

# The mediating role of human capital on the relationship between audit firm size and independent auditor's opinion: evidence from Iranian audit firms

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## Abstract

This empirical research is aimed to explore the effect of Human Capital (HC) as a mediator in the association of the size of an audit firm and independent auditor's opinion (IAO). The respondents of this research were senior practicing auditors of audit firms with verse experience. The research has applied ANCOVA and path analysis method in SEM by utilizing LISREL to examine research questions. The results of this study revealed that HC was significantly associated to independent auditor's opinion and it can significantly create a relationship between audit firm size and IAO and their qualities. Indeed, the link of audit firm size on IAO without HC was found to be insignificant. Furthermore, it contributed to understand that the HC of large audit firm is greater than other audit firms and the audit reports of these kinds of firms possess good quality because of positive association amid firm size and quality of auditors.

**Keywords:** Human Capital; Work Experience; Independent Auditors' Opinion; Firm Size.

## 1. Introduction

Increase in the number of financial statement users was the driving factor behind the creation of auditing. Corporate failures like Anderson collapse and Enron demise gave rise to the necessity for high audit quality, and directed significant consideration to various factors which influence the audit quality. The absence of misstatements, omissions and biasness in the preparation of financial information is referred to as high quality audit. After the bankruptcy of Enron and WorldCom, Sarbanes-Oxley Act (SOX) (2002) established Public Company Accounting Oversight Board (PCAOB). PCAOB has a special task of observing the quality control mechanism of each firm, assess the value of audit job on particular audits and evaluate either through peer or process concerned to audit quality and policies (SAG, 2004). The focus of PCAOB is also on evaluating individual training programs, assignments of responsibility, professional competency of partners, compliance with independent standards, and assessing the policies for client satisfaction. This action from PCAOB shows that human resources management has an important role to play in audit quality (SAG, 2004).

Dang (2004) argues from the point of view of agency theory that the financial statements which are audited, act as a supervision system to give assurance to the people who use financial statements. Gray and Manson (2005) agreed with Dang (2004) when he stated that the role of an auditor is to monitor, secure accountability and provide unbiased opinions. Besides, the public concern about auditor's report has been shifted from audit firms to auditee companies, as according to Cheng et al. (2009), the auditors' quality to fulfil their responsibilities is a part of their characteristics.

Therefore, the ability of auditors to recognize and report a misstatement in financial statements is an important factor, this ability decreases during long working hours. In the process of auditing on financial statements, auditors face different kinds of errors and they learn how to report these errors in an audit report.

On an international scale, researchers have studied comparative opinion of auditors in large international CPA firms and judgment of auditor in medium and small regional and local firms (Frishkoff 1970; Caramanis and Spathis 2006; Al-Ajmi, 2009). The concern has been shown by Derieux Committee Report that with the passage of time smaller firms will not be able to sustain because they are less well-known, irrespective of how good their services are. According to DeAngelo (1981) this kind of situation creates concern about reliability on information in financial statements and auditors' reports. It has also been noted by DeAngelo that larger firms have more freedom in terms of audit income; hence, a qualified opinion is more feasible. By reviewing past studies on audit quality, size of audit firm and IAO, Naslmosavi et al. (2013) documented that although some factors in audit firms, such as high education, work experience, training, employee competence and skills can improve quality of auditor's opinion, but in some scholars' view, the relation of size and IAO was unclear. These scholars also found that the mentioned factors were located inside Human Capital (HC). Some authors in their various studies suggested the examination of the effect of HC on IAO.

Cheng et al. (2009) revealed that HC has been considered as valuable assets in the public accounting firms. Thus, Public accounting firms should train employees to work as per legal requirements, standards and public's anticipations. They ought to ensure that employees are provided with the desired expertise and professional skills (Cheng et al., 2009). On the other hand, employees also

expect the companies to develop a comprehensive human resource plan.

IAO term in this exploration, matches with second part of DeAngelo (1981) definition on audit quality. On the basis of this author's definition, audit quality includes: firstly; discovering material misstatements and secondly; report misstatements in the form of an opinion on the reliability of financial statements. Audit quality has been examined from different point of views in the books, for example, independence, ethics, judgments, reduced, reputation, quality of audit, size of firm, audit operation hours, audit fees, litigation rate and discretionary accruals. This research attempted to analyze the relationship between independent auditor's opinion and audit firm size by applying human capital as a mediator variable.

## 2. Background

Literature indicates the dearth of empirical studies using the human capital's components on IAO. Though, there have been few direct studies on experience, skills, employee competence, training and educational effect on auditor's opinion (2004). For instance, it has been believed by Morrise (1998) that the key role is played by the components of human capital in reporting the failure of success of audit firms. It has also been asserted by Pennings et al. (1998) that the survival of a firm depends upon the experience of the employees and owners of the firm. Whereas Bröcheler et al. (2004) presented that the performance of a firm is affected negatively by the size of a firm, however, experience at the start will have a positive influence on the performance of a public accounting firm. Authors agreed that an audit firm having high qualified auditors will have good performance at the inception of an audit firm.

