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Presenting internal auditors' coping strategy model with an interpretative structural approach

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Abstract

This research was carried out to present the internal auditors' coping strategy model with an interpretative structural approach. From the point of view of the result of its implementation, the upcoming research is applied research, to implement exploratory research and descriptive research using a survey method. The information required for the research to provide the model was collected using semi-structured interviews from 11 experts in the subject field of the research, i.e. people in the accounting and auditing profession who had more than 15 years of work experience in the field of internal audit. In this research, a coping strategy model for internal auditors was designed using Interpretive Structural Modeling (ISM). The results of the interpretive structural analysis (ISM) by the exploratory model showed that brain software coping strategies include financial intelligence, accounting and auditing, clear recognition of roles and responsibilities and the development of internal auditors' skills with training, hardware coping strategies including continuous communication between managers and employees, reporting Physical errors and defects and continuous inspections, software coping strategies including systematic review and analysis of reports, performance evaluation processes and upgrading internal audit technologies lead to the reduction of conflicts of internal auditors including personal conflict, conflict of duties, conflict of job position and conflict of interests.

Keywords: coping strategy, coping strategy of internal auditors, internal auditors
2020 MSC: 91G30

1 Introduction

In recent years, the scope of internal audit activities has expanded far more, and as a result, the role of internal audit has become more prominent [18]. Internal control cannot be demonstrated only through actions that are functions of internal control. In fact, internal audit is a multi-purpose tool of senior management, which is not only for control, but also for management functions. Internal auditors play an important role in organizations. They act as part of an effective risk management mechanism by identifying risks, providing assurance about processes and controls, and advising management on control and efficiency improvements. Most importantly, internal auditors

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assist the audit committee and board of directors in monitoring and managing audit, control, and operational risks. In fact, the importance of business risk increases in internal audit programs and is placed as the main priority of internal audit [21, 25]. The International Standard on Auditing (ISA) states that the internal audit function can be used by independent auditors to obtain additional audit evidence. In addition, internal auditors can act to provide direct assistance when conducting an audit under the supervision of an independent auditor [14]. By improving their performance, internal auditors can provide conditions that are justified as one of the main components of corporate management [9].

First of all, internal auditors perform much broader tasks than independent auditors, including: investigation of financial and operational issues, fraud in risk assessment, etc. [1, 5]. Therefore, internal auditors must perform their duties in an efficient and effective manner. Second, internal auditors usually have more access to the employer's accounting data, which can be used to quickly detect irregularities and fraud. Finally, although existing regulations for independent auditors do not encourage or discourage analysis, independent auditors are likely to focus on processes that expressly require compliance with legal requirements. On the contrary, the specific regulations of internal auditors are less strict than the specific regulations of independent auditors, which lead to more flexibility in exploring the audit [10].

On the one hand, management wants to use internal audit as a means of improving efficiency and operations, but does not want to argue with the board if there are problems with the financial statements. On the other hand, the board is concerned with overall corporate governance, risk management and fraud prevention and wants to rely on internal audit as a means of ensuring effective internal controls and reporting problems to the board. In addition, standard setters outside the firm may review and critique internal audit work according to specific laws under their jurisdiction. Finally, the independent auditor is required to review the quality of the internal audit as part of their required audit procedures. Over the years, internal auditing has found itself at the intersection of these competing components and must effectively deal with conflicting pressures [4]. Therefore, role conflict is often the result of different expectations and motivations of different stakeholders. Therefore, internal auditors may succumb to pressure not to report issues. Meanwhile, due to the responsibility of maintaining independence and objectivity, internal auditors must use coping strategies against conflicts [7]. Therefore, the coping strategy of internal auditors can be seen as a reason to deal with internal audit conflicts.

Internal auditors do not always withstand conflict pressures and make poor counterfactual judgments that lead to unreported issues, thereby exposing the firm to uncompensated risks [23]. In this regard, passive strategies of internalization and avoidance often lead to ineffective (inappropriate) reporting decisions, while internal auditors who use active coping strategies often stand strong in the face of conflict and properly report issues. However, internal auditors faced with similar issues in similar types of pressure/conflict environments choose different coping strategies. Such differences in the choice of coping strategy may be caused by situational, organizational or individual personality characteristics [4].

The severity of the matter (or level of significance) is defined using the Institute of Internal Auditors (IIA) Professional Practice Framework guidance on risks. Issue severity is the level of risk that the issue identified by the internal auditor could lead to harm or loss to the organization, be it financial, credit, operational or legal loss. Matter severity is specific to the specific situation and finding identified by the internal auditor and is a key component of the IIA Professional Practice Guide as internal auditors are expected to make risk assessments and risk-based judgments. Therefore, the present study examines the effect of the severity of the issue on the counter-choice of the internal auditor. Confrontation theory suggests that the importance of the seriousness of the matter (due to potential harmful damages or losses that may occur if the matter is not reported) may motivate the internal auditor to take a stand. Therefore, internal auditors are expected to use more negotiation strategies in situations of issue intensity. On the other hand, at low issue severity, coping theory suggests that the internal auditor may be less inclined to use the efforts required in negotiation coping strategies. Internal auditors are expected to choose to internalize or avoid coping strategies in low-intensity situations.

