3.393	Performance of audit colleagues	
< 0.001	27.004	0.539	4.389	The importance of skill	Technical
0.001	2.998	0.724	3.207	Performance of audit colleagues	

Table 10.
Single-sample t-student test to evaluate significance of importance and performance of skills

In the third column of the Table 10, the mean value of the questions related to each skill is reported separately in both the questionnaire of importance and performance (familiarity), which is a number between 1 and 5. This figure represents the extent of the importance and function of each of these skills. We observe that the probability of single-sample T test for all three skills and in both aspects of the importance and performance questionnaire except for the skill in the questionnaire was less than 0.05 (first type error), therefore, the zero assumption (H_0) is rejected. In other words, with 95% confidence, it can be claimed that from the respondents' perceptive, perceptual skills, human, and technical skills are significant and human and technical skills have a significant performance and familiarity.

6. Conclusion

The purpose of this study is to investigate and identify the skills required by today's auditors. The results show that all 37 examined firms are important for the success of auditors. Based on the importance of accounting and auditing experience, mastering the accounting and auditing standards and professional integrity are the most important skills. The experience of accounting and auditing means having a record in dealing with different and diverse accounting and auditing practices, and the previous confrontation with the problems that can be solved by the experienced auditor. Auditor's experiences are used when they are faced with a new issue or are inclined to an increased speed, accuracy, and quality of work. An experienced auditor never overcomes his professional commitment and always looks at the interests of the stakeholders, fulfilling his financial duties, and this is the most important asset of the auditors at the moment. Audit history in companies of different nature has increased the experience of auditors, which encompasses the accounting affairs of these companies. The result of this hypothesis is consistent with that of Siriwardaneet al. (2014), who referred to the experience of accounting and auditing as one of the most important skills required by the auditors. Also, results are in line with the study of Khani and Tayebi (2015), Pratama (2015) and Sawani et al. (2016) who declared that the experience of an accountant is a relationship to auditors' skills. The mastery of accounting and auditing standards and regulations is also one of the factors that have already become of great importance to auditors because of the increase in legal claims in accordance with the laws of commerce, tax and, accounting, as well as accounting rules by considering the rapidly growing commercial and business environments. The need to master accounting and auditing standards and regulations is one of the things that asks for a continuous training, and auditors need to be somewhat up-to-date in learning the standards and mastering them. According to the results of this study, one of the most important assets of an auditor is to be under the control of accounting and auditing standards and regulations. Of course, by considering the type and nature of the audit work and the diversity and variety of accounting standards, it is difficult to master all types of accounting standards, but by replacing and changing the work of the auditors, this weakness can be improved by working in all companies with different activities. The result of this hypothesis is in accordance with that of the Siriwardaneet al. (2014), who referred to the dominance of accounting and auditing standards and regulations as one of the most important skills required by the auditors. In addition, the results are in accordance with that of the Siriwardane et al. (2015) and Damasiotis et al. (2015) that showed the accounting and auditing standards and regulations are related to auditors' skills. Professional honesty is also considered as one of the most important factors in the eyes of the auditors. Auditors look for a professional honesty

to see what is needed in the current environment of current intolerance. Professional honesty is a factor in accrediting the audit profession and advocating for auditors in legal cases. Professional honesty is a factor that the owners need in the current situation and is considered as one of the privileges of auditors. The results of this research show that professional honesty is essentially community-based, because auditors need it in the current situation. The result of this hypothesis is in conformity with that of the Siriwardane et al. (2014), who has identified professional integrity as one of the most important skills required by the auditors. Also, results are in line with that of the Pratama (2015) and Sawani et al. (2016) who referred to professional integrity as a relationship to auditors skills. The honesty of professionalism in the research by Siriwardane et al. (2014) has been identified as the most important skill by Singaporean practitioners and academics. Cavana and Dornen (2008) also identified morality as an important skill. The ability to assess audit evidence and the mindset of the questioner, that both of them are related to the professional skepticism, has been identified as the fourth most important skill that has been selected as the second and third most important skill by researchers and academics in Siriwardane et al. (2014). The recognition of internal control as the fifth important skill was determined by the auditors, which was not identified in the study by Siriwardane et al. (2014) between the five critical skills required by the auditors, which indicates that over time, the importance of this skill is increasing from the auditors' point of view.