However, Bonner's (1990) reported that prior studies have not considered the role of "task-specific knowledge" and established some problems that have significant correlation with experience, such as, the role of "task-specific knowledge" in cue selection and cue weighting in the analytical risk assessment and control risk assessment. The result of his study indicated that the "task-specific knowledge" improves the auditor's performance in analytical risk assessment of both cue-selection and cue-weighting components only.

Parallel to that DeAngelo (1981), firm size influences the auditor's opinion as an organizational characteristic. The author noted that the larger audit firms have high performance; therefore, auditors in large firms are more independent than the auditors in smaller firms. Furthermore, Watts and Zimmerman (1986) argued that a large firm provides good benefits to its auditors compared to those of smaller firms; hence, auditors in large firms have stronger incentive to maintain their independence. Chang et al. (2009) presented that larger audit firms have quasi-rent and more clients than other firms and they don't compromise on the quality of audit service as they don't want to lose their clients. It has also been mentioned by them that the performance of auditors can be improved by the HC.

Molina and Ortega (2003) analyzed the effect of training on firm's performance. They studied North-American firms and participants of the study were senior executive managers. They administrated Tobin's Q and Total Returns to Shareholders (TRS) for measuring IC and firm's value. In the context of human capital theory, the results of the study indicated that trainings about customer loyalty and employee satisfaction have direct impact on firm performance.

Further, Francis and Yu (2009) tested the impact of Big 4 firms on audit quality. The study was a compression test among large firms and other small audit SEC registered. The period of observation was 2003-2005. They found that big firms provide higher quality in auditing. However; the findings also showed that there is a systemic difference between the results of small audit performance versus large firms.

Similarly, Sundgren and Svanström (2011) examined whether and possibly how, audit quality and audit pricing vary between audit firms and audit offices. The authors investigated the dependent of audit quality and audit fee on audit firm size. They employed disciplinary sanctions as a measure of audit quality. The sample of study was Big 4 auditors and non-Big 4 auditors. The result of study showed that a negative association between likelihood of sanction and audit office size. The result showed that audit fees follow this pattern indicating that large audit firms attempt to have greater quality.

Therefore, this study tends to investigate the human capital as a mediator on the relationship between size of firm and IAO.

## 3. Human capital

Global market is based on the competition and companies have to use special leverage on the employees to convert them into competitive weapon for attaining competitive advantage. Thus, the focus on employees' productivity is a strategy to improve workforce value in a company (Marimuthu et al., 2009).

Organization for Economic Co-Operation and Development (OECD) defined Human capital as "The knowledge, skills, competencies, and attributes embodied in individuals that facilitate the creation of personal, social and economic well-being" (OECD, 2001, p.18). HC symbolizes skills and abstract knowledge gained through experience by individuals and interacting with other functions of the business in the organization (Sullivan, 1999). Allee (2000) delineates HC as the ability of the members of the organization to interact meaningfully with customers. It represents the individual's implicit knowledge and capability to provide solutions to the problems encountered by the organization. Moreover, Petty and Guthrie (2000) defined HC as the accumulation of individual's abilities, which entails changeability, knowledge about work procedures, competencies and innovativeness. Human capital is the stack of skills, understanding and individualistic abilities exemplified in the capability to execute work to generate financial value. It is the feature obtained by personnel through knowledge and experience (Sullivan and Steven, 2003). Also, HC can promote the performance of auditors and significant relationship has been seen between auditor's quality and audit firm size (2009).

## 4. Audit firm size

Scholars suggested examining the association of audit firm or public accounting size and quality of the opinion of auditors on financial statements. In this view, Yuniarti (2011) and DeAngelo (1981) believed that the number of clients, number of employees and the amount of "quasi-rent" can be determined by the size of the audit firms. Internationally, researchers have discovered the opinion of auditors in large international CPA firms and compared it to auditor's judgment in medium and small regional and national firms. The concern has been acknowledged by the "Derieux Committee reveals that the firms which are smaller in size may be wiped out as they are less well-known, no matter how good service providers they are. Users don't rely on auditing reports and accounting information in this situation (DeAngelo, 1981) It has also been noted by DeAngelo that the independent environment of larger firms let them collect more audit income, therefore, a qualified opinion is more feasible. Otherwise, Caramanis and Spathis (2006) found that audit firm's size does not have significant effect on auditor's opinion and this supported Sweeney and Roberts (1997) belief.

