

Provide a model of auditors' professional ethics behaviour with emphasis on ethical climate using interpretive structural modelling from the professional experts' perspective

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Abstract

Many audit failures are due to ethical slips and unethical behaviours, and auditors' understanding of the ethical climate can affect auditors' behaviour and attitudes. The purpose of this study is to provide a model of auditors' professional ethics behaviour with emphasis on the ethical climate and it has been conducted based on two qualitative and quantitative approaches by selecting 10 experts from the community of certified public accountants through purposive sampling. In the first part, we identified the indicators using library studies and specialized interviewing. Theme analysis and fuzzy Delphi technique were applied to analyse the qualitative data and screen the indicators respectively. In the next step, a model was developed using the quantitative method of ISM. According to our findings, the most fundamental constructs influencing auditors' professional ethics are ethical climate, economic conditions, social culture, ethical ideology, organizational structure, management and leadership, policy and policy-making, monitoring and evaluation, skills and potentials, personal characteristics, recruitment and retention, Professional commitments and job ethics. Accordingly, the audit organization can create and develop an ethical climate and use other identified factors to add more dynamism to the auditors' professional ethics, improve ethical and professional standards and enhance the auditors' capabilities and public trust.

Keywords: Ethical values, Auditors' professional ethics, Ethical climate, Mixed approach
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1 Introduction

In today's societies, considering the impact and consequences that the actions and activities of organizations have on society and stakeholders, societies have become much more sensitive to these activities than before. Meanwhile, ethics has become increasingly important due to its increasing role in the society. Organizations' disregard for ethics and their compliance with ethics in relation to their employees or external stakeholders can create problems for the organization or even question their legitimacy. Furthermore, understanding the issues related to individuals and organizations can increase the effectiveness of the performance of organizations. Ethical climate can be considered as a key factor in organization's success through identifying and evaluating situations for employees.

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Research has shown that the ethical climate of the organization is related to organizational values and ethical behaviour of employees [12]. The lack of such climate in an organization would lead to employees' unethical decisions, behaviours and choices [22]. A distinctive feature of the auditing profession is the acceptance of responsibility toward the public [17]. Therefore, due to the nature of the services it provides, this profession must have a certain credibility and trustworthiness in its ethical climate. The continuation of this credibility and trustworthiness and its improvement depends on the intellectual and actual commitment of the professional members to behavioural and ethical standards [24]. When substantial issues such as ethics and auditing are getting combined, there needs to be more caution; Especially in the current situation where the disregard of some ethical standards has led to financial corruption and there have been many concerns in the governmental and non-governmental sectors for large-scale banking abuses and also the country's corruption ranking of 138 among 180 countries in 2018 [45].

The review of the literature regarding auditors' professional ethics shows the lack of studies investigating the effects of ethical climate and insufficient attention to the role of ethical climate in decision-making process and auditors' work ethics. Therefore, we emphasise on the significance of ethical issues and behaviours which contribute to the creation of an ethical climate in the auditing profession. Therefore, to justify the necessity of this research, following points could be made:

1. Recent scandals indicate the failure of auditors to perform their duties in accordance with codes of professional behaviour.
2. Insufficient power of behavioural codes
3. Existence of contradictory ethical principles, existence of inappropriate beliefs or loyalty to inappropriate values
4. Auditor's different understanding of ethically acceptable behaviour, which leads to a difference in ethical decision-making. In this regard, ethical climate can be effective through the generation of a common understanding.
5. The existence of a gap in understanding the organizational climate
6. Comprehensive study of formal and informal ethics
7. This study can help increase the individual performance of auditors in accordance with the reciprocal norms with an understanding of the ethical climate, through the study of individual and environmental characteristics and comprehensiveness.

2 Theoretical Basis and Literature Review

Ethical decision-making models focus on individuals' cognitive thinking and these decision-making methods go beyond the standards and bylaws of the accounting profession [2]. As long as auditors perform their duties in accordance with the codes of professional behaviour, their behaviour will be considered ethical [28]. However, in practice accountants and auditors have to respect ethical values in addition to their professional duties [8]. In this regard, auditors seek to increase the quality of their auditing in order to increase their professional credibility and ethical reputation and to avoid lawsuits. Achieving this goal depends on the observation of the principles of auditors' professional behaviour [16]. Since the ethical climate of the organization is a function of the organization's content, as a result, organizations are social actors responsible for the ethical and unethical behaviours of their employees. It shows that organizations can take the necessary measures not only to improve the perception of ethics, but also to improve the ethical behaviour of their employees [22].

The ethical climate of the organization is tangible and the way these conditions are perceived by employees can lead to many organizational consequences. This includes the impact of an ethical climate on employees' behaviours and attitudes, which could be in ethical or unethical form. Therefore, an ethical climate must be cultivated. Of course, it should not be conducted to deceive others and jeopardize their interests for personal gain. In other words, the ethical climate should not be exploited [33]. Employees' perceptions of ethical climate or culture in their organization also affect a variety of ethical decisions and yet less attention has been paid to the role of ethical climate in the decision-making process and auditors' professional ethics [41]. The importance of ethical issues and behaviours and contributing to the creation of an ethical climate in the auditing profession is also stressed [29].

Despite researchers' attention to the topic of ethics, unethical behaviours such as fraud, corruption, and bribery are constantly reported and increasing daily. The lack of proper education of ethics and the disregard in introduction of ethical misbehaviours have raised fraudulent activities that have a detrimental effect on the financial markets. From the public's perspective, this is due to auditors' lack of proper perception of ethical principles and their unethical behaviours. It could lead to a crisis by which the legitimacy of these auditors is in jeopardy.