According to Ton (1999), communication is the fourth most important attribute for assistants and audit managers, the fifth for senior inspectors and the second for audit counterparts, which indicates that the importance of communication increases with respect to the audit rank. Audit communication is also very important for auditors. Communications have different types that, according to the experts, an auditor should have them at an acceptable level in order to resolve the interactions between the client and the auditor. If an auditor does not have a degree of communication, this may lead to some kind of mismatch between the auditor and the client and ultimately undermines the auditor's desired outcome. An auditor's communication is an internal capability that can be transformed into an auditor by reinforcing it, which can manage problems and problems between its clients and auditors, as well as work on future work. The auditor's communication with the financial staff of an organization can also be used in reporting them and obtaining accounting records. The auditor's communication can provide valuable assistance to the auditor in conducting audit work from the start of the audit to the auditor's report. The result of this hypothesis is in line with that of the Siriwardane et al. (2014), who referred to audit communication as one of the most important skills required by the auditors. In a study by Siriwardane et al. (2014), communications are divided into two types of oral and written communication that found that oral communication skills are more important than written communication skills, which is consistent with the findings of the present study. Also, in Khani and Tayebi (2015), research results show that communication skills and IT mastery are of the highest priority for partners and staff of audit firms, respectively. The ability to assess risk, the ability to detect fraud, the ability to use computers in auditing, the ability to audit computer systems, compliance with legal requirements, decision-making skills, time management, attention to values and ethics, the ability to manage projects, and project management skills are the sixth up to fifteen major skills that identified by auditors. The ability to assess risk should also be an effective factor in auditors. The auditor should accurately identify the risk of each heading in the accounts, evaluate the ways to deal with it, and scrutinize the severity of the risk. In this case, the auditor has the

ability to enhance his skills and capabilities and, as such, is one of the factors that today's auditors need. The ability to detect fraud and a compliance with laws and regulations is also one of the important factors in the skills of auditors who, in the event of failure to comply with these factors, confronts auditors in current auditing conditions. Fraudulent financial reporting and non-detection of these fraudsters remain important distortions in financial statements, which affects the attitudes of the community and professionals about the auditor's abilities.

The second question is to look at how auditors use the level of familiarity of their colleagues with the skills described. Exploratory factor analysis has identified skills in six dimensions. For each skill, the average importance, the average of performance, as well as the gap between performance and importance is noted. The positive gap between performance and importance indicates that the performance of the audit colleagues is less than the required level and vice versa.

The results show that all skills have a moderate performance that is close to the mean value of 3, and all dimensions of skills have a mean positive difference. That is, the performance and familiarity of the audit team are lower than the expected level of auditor expectations. Innovation and creativity skills have the greatest gaps in performance and importance, after them, the skill of ability to audit computer systems and time management are placed. The sixth factor (professional competence) is of the highest importance to the auditors and after that the second factor (technical and operational competence) and the first factor (communication competence and decision making) are important the most. The greatest gap is the performance and importance is related to the planning and prospective qualification, followed by the technical, operational competence, and professional competence.

The results of the research show that the ability of computer systems auditing, time management, internal control recognition, accounting and auditing experience, ability to assess risk and the ability to use computers in the audit have the greatest gap in importance and performance, which show that, unfortunately, auditors have weak skills in these skills. Based on the results, it can be said that the skills of project management, decision-making skills, ability to supervise affairs, observance of legal requirements, and attention to values and ethics have the least disparity of importance and performance, which shows that, thankfully, auditors have good performance in these skills.