## 5. Independent auditor's opinion (IAO)

The second part of DeAngelo (1981) definition on audit quality explains that the auditors have to report their opinion about reliability of financial statements. According to Mautz and Sharaf (Mautz and Sharaf 1961), the term "independence" as it applies to

auditors is vital to professional codes and auditing standards. Rezaee (2002) noted that the purpose of auditing has moved from the detection of fraud to a report on the fair presentation of financial statements. External auditors verify the worth and reliability of printed financial statements. This action enhances investor confidence in the reporting structure and contributes to enhance efficiency of capital market. Hence, the quality of opinions and effectiveness established by the auditor on the financial statements is essential, because reports on financial statements should be useful, relevant and reliable to creditors and stockholders (Rezaee 2002). The opinion of auditors has been categorized on the basis of material misstatements into "unqualified opinion", "qualified opinion", "adverse opinion", "disclaimer opinion" and "dual opinion" (especially for Iranian audit report) (AICPA 2006; IACPA 2013)

## 6. Human capital theory

Human and physical capital stock has an important role on economic welfare and performance of a nation (Olaniyan and Okemakinde, 2008). Although the focus of former studies was on economic researches, scholars in social sciences have increased their studies on human factors. Generally, human capital argues that economic productivity will be enhanced by the investment on human (Olaniyan and Okemakinde, 2008). Human capital theory indicates that how education and experience can affect the economic productivity. Babalola (2003) argued that investment in human capital is based on three viewpoints:

- i) The new generation ought to earn accumulated knowledge from old generation;
- ii) The new generation need to find how exciting knowledge can increase the quality of services and new productions; and
- iii) For getting new idea to improve methods, productions and process, individual need to encourage.

Based on Fagerlind and Saha (1997) idea, the basic reason for big public expenditure on education is provided by human capital theory.

In accordance with the above arguments, SAG (2004) and FRC (2006) observed the significance of HC managements among accounting firms. The bodies considered that these days the concerns of public have changed from the quality of audited client to public accounting firms (Cheng et al., 2009). likely as the auditors serves their opinions to managers, bankers, investors and other financial statements' users, the quality of their reports depended on experience, skills, training and other components of HC. Collectively, HC and its theory signaled the paper's researcher for understanding the relationship of HC and the auditors' opinion quality.

## 7. Research methodology

Data collection and data analysis of this study are based on the quantitative approach and the data has been collected through questionnaire. This study has categorized private firms into small, large and medium. The auditors were selected from the population of 861 managers, partners and experienced auditors who had authority to sign audit report period of this study (IACPA, 2015). Participants had a minimum of six years' experience. The total number of private firms (IACPA's members) was 259 out of which 239 firms are located in Tehran and 20 of them are located in other states. The population of managers in private firms was 801 in Tehran and 60 in other states (IACPA 2015). The questionnaires were sent to all the respondents. To test the effect of human capital as a mediating role on the relationship between auditor's opinion and audit firm size, independent ANCOVA, partial correlation and path analysis in structural equation model (SEM) were integrated. SPSS and LISREL software calculated the conceptual equation model.

The data was collected by with the administration of questionnaires and the structured questionnaire consisted of three parts. The first part focused on the demographic characteristics of the

respondents, questions which recognized the number of employees as a representative of audit firm size and the second part determined the auditor's decision making in ethical dilemma conditions. The respondents were asked to imagine that they were the hypothetical firm's auditors where client management differ with the auditor that the amount was said to be material and fundamental, with 12.5% materiality formulate a subjective judgment concerning the dilemma with the help of five- point Likert scale. Clients were assorted by means of presenting three statements; external audit is tendered (yes or no), size of fees (large or small), and the financial condition of client (good or bad). Third part of the questionnaire included questions related to human capital.

### 7.1. Hypothesis

The mediator variable is the expression of the third variable which constitutes generative process that must occur for the independent variable to have an effect on a dependent variable (Baron and Kenny 1986). Keeping this theory in view, the total of employees and "quasi-rent" of an audit firm has an impact on its size (DeAngelo, 1981; Watts and Zimmerman, 1981). Hence, this study puts forward the following hypotheses:

H<sub>1</sub>: Human capital has the mediator role between the connection of audit firm's size and IAO

This can additionally be classified into two:

H<sub>1a</sub>: Size of an audit firm greatly influences human capital

H<sub>1b</sub>: Human capital greatly influences IAO.

H<sub>1c</sub>: Size of an audit firm greatly influences IAO

Baron and Kenny (1986) suggested three steps for taking mediation role of a variable, while several scholars in social science critiqued and revealed that the Baron and Kenny [24] steps for calculating mediator role is not suitable for social since in all times (Rucker et al., 2011).

On the other hand, Preacher and Kelley (2011) noted that there is no need to use words like partial, full, or complete if the goal is to suggest an effect of a variable on the relationship between two other variables.

One of the strongest analysis methods in behavioural and social sciences research is multivariate analysis. The nature of these issues is multivariate and cannot be solved by two variables way (each time only one independent variable is considered with a dependent variable), therefore, this study uses multivariate analysis. Multivariate analysis refers to a set of analysis methods where their main characteristics are the analysis of the K independent variables and N dependent variable. Covariance Structures Analysis, causal modelling or structural equation modelling is one of the main analysis methods of complex data structures.

On the basis of critiques and because of the advantage of multivariate analysis, this study applied Analysis of Covariance (ANCOVA) and partial correlation for finding the relation of variables and consequently, path analysis method in SEM was applied to examine the effect of HC as an observed variable (Yuniarti, 2011) on the relationship of audit firm size and IAO.