3 Research Background

Otaye, Shaffakat and Foster [32] in a study titled as "A multilevel model for examining the relationships between spirituality in the workplace, ethical climate and the results of the cognitive and social Theory Perspective" showed three salient findings. First, spirituality in the workplace had a positive relationship with ethical climate, social motivation, and ethical judgment. Second, the ethical climate mediates the relationship between the variable of spirituality of the workplace, social motivation and ethical judgment. Third, the ethical climate is significantly related to the behaviour and performance of services at the branch level.

Pratama, Ahmad and Innayah [34] in their research titled "Presenting a New Model on Auditors' Professional Ethics" introduced the four main dimensions of professional attitude, ethical judgment, independence and professional scepticism as general components of auditors' professional ethics.

Awaluddin et al. [5] in a study titled "investigating the factors affecting auditors' professional ethics" concluded that expertise, professional scepticism and spirituality are the most important determinants of auditors' professional ethics. It was also indicated that auditors' emotional intelligence plays a mediating role in this regard.

Haeridistia and Fadjarenie [17] in a study examined the relationship between auditors' professional ethics, their independence, experience and auditing quality. According to their findings, it was concluded that the two factors of auditors' independence and experience have a significant correlation with auditors' professional ethics. They also expressed that auditors' professional ethics has a significant impact on improving the quality of auditing.

Idris, Jamali and Sjahruddin [20] in a study examined the relationship between ethical judgment, auditors' experience and their professional ethics. The results of this study indicated that the more the experience of the auditor, the more the extent of his ethical judgments. It was also found that both the factors of ethical judgment and auditors' experience have a significant relationship with auditors' professional ethics.

Hajipour and Barzegar [18] conducted a study on the importance of ethics and ethical leadership of public sector accountants. Findings indicated that employees' perception of the leader's ethical behaviours had a positive and significant relationship with leadership effectiveness. Furthermore, employees' preferences toward ethical leadership and their understanding of the organization's ethical culture did not moderate the relationship between the understanding of the leader's ethical behaviours and the leader's effectiveness.

Ahmadi, Ahangari and Salehinia [3] in a study titled as "the modelling of the constructs affecting the ethics of auditing Profession using structural-interpretive modelling" concluded that competition in the auditing market, type and power of corporate governance, private or non-private ownership of the organisation, the size of the organization, lack of compromise due to the employer threats to fire the auditor, auditor's financial problems and economic fluctuations such as rising exchange rates and inflation were identified as the most fundamental constructs affecting professional ethics.

Mousavikashi and MohseniKabir [28] in a study titled as "the influence of organizational silence on the professional and ethical performance of auditors" concluded that the average organizational silence among the auditing organization members is less than the community of certified public accountants. Moreover, defensive silence has a significant impact on the decline of professional performance in both private and public sectors.

Talebnia, Rajabdari and Khanidelan [42] in a study titled as "accountability prediction in Certified Public Accountants based on professional ethics" indicated that there is a positive and significant relationship between the level of professional ethics and accountability and the higher the professional ethics, the higher the accountability.

4 Research Methodology

The present paper is an exploratory study, which has been aiming to identify the dimensions of auditors' professional ethics with an emphasis on the ethical climate. From a philosophical point of view, this study falls into the category of empirical research and has been conducted with a deductive-inductive approach. The research is fundamental in terms of purpose and has been done based on a mixed research method. Considering that in this research, library methods as well as field methods such as reading articles, interviews and questionnaires have been used, it could be concluded that the present study is a cross-sectional survey in terms of the data collection method. The spatial scope of this study is the Iranian Society of Certified Public Accountants. The criterion for the selection of experts is a minimum of ten years of experience in the field of auditing or having scientific writings in this field in the form of books and articles. We also used purposive sampling in this analysis. Accordingly, 10 eligible individuals participated in this study.