Innovation and creativity are some of the features that unfortunately have weaknesses in all businesses. Innovation and creativity are also important in auditing. Since auditors mainly do audit work in the same way and use a procedure and procedure for auditing different clients (even of different nature), innovation and creativity in this area are at the lowest possible. On the other hand, computer skills and familiarity with various and up-to-date software are also other problems that auditors have. Many auditors mention computer work to meet the financial needs and do not try to learn more. While many different computer software have been produced to simplify and perform tasks faster, unfortunately, auditors do not currently know how to handle them, and this also affects their time management, so that there is a large deviation between the time budget and the real time spent in the audit work. Technical competence is also one of the other factors that auditors rarely have. This is due to the fact that universities teach courses only theoretically to students, while the work of the audit is a combination of theoretical and applied science. Auditors now see a lot of gap between the technical and professional qualifications to deal with their technical and professional qualifications.

It seems that due to the dynamics of the computer and information technology industry, auditors need to learn more about this. In fact, it can be said that for

computer system audits and the ability to use computers in the audit, further studies are needed in the accounting and auditing system. The three master's degree computer system audit programs are not as professional as it needs to be and it makes sense that it would not be possible to fully address this skill in three curricula.

Since most of the respondents were at the beginning of the audit trail and experience, it can be concluded that this amount of work experience is insufficient for the auditor's competence. As a result, the performance gaps and the importance of internal control cognition skills, ability to assess risk, and time management can also be due to lack of experience. Moreover, the lack of an apprenticeship course in accounting and auditing courses can also be due to the so-called gap.

The results of Khani and Tayebi (2015) also show that auditors generally have the lowest score for adapting their skills to the needs of the profession. This means that alumni skills level does not provide the opinion of professional activists. The main reason for this is the theoretical knowledge of accounting and law rules in the university and the lack of communication with the applied space.

In general, the results of this study coincide with the results of the previous studies and show that auditors do weaker than the expectations in the workplace. The present study seeks to help expand the audit literature by examining a wider and more comprehensive set of skills, knowledge, and attitudes necessary for the success of auditors. The results show that accounting and auditing experience are two important skills for auditors in the current environment. The results of this research can help educators develop a suitable curriculum that can lead to the acquisition of critical skills for students.

The accounting training system in universities seems to require re-examinations and activists. The results indicate that many skills are considered as important for auditors that are not properly included in the training system, which can be attributed to skills such as the ability to audit computer systems, the recognition of internal control, the ability to use computers in auditing, and the ability to assess risk. It is also clear that many of the important skills of auditors, such as accounting and auditing experience, time management, risk assessment ability and internal control, and ... are not fully comprehensive and comprehensive trainable in universities, which show the requirement of apprenticeship period more than before. Therefore, the revision of current accounting curriculum based on the results of this research and other research is recommended.

7. Research implications

1. According to the results of the research, it is recommended that audit firms, by attracting experienced auditors and auditors, take the lead in accounting and auditing standards and standards and have professional integrity towards strengthening their human resources, because for the majority of the experts these three factors are among the most important factors that an auditor should have.

2. It is also suggested to independent auditors to strengthen their audit communications to enhance their skills and abilities. Auditors gain the benefits of increasing audit communication, which boosts their skills, knowledge, labor market, and communication capabilities.

3. It is recommended to the Association of Certified Accountants and the Audit Organization to set up guidelines, guidelines for individual and non-core specific skills that the auditors should have to strengthen the skills and capabilities of the auditors and, consequently, to improve the audited financial statements.

4. Auditors are advised to gain some kind of skill by enhancing their innovation and creativity skills, which is a kind of competitive advantage among auditors. In the current auditor's gap with this aspect, an innovative and creative auditor with working conditions It will be much more optimal.

5. It is also suggested to audit firms by conducting computer training classes for auditors to improve their knowledge and capabilities of IT, they will take effective steps. On the other hand, familiarity with financial and managerial software is from other training courses that audit firms or auditing organizations should consider for auditors and their skills development.

6. It can be said that there is a need to adapt between the content of BA courses in accounting with the needs of the audit profession. It is also necessary to examine the reasons for weaknesses in the skills of auditors by presenting the suggested solutions to improve accounting education in Iran. The need to add curriculum subjects as spoken, written, and written communication skills in the Iranian accounting system should be investigated.

7. In the future, we can examine a broader range of skills. It is also suggested that in the future research the skills studied in the research should be more clearly defined for the respondents.

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