### 7.2. Path analysis

Statistical method used mainly to investigate the relative strength of direct and indirect relationships between variables is called path analysis. Various parameters are projected with the solution of one or more equations for testing the correlation matrix among more than one causal model, which are hypothesized by the researcher to support the information he has. A path coefficient shows the direct influence of a variable which is assumed to be the cause on another variable which is assumed to be affected. When a variable has an effect on a dependent (endogenous) variable by means of its effect on another variable (called intervening variable), an indirect effect happens (Agresti and Finaly, 1997). For causal effects, there are effects which are directly related to two variables (direct effect), and there are effects which are interceded by intervening variables (indirect effects). The collective effect of a variable is the total of all direct and indirect effects it has on other variable.

### 8. The results of hypothesis testing

As mentioned earlier, some scholars noted that audit firm size has relationship with auditors' quality and also their opinion, whereas some other scholars documented that the relation between these two items was unclear. This study attempted to examine their relationships. In addition, on the basis of literature and the examination of HC and IAO, the study found that HC and its dimensions significantly affected IAO. As HC may improve the audit firm quality, the large audit firm can improve auditor's quality. Therefore, this research attempted to apply HC as a mediator variable, whether there was any association amid audit firm size and IAO.

Because of the nature of variable (nominal) (Montgomery et al., 2012), this study applied path analysis model for measuring the effect of HC on the association amid audit firm size and IAO. Hence, the study followed the literature on the size, like the work done by Yuniarti (2011), who applied path analysis in structural equation model (SEM). Therefore, the test in this part had three steps, in the first step, the ANCOVA test was employed to test the effect of variables (Rutherford, 2011, Montgomery et al., 2012) in the second step, partial correlation examined the relationship among variables, and in the last step, path analysis in structural equation model by LISREL examined the effect of mediator role of HC on the association amid audit firm size and IAO.

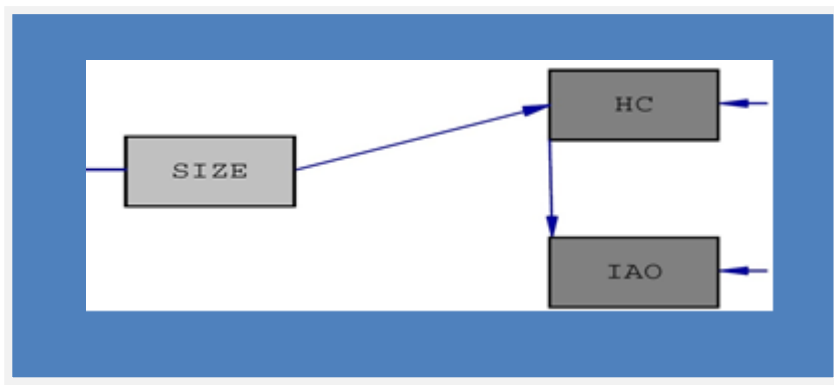
Step 1: The effect of HC on the association amid audit firm size and IAO was examined by ANCOVA. This step showed that the variables can affect each other. The results of tests are illustrated as follows:

**Table 1:** ANCOVA Tests of between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	128.837 <sup>a</sup>	3	42.946	206.148	0.000
Intercept	8.076	1	8.076	38.768	0.000
HC	36.837	1	36.837	176.825	0.000
size	1.240	2	0.620	2.975	0.052
Error	66.039	317	0.208		
Total	3395.609	321			
Corrected Total	194.875	320			

a)  $R^2 = 0.661$  (Adjusted  $R^2 = 0.658$ )  
 b) Dependent Variable: IAO

The ANCOVA results in table 1 specified that the effect of covariate HC with (Sig=0.000) and (F=78.105, p<.05) on the relationship between audit firm size on IAO was confirmed. It signifies that HC mediates the relationship of independent and dependent variables. The adjusted  $R^2$  of 0.658 showed that the variables in the model describe 65.8% of the variation in IAO. Therefore, the hypothesis of  $H_1$  was accepted.



**Fig. 1:** The Conceptual Model on the Effect of HC on the Relationship between Size and IAO.

After conceptual model, during the analysis, the estimated standard model measured the effect of HC on the relationship between IAO and audit firm size (Figure 2).

Step 2: In this step, the role of HC on the relationship between independent auditor's opinion and audit firm size has been clarified. The statistical phase in partial correlation showed the relation of audit firm size on IAO, and the test controlled mediator variable (HC) (Hayes, 2009; MacKinnon et al., 2000; Zhao et al., 2010). In fact, this test comprised the factors which created the significant relationship between audit firm size and IAO. The result of test and also the discretion of results are presented as follow:

**Table 2:** The Partial Correlations of HC on Size and IAO

Variables		IAO	Size	HC	
-none- <sup>a</sup>	IAO	Correlation	1.000	0.809	
		Significance (2-tailed)	.	0.000	
		Df	0	319	
	Size	Correlation	0.664	1.000	0.807
		Significance (2-tailed)	0.000	.	0.000
		Df	319	0	319
	HC	Correlation	0.809	0.807	1.000
		Significance (2-tailed)	0.000	0.000	.
		Df	319	319	0
HC	IAO	Correlation	1.000	0.029	
		Significance (2-tailed)	.	0.602	
		Df	0	318	
	Size	Correlation	0.029	1.000	
		Significance (2-tailed)	0.602	.	
		Df	318	0	

The test results presented in Table 2 indicated that the calculated significance level was less than 5% (Sig ≤ 0.05). This means that audit firm size had a significant relationship with the opinions of independent auditors. The result showed that with controlling mediator variable (HC), the audit firm size's relation with independent auditor's opinion was insignificant, in fact, the size of an audit firm without HC as an indirect variable could not relate to IAO. Therefore, HC played the role of a mediator between the relationships of two variables.