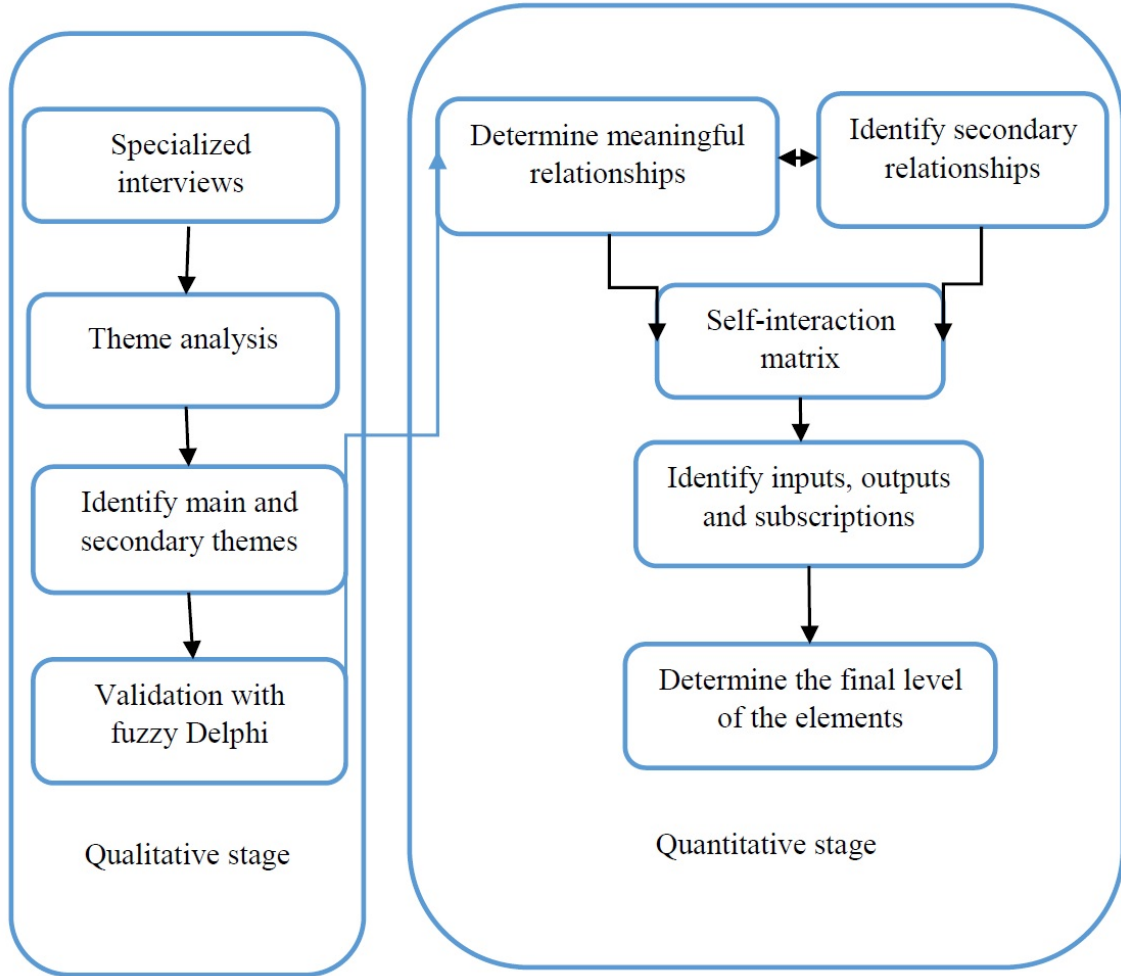


Figure 1: the framework of Provide a model of auditors’ professional ethics behaviour with emphasis on ethical climate

Since quantitative methods alone cannot assess the complexity of the issues and elements that make up the auditors’ professional ethics model with an emphasis on the ethical climate, a combination of quantitative-qualitative methods has been used. In the qualitative section, the classification, coding and identification of components related to the model of auditors’ professional ethics with emphasis on ethical climate have been conducted using the content analysis method employing MAXQDA software, through conducting library studies, semi-structured specialized interviews of experts. In quantitative stage, the fuzzy Delphi technique with a seven-degree spectrum has been used to screen the initial indicators and select the effective final components. Finally, the final model of auditors’ professional ethics with emphasis on ethical climate is presented using structural-interpretive modelling method. Furthermore, in quantitative part of the research we used descriptive-survey method. The general model of the mixed approach of the present study is shown in figure 1.

4.1 Validity and reliability of the measurement model

In this study, to measure the validity and reliability, we applied the theory of Goba and Lincoln, which considers trustworthiness in qualitative research as a criterion to replace validity and reliability and includes four smaller concepts of credibility, transitivity, verifiability and dependability have been used. Moreover, in order to calculate the reliability by the method of internal thematic agreement between the two coders, another person who had a doctorate in accounting and specialty in this field was asked to participate as a research partner. The results showed that the reliability percentage of the two coders was more than 60%; therefore, the reliability of the scale was approved.

In experts’ questionnaire, there were no needs to test the reliability considering that all the elements were in pair wise comparisons with each other and they were considered together. Furthermore, the researcher has not been able to have a specific orientation in the design of the questionnaire.

5 Research Findings

5.1 Identify the indicators of auditors' professional ethics behaviour model with emphasis on ethical climate

In order to develop a model for auditors' professional ethics with emphasis on ethical climate, semi-structured specialized interviews with certified public accountants were conducted. The results of the interviews were analysed through theme analysis method. For this purpose, the content of the interviews was read and reviewed several times. The data were then broken down into semantic units in the form of sentences and paragraphs related to the main concept. Semantic units were reviewed multiple times and then the appropriate codes of each semantic unit were written and finally the codes were classified based on semantic similarity. The analysis process was repeated as each interview was completed. The interviews continued until the theoretical saturation was reached. The criterion for achieving theoretical saturation was to achieve repetition in the extracted codes. In the open coding stage, 648 codes were identified, which were reduced to 51 indicators due to some considerations and they were classified into basic, organizing and comprehensive theme formats according to Table 2.

5.2 Fuzzy Delphi technique

A questionnaire of constructs influencing the professional ethics of auditors with emphasis on the ethical climate resulting from the analysis of empirical background as well as interviews with experts with 5 comprehensive themes, 13 organizing themes and 51 basic themes was designed. In order to approve or remove constructs and applying them into the model, fuzzy Delphi technique has been applied. For analyzing the importance of indicators, expert opinions were used. However, expert people use their mental competencies and abilities for performing comparisons, but we should consider the fact that the traditional process of quantification of people's views does have not the probability of the reflection of human thinking style completely. In other words, using fuzzy collections, have higher compatibility with linguistic and ambiguous human explanations and therefore, it is better to use fuzzy collections (using fuzzy numbers) for long-term procrastination and decision making in the real world [36]. In this study, for fuzzy analysis of expert view, triangle fuzzy numbers are used. Expert visions about the importance of every index with a 7-degree fuzzy spectrum are collected.

Table 1: 7-degree fuzzy spectrum for valuating indexes

Phase number scale	Phase amount	Linguistic variable
(0, 0, 0.1)	1̄	Completely unimportant
(0, 0.1, 0.3)	2̄	Very unimportant
(0.1, 0.3, 0.5)	3̄	Unimportant
(0.3, 0.5, 0.75)	4̄	Average
(0.5, 0.75, 0.9)	5̄	Important
(0.75, 0.9, 1)	6̄	Very important
(0.9, 1, 1)	7̄	Completely important

The next step is to consolidate the views of experts. Various methods have been proposed to aggregate the views of n respondents. In fact, these aggregation methods are experimental methods that have been proposed by various researchers. For example, a conventional method for aggregating a set of triangular fuzzy numbers is the minimum l , the geometric mean m , and the maximum u .

$$F_{AGR} = (\min l, \prod m, \max u) \tag{5.1}$$

$$F_{AGR} = (\min l, \left\{ \frac{\sum m}{n} \right\}, \max u) \tag{5.2}$$

$$F_{AVE} = \left(\left\{ \frac{\sum l}{n} \right\}, \left\{ \frac{\sum m}{n} \right\}, \left\{ \frac{\sum u}{n} \right\} \right) \tag{5.3}$$

Each triangular fuzzy number from the collection of expert views for the J^{th} index is viewed as bellow:

$$\tau_j = (L_j, M_j, U_j)$$

$$L_j = \min(X_{ij})$$

$$M_j = \sqrt[n]{\prod_{i=1}^n X_{ij}}$$

$$U_j = \max(X_{ij})$$

Index i refers to an expert. So that; X_{ij} : The value of i^{th} expert evaluation of the j^{th} criterion, The minimum value of the evaluations for the j^{th} criterion, M_j : The geometric mean of the expert evaluation from the performance of the j^{th} criterion, U_j : The maximum value of the evaluations for the j^{th} criterion [10, 39, 40, 43].

In this study, we have used the fuzzy mean method.

5.3 De-fuzzy of amounts

Generally, the sum of the mean of triangular and trapezoidal fuzzy numbers can be summarized by a definite value which is the best-related mean. This operation is called de-fuzzy. There are various methods for de-fuzzy. In this study, the surface center method is used for de-fuzzy as follows:

$$DF_{ij} = \frac{[(u_{ij} - l_{ij}) + (m_{ij} - l_{ij})]}{3} + l_{ij} \tag{5.4}$$

The results of the first round of fuzzy Delphi technique are illustrated in Table 2. According to this table, one construct was removed from a total of 51 structures due to the agreement coefficient being smaller than 0.7. In this regard, it can be said that according to the experts, this construct does not have a significant impact on the professional ethics of auditors.

Table 2: The results of the first stage of fuzzy Delphi

Comprehensive theme	Organising theme	Basic theme	Lower bound	Probable value	Upper bound	Fuzzy average	Crisp value	Round1 results
Cultural climate	Ethical climate	Instrumental climate	0.715	0.870	0.955	(0.715,0.87,0.955)	0.847	acceptation
		Supportive climate	0.675	0.855	0.970	(0.675,0.855,0.97)	0.833	acceptation
		Legal climate	0.655	0.825	0.920	(0.655,0.825,0.92)	0.800	acceptation
		Professional climate	0.815	0.945	0.990	(0.815,0.945,0.99)	0.917	acceptation
		Independent climate	0.795	0.920	0.975	(0.795,0.92,0.975)	0.897	acceptation

According to the eliminated construct, the second round questionnaire was re-designed and provided to the experts in order to finalize the constructs affecting the professional ethics of auditors with emphasis on ethical climate. The results of the second round of fuzzy Delphi technique indicate that due to the agreement coefficient being greater than 0.7, all constructs of the second round were approved and the ultimate structures that enter the interpretive structural model are: Ethical climate (EC), Organizational Structure (OS), Personal Characteristics (PC), Economic Situation (ES), Professional Commitments (PC), Evaluation and Monitoring (EM), Skills and Potentials (SP), Policy and Policy-Making (PM), Recruitment and Retention (RR), Management and Leadership (ML), Job Ethics (JE), Social Culture (SC) and Ethical Ideology (EI).

5.4 Structural-conceptual modelling

5.4.1 Forming structural self-interaction matrix

Following the identification of the final constructs influencing auditors; ethical behaviour, with emphasis on the ethical climate, structural-interpretive modelling is applied to design the model. For this purpose, a questionnaire was first designed; which its overall structure is illustrated in Table 2. In this questionnaire, 13 constructs were placed in rows and columns of a matrix, in which the values of the cells were determined by 10 experts using the symbols listed in Table 3. Finally, in order to aggregate the opinions of experts, the mode index has been applied in such a way that among the four possible relationships between the indicators, the relationship that has the highest frequency according to experts (in Table 4) would be applied to the final structural self-interaction matrix.