Step 3: In the third step, to test the relation of observed variables (size, HC and IAO) this study applied path analysis method in structural equation modelling (SEM) (Yuniarti, 2011). SEM was applied through LISRELL to investigate the causal relationship between variables, conceptual model and path analysis. During the path analysis, first model for measuring the effect of HC on the association amid IAO and audit firm size was conceptual model which is demonstrated in Figure 1.

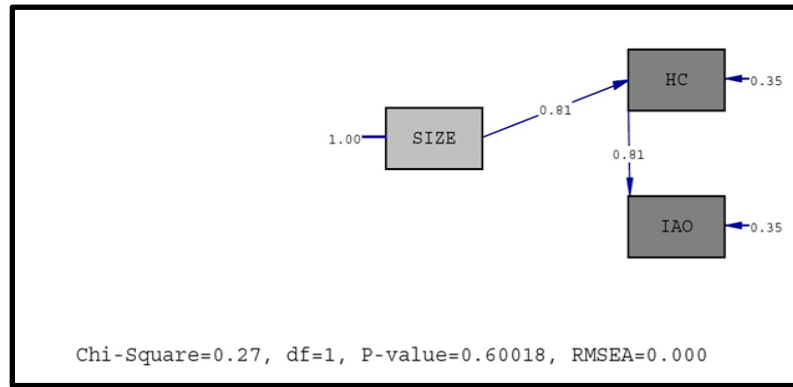


Fig. 2: The Measurement Model for Mediating Role of HC in Standard Estimating Analysis.

In the above equation model and other suitability criteria of model fitting were examined. In this model, the estimated value of was equal to 0.27, indicating that this model was appropriate (Schumacker and Lomax, 2004). Based on the results, whenever is low, the proposed model is appropriate. The results for the measurement model for audit firm size, HC and IAO are illustrated in Table 3:

Table 3: The Result of Structural Model

Index	Result	Index	Result
X <sup>2</sup>	0.27	Df	1
X <sup>2</sup> /df	0.27	P-Value	0.060018
RMSEA	0.00	Goodness of Fit Index (GFI)	1.00
Adjusted Goodness of Fit Index (AGFI)	1.00		

It can be seen, the X<sup>2</sup>/df is 0.27 and the Goodness of Fit Index (GFI) is equal to 1.00 and the Adjusted Goodness of Fit Index (AGFI) is 1.00. The results of the model indicated that the HC can

mediate the relationship between audit firm size and IAO. The chi-square and RMSEA values were low while the GFI and AGFI values were above 90%. The result of standard estimating analysis showed that the Root Mean Square Error of Approximation (RAMSEA) was less than 10% (RMSEA=0.0) and the Goodness of Fit Index was more than 0.9 (GFI=0.99), which indicates the model is good fit (Hoyle,1995)

Generally, the structural model on the mediating effect of HC on the association amid independent auditor’s opinion and audit firm size was confirmed. The direct and indirect effects of HC and audit firm size on IAO presented in the structural equation model illustrated that the effect of size of audit firm on HC was 0.81 and the effect of HC on IAO was 0.81, therefore, it can be interpreted that the size of audit firm has an indirect effect on IAO. Indeed, the audit firm size with the mediating role of HC affected IAO with 0.65 (0.81× 0.81) (Yuniarti, 2011, Cheng et al., 2013). The next output is T- Value model on the relation of variables.

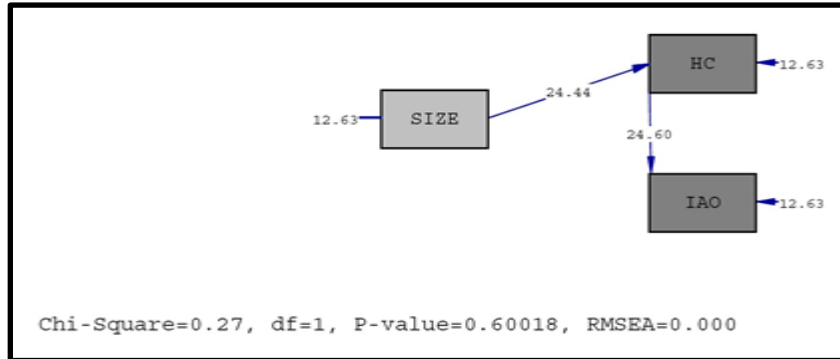


Fig. 3: The Measurement Model for Auditor Opinions Using Path Analysis for T- Value.