Industrial climate	Auditors' professional commitments	Dumping at work and ignoring the basics of commentary	0.815	0.945	0.990	(0.815,0.945,0.99)	0.917	acceptation	
		accountability	0.720	0.885	0.970	(0.72,0.885,0.97)	0.858	acceptation	
		Having a business-like perspective of the auditing job	0.670	0.855	0.950	(0.67,0.855,0.95)	0.825	acceptation	
		Creating a culture of warning and informing	0.735	0.875	0.940	(0.735,0.875,0.94)	0.850	acceptation	
		The growth of a conservative culture	0.695	0.845	0.940	(0.695,0.845,0.94)	0.827	acceptation	
		Auditors' work conscience	0.400	0.565	0.700	(0.4,0.565,0.7)	0.555	rejected	
Organisational climate	Organisational structure	The growth of the culture of negative competition among members	0.595	0.755	0.865	(0.595,0.755,0.865)	0.738	acceptation	
		Existence of role conflict in organizational structure	0.655	0.845	0.950	(0.655,0.845,0.95)	0.817	acceptation	
		Selection of the auditor based on relationships	0.625	0.795	0.895	(0.625,0.795,0.895)	0.772	acceptation	
		Lack of transparency in the structure of the organization	0.615	0.775	0.890	(0.615,0.775,0.89)	0.760	acceptation	
		Legal loopholes and the increased chance of pressure and abuse	0.680	0.860	0.960	(0.68,0.86,0.96)	0.833	acceptation	
		debility of social capital in the organization	0.665	0.850	0.960	(0.665,0.85,0.96)	0.825	acceptation	
		Formation of nominal assemblies	0.725	0.890	0.960	(0.725,0.89,0.96)	0.858	acceptation	
	Management and leadership	Institutionalizing moral values	0.765	0.915	0.970	(0.765,0.915,0.97)	0.883	acceptation	
		Inclusion of ethical values in the accounting education system	0.565	0.790	0.920	(0.565,0.79,0.92)	0.758	acceptation	
		Existence of ethical sensitivity in management	0.770	0.905	0.965	(0.77,0.905,0.965)	0.880	acceptation	
		Improving auditors' compliance with ethical standards	0.710	0.880	0.960	(0.71,0.88,0.96)	0.850	acceptation	
		Insufficient attention to both commitment and expertise in auditors' recruitment	0.745	0.900	0.980	(0.745,0.9,0.98)	0.875	acceptation	
	Recruitment and retention	Lack of attention to the criteria of moral-emotional intelligence	0.565	0.725	0.840	(0.565,0.725,0.84)	0.710	acceptation	
		Inefficiency of ethics committees	0.675	0.825	0.915	(0.675,0.825,0.915)	0.805	acceptation	
		Lack of updated bylaw for ethical selection	0.770	0.915	0.990	(0.77,0.915,0.99)	0.892	acceptation	
	Job ethics	Lack of training courses of professional ethics which fit to the work requirements	0.680	0.860	0.960	(0.68,0.86,0.96)	0.833	acceptation	
		Lack of familiarity with measurement and evaluation methods	0.595	0.755	0.865	(0.595,0.755,0.865)	0.738	acceptation	
		Insufficient familiarity with the executive procedures of the organization	0.695	0.870	0.960	(0.695,0.87,0.96)	0.842	acceptation	
	Evaluation and monitoring	Putting more emphasis on quantity instead of quality in evaluations	0.720	0.885	0.970	(0.72,0.885,0.97)	0.858	acceptation	
		Lack of proper punishment and feedback on unethical behaviour	0.745	0.890	0.955	(0.745,0.89,0.955)	0.863	acceptation	
	Extra-organisational	Economic condition	Unfavourable economic conditions in the society (government-centred economy)	0.720	0.885	0.970	(0.72,0.885,0.97)	0.858	acceptation
			Auditors' subsistence problems	0.760	0.910	0.980	(0.76,0.91,0.98)	0.883	acceptation
			The auditor's economic dependence on the employer	0.745	0.880	0.950	(0.745,0.88,0.95)	0.858	acceptation
			The auditors' wage	0.545	0.725	0.845	(0.545,0.725,0.845)	0.705	acceptation

5.4.2 Formation Reachability matrix

The transformation of the structural self-interaction matrix into a double-value matrix (zeros and ones) the initial achievement matrix has been obtained; this transformation is shown in Table 5.

In order to adapt the initial achievement matrix, the final achievement matrix is formed by including transitivity in the relationships of the variables; Thus, if (I, J) are related and (J, K) are related as well, then (I, K) are also related to each other [6, 35]. The transitivity of conceptual relationships between variables is a basic assumption in interpretive structural modelling. At this stage, all secondary relationships between variables are examined and the final achievement matrix is obtained according to Table 6.

	Social culture	Real privatization of the capital market	0.680	0.860	0.960	(0.68,0.86,0.96)	0.833	acceptation	
		Decline in moral status and proficiency the value and importance of specialty in society	0.680	0.860	0.960	(0.68,0.86,0.96)	0.833	acceptation	
		Ignoring the significance of ethics in canons and traditions	0.665	0.850	0.960	(0.665,0.85,0.96)	0.825	acceptation	
		Lack of social necessity of demanding for auditing	0.760	0.910	0.980	(0.76,0.91,0.98)	0.883	acceptation	
	Policy-making	Dominance of nepotism in the system	0.775	0.920	0.980	(0.775,0.92,0.98)	0.892	acceptation	
		Conflict of some policies with accepted values and moral principles	0.645	0.795	0.890	(0.645,0.795,0.89)	0.777	acceptation	
		Unjust policies	0.750	0.905	0.970	(0.75,0.905,0.97)	0.875	acceptation	
		The lack of the application of auditors' knowledge and experience	0.695	0.870	0.960	(0.695,0.87,0.96)	0.842	acceptation	
	Personal factors	Personal characteristics	Religious orientations and moral beliefs	0.670	0.855	0.950	(0.67,0.855,0.95)	0.825	acceptation
			Personal utilitarianism (Machiavellianism)	0.685	0.845	0.920	(0.685,0.845,0.92)	0.817	acceptation
Far-seeing			0.700	0.860	0.955	(0.7,0.86,0.955)	0.838	acceptation	
Ethical sensitivity			0.755	0.905	0.990	(0.755,0.905,0.99)	0.883	acceptation	
Skills and potentials		Being responsible	0.720	0.885	0.970	(0.72,0.885,0.97)	0.858	acceptation	
		The ability of effective communication	0.690	0.865	0.970	(0.69,0.865,0.97)	0.842	acceptation	
Ethical Ideology		Idealism	0.775	0.920	0.980	(0.775,0.92,0.98)	0.892	acceptation	
		Relativism	0.785	0.925	0.990	(0.785,0.925,0.99)	0.900	acceptation	

Table 3: Symbols used to express the relationship between variables

Symbols	V	A	X	O
relationships	i influences j	j influences i	Mutual relationship	No relationship

Table 4: Structural self-interaction matrix (SSIM)

SSIM	EA	OS	PC	ES	PC	EM	SP	PM	RR	ML	JE	SC	EI
EA		V	V	V	V	V	V	V	V	V	V	V	V
OS			V	A	O	V	V	V	O	X	V	A	A
PC				A	V	O	X	A	X	A	V	O	A
ES					V	V	O	V	V	V	V	X	V
PC						A	A	A	A	A	X	A	A
EM							V	X	V	A	O	A	A
SP								A	X	A	V	A	A
PM									V	A	V	O	A
RR										A	V	A	A
ML											V	A	A
JE												A	A
SC													V
EI													

Table 5: Conversion of conceptual relationships to numbers

Symbol	converting conceptual symbols to quantitative numbers
V	The value for the cell related to this pair is 1 in the achievement matrix and 0 in its symmetric cell
A	The value for the cell related to this pair is 0 in the achievement matrix and 1 in its symmetric cell
X	The value for the cell related to this pair is 1 in the achievement matrix and 1 in its symmetric cell
O	The value for the cell related to this pair is 0 in the achievement matrix and 0 in its symmetric cell

5.4.3 Investigating the relationships and levelling dimensions and indicators

To investigate the relationships and for levelling the criteria, for each criterion a set of outputs and a set of inputs must be extracted from the received matrix.

The outputs include the criterion itself and the criteria that are affected by it. The inputs include the criterion

Table 6: Final access matrix of behaviour variables for auditors' professional ethics

TRM	EA	OS	PC	ES	PC	EM	SP	PM	RR	ML	JE	SC	EI
EA	1	1	1	1	1	1	1	1	1	1	1	1	1
OS	0	1	1	0	1*	1	1	1	1*	1	1	0	0
PC	0	0	1	0	1	0	1	0	1	0	1	0	0
ES	0	1	1	1	1	1	1*	1	1	1	1	1	1
PC	0	0	0	0	1	0	0	0	0	0	1	0	0
EM	0	0	1*	0	1	1	1	1	1	0	1*	0	0
SP	0	0	1	0	1	0	1	0	1	0	1	0	0
PM	0	0	1	0	1	1	1	1	1	0	1	0	0
RR	0	0	1	0	1	0	1	0	1	0	1	0	0
ML	0	1	1	0	1	1	1	1	1	1	1	0	0
JE	0	0	0	0	1	0	0	0	0	0	1	0	0
SC	0	1	1*	1	1	1	1	1*	1	1	1	1	1
EI	0	1	1	0	1	1	1	1	1	1	1	0	1

Table 7: Inputs and outputs for levelling

variables	Output: to impact	Input: to be impacted	Shared components
EA	EA, OS, PC, ES, PC, EM, SP, PM, RR, ML, JE, SC, EI	EA	EA
OS	OS, PC, PC, EM, SP, PM, RR, ML, JE	EA, OS, ES, ML, SC, EI	OS, ML
PC	PC, PC, SP, RR, JE	EA, OS, PC, ES, EM, SP, PM, RR, ML, SC, EI	PC, SP, RR
ES	OS, PC, ES, PC, EM, SP, PM, RR, ML, JE, SC, EI	EA, ES, SC	ES, SC
PC	PC, JE	EA, OS, PC, ES, PC, EM, SP, PM, RR, ML, JE, SC, EI	PC, JE
EM	PC, PC, EM, SP, PM, RR, JE	EA, OS, ES, EM, PM, ML, SC, EI	EM, PM
SP	PC, PC, SP, RR, JE	EA, OS, PC, ES, EM, SP, PM, RR, ML, SC, EI	PC, SP, RR
PM	PC, PC, EM, SP, PM, RR, JE	EA, OS, ES, EM, PM, ML, SC, EI	EM, PM
RR	PC, PC, SP, RR, JE	EA, OS, PC, ES, EM, SP, PM, RR, ML, SC, EI	PC, SP, RR
ML	OS, PC, PC, EM, SP, PM, RR, ML, JE	EA, OS, ES, ML, SC, EI	OS, ML
JE	PC, JE	EA, OS, PC, ES, PC, EM, SP, PM, RR, ML, JE, SC, EI	PC, JE
SC	OS, PC, ES, PC, EM, SP, PM, RR, ML, JE, SC, EI	EA, ES, SC	ES, SC
EI	OS, PC, PC, EM, SP, PM, RR, ML, JE, EI	EA, ES, SC, EI	EI

itself and the criteria that affect them. Then the bilateral relations between the criteria are determined.

After determining the access and prerequisite sets, the intersection of the two sets is calculated. The first variable for which the intersection of the two sets is equal to the achievement set (outputs) will be considered as the first level. Therefore, the first level elements will have the most impact on the model. After determining the level, the criterion whose level is determined will be removed from the set and set of inputs and outputs will form again and the level of the next variable will be obtained [4].

The variables of auditors' professional commitments and auditors' job ethics are first level.

The variables of personal characteristics, skills and potentials and recruitment and retention are in the second level.

Monitoring and evaluation and Policy and policy-making variables are in the third level.

Management and leadership as well as organizational structure variables are in the fourth level.

The ethical ideology variable is in the fifth level.

The variables of social culture and economic conditions are in the sixth level.

Finally, ethical climate is the seventh level and it is also the most influential variable of the model. The final model of the levels of the identified variables is shown in figure 2.

In this figure, only the significant relations between the elements of each level and the elements of the lower level as well as the significant internal relations of the elements at each level are depicted.