The T-Value model used for the opinions of auditors strongly suggested that all the coefficients were significant because each of the test’s value was greater than 2. To understand the effect of HC on the relationship between IAO and audit firm size, the output of model is illustrated as follows:

The following table shows the most important fitting indices (Hoyle, 1995). Table 3 reveals that the conceptual model used for this study was suitable for explaining the model.

Table 4: Models of Fit Indices

Index	Tolerance	Value in the model
Goodness of Fit Index (GFI)	More than 0.8	1.00
Root Mean Square Error N((ofApproximation (RMSEA)	Less than 0.9	0.00
Comparative Fit Index (CFI)	More than 0.9	1.00
Adjusted Goodness of Fit Index (AGFI)	More than 0.9	1.00
Normed Fit Index (Bonfim and Antão)	More than 0.9	1.00

The table presented a comparison among standards indices in structural equation model and the study indexes.

### 9. Discussion and concluding remarks

The Financial Reporting Council (FRC) (2006) stated in their published paper, “Promoting audit quality”, that important factors which can determine auditor’s quality include skills, auditor’s training and individual qualities of partners and employees in audit firms. In accounting firms, the practice to increase competency and expertise will promote quality of auditors and it will indicate that public accountancy companies are the specialized service providing organizations with fair concerns on human resource management (Cheng et al., 2009). Scholars point out that some activities such as investment in HC, Continuing Professional Development (CDP), auditor’s education, and experience in different jobs, professional skills development and certification for public accountants can promote auditor’s quality. In this context, Liu (1997) revealed that while analyzing the relationship between HC investment, legal obligation and auditor’s quality, the role of

HC has been ignored by the companies. Thus, the author suggests that major factors related with HC such as work experience, skills, professional certification, education levels should be considered by scholars.

The findings of this study demonstrate that the effect of audit firm size on HC is significant. Based on the other scholars work, the size of an audit firm is affected by HC. This implies that the size of audit firm determines the investment in HC and the bigger firms invest in maintaining the quality of the auditors by arranging training sessions, improving skills, hiring high educated auditors and rewarding them on the basis of competency. Moreover, HC has significant impact on IAO.

As explained in literature, if large audit firms become scandalous, deliver poor quality audits and exhibit poor independent judgment then they can lose clients, which are also explained in the books. These potential problems prompt the betterment of audit quality. Direct association amid firm size and audit quality are identified by researchers (Cheng et al., 2009). DeFond (1992) and Francis and Wilson (1988) concluded that reputation of their firms is very significant for them.

DeAngelo (1981) was convinced that managers in large firms try to preserve the quality of their staff by conducting some tasks, like training and development and education. Additionally, Chang et al. (2009) showed that besides being special from accounting firms that are non-public, the effect of HC on audit quality in this kind of firms is huge. Like DeAngelo (1985), DeFond (1987) and Francis and Wilson (1988) too were convinced that education, experience and training may help to growth audit quality. Hence, the size of an audit firm influences training facilities. Researchers tried to look into the association amid audit firm size and its audit quality. They found out that the large audit firms have more quasi-rent and clients than others; they fear they might lose their clients because of the low quality of audit services provided by them (Cheng et al., 2009) Some of the scholars like Sweeney and Roberts (1997) and Caramanis and Spathis (2006) found a little relationship between audit firm size and independent auditor's opinion. On the contrary, other scholars, such as Watts and Zimmerman (1986) and change et al. (2009) provided different ideas on this relationship. In the second step of mediating test, partial correlation results presented that by controlling mediator variable (Hayes, 2009; MacKinnon et al., 2000; Zhao et al., 2010), audit firm size's relationship with IAO was insignificant. All this implies that HC could create a relation amid audit firm size and IAO. Findings of this paper also illustrated that HC has significant effect on the association amid IAO and audit firm size. This signifies that HC has mediating role on the relationship between independent auditor's opinion and audit firm size. This result suggests that HC can improve the quality of audit firm and it can also improve auditors' opinion, because more experienced auditors with good skills will attempt to give proper opinion. This study attempted to show that when HC is included in the relationship between independent auditor's opinion and audit firm size, it can create and enhance their relationship. Based on the results, it is clear that regular auditors' training will improve their skills and make them better, and they may get more experience through "learning by doing".

The Iranian audit firms can be divided into three groups; small, medium and large. The bulk of these enterprises are in small and medium size. In the last few years, the discussion on the combination of small firms with other firms to move towards enlargement has been very popular, but the small and medium firms have not been able to grow through merging with other firms (Hajizadeh, 2009). The audit firm may grow bigger when it has more customers. As long as the audit firms do not provide a variety of services to their client, it cannot be expected to have strong auditing firms (Hajizadeh, 2009). Hence, the result on HC's mediator role strongly demonstrates that small and medium audit firms must be combined together for decreasing their costs, and ultimately promoting themselves responsible in front of clients and all financial statements users.