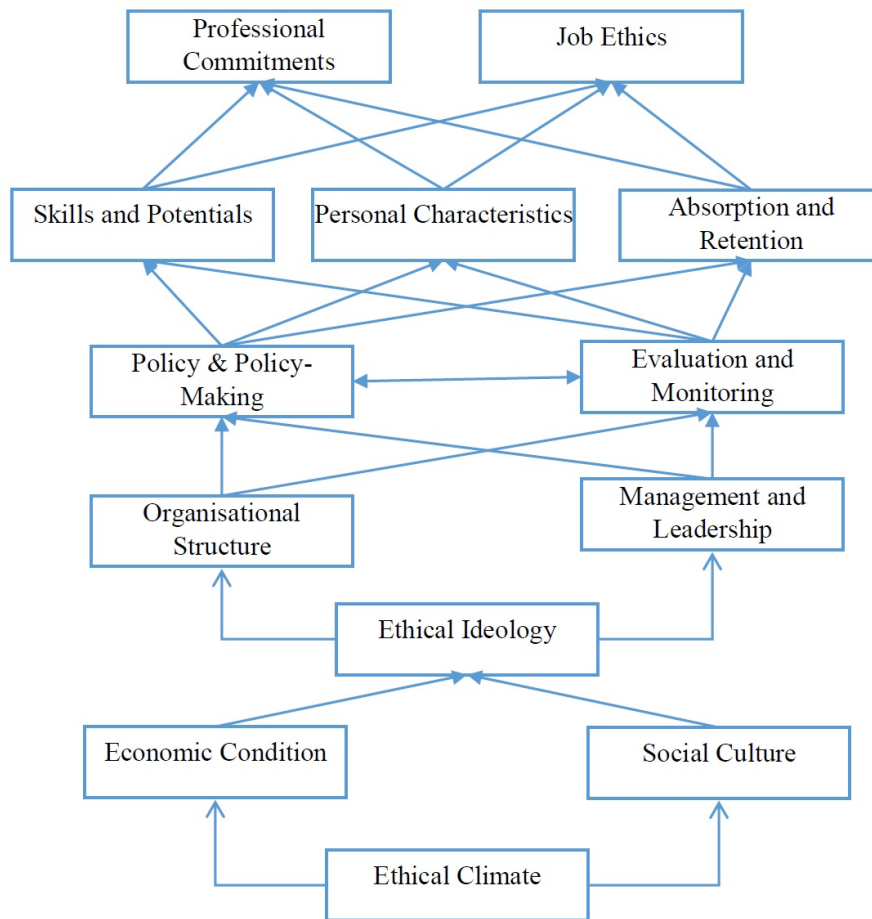


Figure 2: the model of auditors' professional ethics behaviour with emphasis on ethical climate

5.4.4 Infiltration-Dependency Analysis (MICMAC diagram)

At this stage, using the MICMAC technique, the type of constructs is determined according to their impact on other constructs and the impact of other constructs on them. After determining the influence power and dependency of the constructs, all of which affected auditors' professional ethics, they were classified in four groups. The first group includes autonomous variables that have weak influence and dependency (these variables were somewhat separated from other variables and had small correlation). The second group includes variables that have low influence power but high dependency. The third group includes the variables that have high influence power and low dependence. And finally, the fourth group includes the linking variables that have high influence power and high dependency. According to the figure 3, none of the constructs were classified in the autonomous group, which means that the relationship between the constructs which affect auditors' professional ethics is appropriate and strong.

According to this table and diagram of dependency-influence power, the variables of ethical climate, social culture, economic conditions and ethical ideology are in the range of independent variables. The variables of professional commitment and job ethics are considered as dependent variables; thus, the other variables are linking variables.

Table 8: Infiltration power and the level of dependency of auditors' professional ethics behaviour with emphasis on ethical climate

The variables related to audit's professional ethics	The level of dependency	Influence power	level
Ethical Climate (EC)	1	13	7
Organisational Structure (OS)	6	9	4
Personal Characteristics (PC)	11	5	2
Economic Condition (EC)	3	12	6
Professional Commitment (PC)	13	2	1
Evaluation and Monitoring (EM)	8	7	3
Skills and Potentials (SP)	11	5	2
Policy and Policy-Making (PM)	8	7	3
Absorption and Retention (AR)	11	5	2
Management and Leadership (ML)	6	9	4
Job Ethics (WE)	13	2	1
Social Culture (SC)	3	12	6
Ethical Ideology (EI)	4	10	5

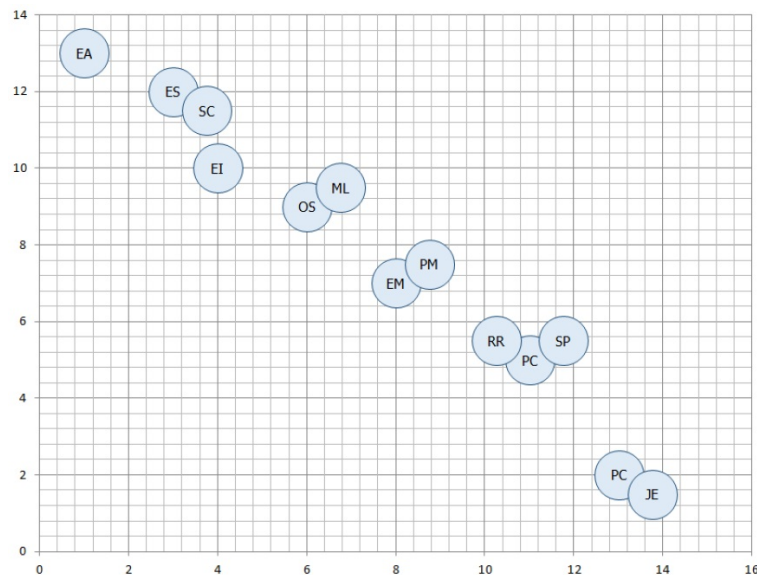


Figure 3: the diagram of infiltration power and the level of dependence (MICMAC output)

6 Discussion and Conclusion

The analysis of the results of our study indicates that the most fundamental construct affecting the professional ethics of auditors is the ethical climate. Ethical climate refers to the collective perception of the organisation's members toward the models of ethical principles and their purpose. These perceptions affect the ethical decisions and individual behaviours of the members. This construct is related to the indicator of cultural climate which could be defined as the values and behavioural codes in a place. This indicator explains inter-organisational communications, employees' conditions and the improvement in their behaviour. These results are consistent with the findings of [13, 15, 19, 27]. Moreover, in an instrumental climate, this is the expectation that pose the greatest potential for unethical acts; While supportive, independent, legal and professional climate reduce unethical behaviours [21, 38].

Following the construct of ethical climate, economic conditions and social culture are in the second level of the constructs affecting auditors' professional ethics. According to these constructs, main factors influencing auditors' professional ethics are the constructs of the extra-organizational indicator. According to the findings of this study, economic factors such as auditors' subsistence problems, auditor's economic dependence on the employer and unfavourable economy and capital market condition affect auditors' professional ethics which is in line with the findings of Bagley et al [7] as well as Ahmadi, Ahangari and Salehnia [3].