## References

- [1] Agresti, A. and Finlay, B. (1997). *Statistical methods for the social sciences*. New Jersey: Prentice Hall.
- [2] AICPA. (1978). *Commission in Auditors' Responsibilities*, New York, NY.
- [3] AICPA. (2006). Revised on "Report on Audited Financial Statements", 508 (Vol. 58,59,64,79,85,93,98): AICPA.
- [4] Allee, V. (2000). The Value Evolution, Addressing Larger Implications of an Intellectual Capital and Intangible Perspective. *Journal of Intellectual Capital*, 1(1), 17-32. <http://dx.doi.org/10.1108/14691930010371627>.
- [5] Al-Ajmi, J. (2009). Audit firm, corporate governance, and audit quality: Evidence from Bahrain. *Advances in accounting*, 25(1), 64-74. <http://dx.doi.org/10.1016/j.adiac.2009.02.005>.
- [6] Baron, R. M. and Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations. *Journal of personality and Social Psychology*, 51(6), 1173-1182. <http://dx.doi.org/10.1037/0022-3514.51.6.1173>.
- [7] Babalola, J. B. (2003). *Budget Preparation and Expenditure Control in Education*. In
- [8] *Babalola, J.B. (ed) Basic Text in Educational Planning*. Ibadan Awemmark Industrial Printers.
- [9] Bonner, S. E. (1990). Experience Effects in Auditing: The role of Task-Specific Knowledge. *The Accounting Review*, 65(1), 72-92.
- [10] Bontis, N. (2001). Managing Organizational Knowledge by Diagnosing Intellectual Capital: Framing & Advancing the State of the Field *The Strategic Management of Intellectual Capital & Organisational Knowledge*. New York: Oxford University Press, Inc. 621-642
- [11] Bröcheler, V., Maijoor, S. and Witteloostuijn, A. V. (2004). Auditor human capital and audit firm survival the Dutch audit industry in 1930-1992. *Accounting Organization and Society*, 29, 627-646. <http://dx.doi.org/10.1016/j.aos.2003.10.008>.
- [12] Caramanis, C. and Spathis, C. (2006). Auditee and audit firm characteristics as determinants of audit qualifications, evidence from Athens stock exchange. *Managerial Auditing Journal*, 21(9), 905-920. <http://dx.doi.org/10.1108/02686900610705000>.
- [13] Cheng, Y.-S., Liu, Y.-P. and Chien, C.-Y. (2009). The association between auditor quality and human capital. *Managerial Auditing Journal*, 24(6), 523-541. <http://dx.doi.org/10.1108/02686900910966512>.
- [14] Dang, L. (2004). *Assessing Actual Audit Quality*. PhD, Drexel University, Philadelphia, USA.
- [15] DeAngelo, L. E. (1981). Auditor sized and audit Quality. *Journal of Accounting and Economics*, 3, 183-199. [http://dx.doi.org/10.1016/0165-4101\(81\)90002-1](http://dx.doi.org/10.1016/0165-4101(81)90002-1).
- [16] DeFond, M. L. (1992). The association between changes in client firm agency costs and auditor switching. *Auditing: A Journal of Practice and Theory*, 11(Spring), 16-31.
- [17] Fagerlind, A. and Saha, L. J. (1997). *Education and National Developments*. New Delhi: Reed Educational and Professional Publishing Ltd.
- [18] Flint, D. (1988). *Philosophy and principles of auditing an introduction* basingstoke: Macmillan Education Ltd.
- [19] Francis, J. R. and Wilson, E. R. (1988). Auditor changes: A joint test of theories relating to agency costs and auditor differentiation. *The Accounting Review*, 63(4), 663-682
- [20] Francis, J. R. and Yu, M. D. (2009). The Effect of Big Four Office Size on Audit Quality. *The Accounting Review*, 84(5), 1521-1552. <http://dx.doi.org/10.2308/accr.2009.84.5.1521>.
- [21] Frishkoff, P. (1970). An empirical Investigation of the Concept of Materiality in Accounting," *Empirical Research in Accounting. Selected Studies*. *Journal of Accounting Research*, 8, 116-129. <http://dx.doi.org/10.2307/2674697>.
- [22] Gray, L. and Manson, S. (2005). *The audit process, principles, practice and cases*. London: international Thomson Business Press.
- [23] Hajizadeh, M. (2009). Unrealistic Rate and Unethical Audit Firms' Competition. *Journal of Certified Accountant* 7, 36-38.
- [24] Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical Mediation Analysis in the New Millennium. *Communication Monographs*, 76, 408-420. <http://dx.doi.org/10.1080/03637750903310360>.
- [25] Hoyle, N. (1995). *Structural Equations Modeling: Concepts, Issues and applications*. USA: SAGE Publication, Inc.
- [26] Liu, C. (1997). *Legal Liability, Human Capital Investment, and Audit Quality*. Ph.D. Dissertaion, University of National Taiwan University, Taipei.

- [27] Organization for Economic Co-operation and Development (2001). *The Well-Being of Nations: The Role of Human and Social Capital*. OECD. Paris.
- [28] Olaniyan, D. A. and Okemakinde, T. (2008). Human Capital Theory: Implications for Education Development. *European Journal of Scientific Research*, 24(2), 157-162.
- [29] Iranian Association of Certified Public Accountants. (2015). The Number of IACPA's Members, from [www.iacpa.ir](http://www.iacpa.ir).
- [30] Iranian Association of Certified Public Accountants. (2013). Independent Auditor's opinion on financial statments, from [www.iacpa.ir](http://www.iacpa.ir).
- [31] MacKinnon, D. P., Krull, J. L. and Lockwood, C. M. (2000). Equivalence of the Mediation, Confounding, and Suppression Effect. *Prevention Science*, 1, 173-181. <http://dx.doi.org/10.1023/A:1026595011371>.
- [32] Marimuthu, M., Arokiasamy, L. and Ismail, M. (2009). Human Capital Development and Its Impact on Firm Performance: Evidence from Developmental Economics. *The Journal of International Social Research*, 2(8), 265-272.
- [33] Molina, J. A. and Ortega, R. (2003). Effects of Employee Training on the Performance of North-American Firms. *Applied Economics Letter*, 10(9), 549-552. <http://dx.doi.org/10.1080/1350485032000100297>.
- [34] Montgomery D, Peck, E. A. and Vining, G. (2012). *Introduction to Linear Regression Analysis*, 5th Edition. U.K: WILEY.
- [35] Morrise, T. and Empson, L. (1998). Organisation and experties: An exploration of knowledg bases and managment of accounting and consulting firms. *Accounting, Organizations and Society*, 23(5/6), 609-624. [http://dx.doi.org/10.1016/S0361-3682\(98\)00032-4](http://dx.doi.org/10.1016/S0361-3682(98)00032-4).
- [36] Naslmosavi, S., Sofian, S. and Saat, M. (2013). The Effect of Audit Firm Size on Independent Auditor's Opinion: Conceptual Framework. *Asian Social Science*, 9(9), 243-248. <http://dx.doi.org/10.5539/ass.v9n9p243>.
- [37] Pennings, J. M., Lee, K. and Witteloostuijn, A. (1998). Human capital, social capital, and firm dissolution. *Academy of Management Journal*, 41(4), 425-440. <http://dx.doi.org/10.2307/257082>.
- [38] Petty, R. and Guthrie, J. (2000). Intellectual capital literature review measurment, reporting and managment. *Journal of Intellectual Capital* 1(2), 155-176. <http://dx.doi.org/10.1108/14691930010348731>.
- [39] Preacher, K. and k, K. (2011). Effect Size Measures for Mediation Models: Quantitative Strategies for Communicating Indirect Effects. *American Psychological Association*, 16(2), 93-115. <http://dx.doi.org/10.1037/a0022658>.
- [40] Rucker, D. D., Kristopher J. Preacher, L.Tormala, Z. and Petty, R. E. (2011). Mediation Analysis in Social Psychology: Current Practices and New Recommendations. *Social and Personal Psychology Campass*, 5/6, 359-371. <http://dx.doi.org/10.1111/j.1751-9004.2011.00355.x>.
- [41] Schumacker, R. E. and Lomax, R. G. (2004). *A beginner's guide to structural equation modeling*. Mahwah, NJ: Lawrence Erlbaum Associates.
- [42] Stewart, T. (1997). *Intellectual Capital: The new Wealth of Organization*, Currency Doubleday. New York.
- [43] Sullivan, P. H. (1999). Profiting from Intellectual Capital. *Journal of Knowledge Management*, 3(2), 132-143. <http://dx.doi.org/10.1108/13673279910275585>.
- [44] Sullivan, A. and Steven, M. S. (2003). *Economics: Principles in Action*. New Jersey: Wiley .
- [45] Sundgren, S. and Svanström, T. (2011). Audit Office Size, Audit Quality and Audit Pricing: Evidence from Small and Medium Sized Entities. Retrieved from <http://ssrn.com/abstract=1869945>, (2012).
- [46] Sweeney, J. T. and Roberts, R. W. (1997). Gognitive Moral Development And Auditor Independence. *Accounting Organization and Society*, 22, 337-352. [http://dx.doi.org/10.1016/S0361-3682\(96\)00025-6](http://dx.doi.org/10.1016/S0361-3682(96)00025-6).
- [47] Watts, R. L. and Zimmerman, J. L. (1981). The markets for independence and independent auditors, Unpublished manuscript. University of Rochester., NY.
- [48] Watts, R. L. and Zimmerman, J. L. (1986). *Positiue accounting theory*. New York: Prentice Hall, Inc.
- [49] Yuniarti, R. (2011). Audit firm size, audit fee and auditor quality. *Proceedings of the 2011 International Conference on Business and Economic Reserch (ICBER)*,
- [50] Zhao, X., Lynch, J. G. and Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and Truths about Mediation Analysis. *Journal of Consumer Research*, 37, 197-206. <http://dx.doi.org/10.1086/651257>.