Generating a social demand for auditing by auditing organizations as well as the governments strengthens the social

culture, which affects auditors' professional ethics. If the internal and external capabilities of an auditing institution are can matched, it not only improves the institution's capability but it also increases the level of social trust among shareholders and financial decision-makers. The findings of Abdul Halim, Jaafar and Janudin [1]. as well as Safari Graili and Valian [37] are also consistent with the results of our study. Other criteria were listed in the next ranks.

Organizational structure as well as the management and leadership were at the fourth level of the research model which indicates the effectiveness of the ethical climate in preventing the role conflict and lack of transparency in the structure of the organization; this is in line with studies conducted by Mehrani et al [25] as well as Mousavikashi and Mohsenikabir [28]. Management and leadership enhances auditors' performance, beyond their formal duties, and leads to the formation of ethical values and professional behaviours through institutionalizing ethical values, paying simultaneous attention to the commitment and expertise of auditors and increasing their ethical sensitivity; This is consistent with the findings of Derakhshanmehr, Jabbarzadeh and Bahrisales [11] as well as Hajipour and Barzegar [18] based which professional ethics moderates the relationship between ethical leadership and the performance of independent auditors.

According to the dimension of monitoring and evaluation, the existence of punishment, feedback, evaluation methods and an environment in which auditors consider themselves accountable for the consequences of their professional judgments are environmental factors affecting auditors' ethics which are in line with the findings of Nikbakht et al [30] as well as Khoshtinat and Bostanian [23]. Unjust policies and the confliction between policies and ethical values in the field of policy-making raise uncertainty amongst auditors in dealing with ethical problems. In this regard, making comprehensive, clear and reassuring policies on how auditors deal with ethical issues will motivate employees in the face of unethical issues; Ismail and Yuhanis [21] have also addressed this issue in their study.

Our findings show the significance of personality, skills and ethical ideology dimensions, as personal factors, in auditors' professional ethics, which is in compliance with the findings of Mousavikashi and Mohsenikabir [28] and Ismail and Yuhanis [21]. The inefficiency of ethics committees and the lack of updated ethical selection bylaws will challenge the recruitment and retention of ethical auditors in the organization. This is consistent with the findings of Mohsenzadeh and Mahfouzi [26] and Haeridistia and Fadjaranie [17] based on which ethical climate reduces the tendency to leave the job and emotional intelligence influences the ethical judgment. Of course, in this regard, holding training courses can influence the professional ethics of auditors; Eskandari and Irandust [14] as well as Yablouei, Mostahfezian and Meshkati [44] have approved the impact of training and job ethics on ethics and organizational performance respectively.

Auditors with higher professional commitment show more ethical behaviour than auditors with lower professional commitment; Therefore, it is important that auditing organizations take the necessary measures to increase auditors' commitment to the rules of the profession, through increasing their accountability, removing constraints such as ignoring the basics of commentary in order to break the rate in the workplace and eliminating the business-like approach in auditing profession. This is consistent with the results of the studies conducted by Awaluddin et al [5] and Brouard et al. [9].

According to the MICMAC analysis, the constructs of auditors' professional commitment and auditors' job ethics are the most influential compared to other constructs and are considered effective and dependent constructs systematically. In other words, many factors are involved in creating and improving these constructs, and these variables themselves cannot cause much impact and change in the auditors' professional ethics. Furthermore, the constructs of ethical climate, economic conditions, social culture and ethical ideology are among the key constructs for maintaining and promoting the professional ethics of auditors. These constructs have high power of influence and low dependency and are located in the range of independent variables; this is consistent with the findings of Ahmadi, Ahangari and Salehinia [3] as well as Olayiwola [31] and other variables have similar influence and dependency; thus, they are considered as linking variables. Consequently, any change in these constructs will change other constructs as well.

7 Result

Despite the increasing interest and attention to ethical decisions and behaviours, many questions have remained unanswered about the main causes of unethical behaviours. Considering individuals' different understanding of organisational climate, we have studied factors affecting auditors' professional ethics. The significance of this research is that it has been the first time that the pillars of professional ethics have been thoroughly studied in Iran with emphasis on the ethical climate. Our findings approve the significant role of ethical climate on auditors' professional ethics. In the absence of an ethical climate, auditors in practice would not be able to realize the orientation and priorities while focusing on personal and organizational interests, which tends to create an unethical climate. Therefore, it will be

difficult to promote ethical behaviours that serve the interests of all stakeholders. The results of this study showed that auditors' understanding of the ethical climate will have positive results on the collective behaviour and service performance; Thus, generating an ethical climate will allow auditors to prioritize citizenship behaviours over personal and organizational interests, and return social trust to the auditing profession.

Due to the effectiveness of the ethical climate, we suggest that auditing organizations pay closer attention to this issue. If the auditors consider their organization ethical, the tendency to understand the organization as well as the job satisfaction will improve and there will also be less intention to leave the job. Furthermore, we recommend auditing organizations, the Society of Certified Official Accountants of Iran, Tehran Stock Exchange and regulatory bodies to focus on ethical climate, economic condition, social culture development, policy-making and developing comprehensive and clear guidelines in order to improve auditors' professional ethics. They should also focus on the way auditors deal with ethical issues they encounter while performing their duties. Additionally, we recommend auditing organisations to offer protection to the auditors so that they feel safe detecting and reporting corruption or fraud.

We hope that the findings of this study and its proposed solutions for future research would add to the practical knowledge that enables auditing organizations to enhance auditors' performance by creating an ethical climate and taking into account other identified factors. Furthermore, the understanding of the relationship between ethical climate and ethical behaviour will lead to a better understanding of ethics in the workplace and more retention of the workforce.

In this study, like any other study, we have been facing some limitations. For example, to measure and collect the data we used a questionnaire, in which mental backgrounds such as feelings, emotions and attitudes affect the data.

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