The third issue that plays a role in the direction of the coping strategy is personality traits. In fact, this study examines how the personality trait of implicit belief affects the internal auditor's choice of various coping strategies. Implicit belief theory shows that people with increasing belief (dynamic) show more flexibility and are more likely to be challenged when faced with conflict. These people are likely to stand their ground to educate and change others' opinions and implement corrective measures. On the other hand, people with existential (fixed) beliefs tend to avoid challenges and conflicts. According to this theory, internal auditors with increasing belief are expected to choose negotiation coping strategies, while internal auditors with entity belief are expected to be more likely to choose avoidance or internalizing strategies. In addition, examining the relationship between the mentioned factors and their interactive effects on the coping strategy can be an issue that has been neglected in past studies. The Institute of

Internal Auditors' guidance states that internal auditors should focus on risk and therefore determine the "severity of the matter" as a priority in the internal auditor's judgment. Expert guidance expects that the internal auditor should not allow other influences, such as organizational support or lack thereof, to impair the auditor's willingness to report matters. Therefore, internal auditors are expected to choose negotiation coping strategies when the severity of the issue is high regardless of the level of organizational support. However, when the severity of the issue is low, it is expected that internal auditors are more likely to choose avoidance and internalizing coping strategies. It is also expected that the internal auditor's implicit belief moderates the effects of issue severity and organizational support on the choice of coping strategies. Implicit belief theory shows that people with incremental belief are more likely to persist in their tasks regardless of conflict, challenge or situation. In previous psychological studies, it has been found that individuals with a heightened belief persevere in discouraging situations and strive to solve a problem or address an issue [19, 26].

The issue of internal auditors' coping strategy means the measures and strategies that internal auditors adopt against financial conflicts and behavioural defects in organizations. These strategies include establishing internal control systems, performance monitoring and evaluation, training and education of internal auditors, and communication with external auditors. The purpose of these strategies is to prevent financial conflicts and behavioural defects in organizations and increase transparency and public trust in organizations. Based on all the issues raised, the purpose of this study is to gather empirical evidence about the effects of issue severity, perceived organizational support, and implicit beliefs on internal auditor conflict coping strategies. Thus, when issues are identified and role conflict occurs, whether the internal auditor's implicit belief in abilities, the effects of organizational support and issue severity on the internal auditor's coping strategy increase or decrease. Based on this, the basic problem of the present research is the answer to this question, what is the model of internal auditors' coping strategy? Internal auditors' coping strategy is one of the critical issues in the field of internal audit. Considering that internal auditors face many issues and conflicts while performing their duties, it is very necessary to provide them with a coping strategy model. The importance of this issue can be examined from two aspects; By providing a coping strategy model, internal auditors achieve a precise working framework that can improve their performance. Despite the conflicts in organizations, internal auditors must adhere to the rules and regulations. Providing a coping strategy model helps them to deal with conflicts by complying with laws and regulations and adhering to the rights and interests of the organization and other people. In general, providing internal auditors' coping strategy model improves their performance and adherence to laws and regulations, as well as reducing risks and conflicts in the organization.

2 Theoretical foundations and research background

Internal auditors are responsible for auditing financial, operational and compliance processes in a company. They have to deal with competitive pressures and conflicts daily [6, 7]. Previous research on internal auditing and professional studies show that internal auditors play a unique role in organizations. Their unique role has inherent conflicts with many stakeholders. Internal auditors often face pressure from management not to report findings or to reduce the level of risk in the findings. Roussy's [22] studies show that internal auditors react differently to conflicting management pressures. These studies show that internal auditors choose different coping strategies in similar situations. Choosing a coping strategy was associated with compromising the internal auditor's judgment and succumbing to management pressure not to report findings. However, the antecedent factors affecting the internal auditor's confrontational decision should be further investigated. The literature suggests that an internal auditor should always maintain objectivity and report findings while incorporating a risk assessment (i.e., the severity of the matter) into the findings. Organizational support theory suggests that the level of support may encourage or inhibit good behaviours and judgments. The theory of implicit beliefs shows that people react differently to challenges and conflicts depending on their beliefs.

Coping strategies focus on managing conflicting values. When multiple values are important, auditors face a difficult task. The simplest answer is selection bias, that is, systematically favouring one value over others. This is intellectually and practically the simplest answer because it immediately removes all the layers of complexity of the conflict. However, assuming that the values are recognized as important by the relevant stakeholders, this is a strategy for dealing with conflict. However, the new hybrid values may be vague and incomprehensible, merely hiding and denying the underlying conflicts rather than resolving them. As such, none of these coping strategies are completely reliable. However, internal auditors should choose one of these optimal coping strategies in the face of value complexity [24].

Hafadh and H.H. Flayyih [13] in a research entitled the effect of electronic internal audit based on information technology governance in reducing audit risk investigated the effect of electronic internal audit based on the framework of control objectives for information and related technologies. In this research, it was stated that organizations should

implement an up-to-date accounting information system that can meet their audit needs. To achieve the objectives of the research, a questionnaire was prepared and distributed among a sample of 120 employees. These employees were financial managers, internal auditors, and employees who were in the information security department of the Baghdad Public Electricity Distribution Company, owned by the Iraqi federal government. Statistical software for social sciences (SPSS) was used to analyze data and hypotheses. This study concluded that electronic internal audit has a significant effect on the performance of information technology framework and related technologies in reducing the risk of electronic audits in public electricity distribution companies.

Asnawi [2] investigated the quality of internal audit recommendations based on the influence of role conflict, role ambiguity and work stress. These relationships were tested based on a survey of 96 internal auditors serving in several public universities in Indonesia. Structural equation analysis was used to test the hypotheses. The results showed that role conflict has a positive effect on the quality of audit recommendations, while role ambiguity has a negative effect. Role conflict and role ambiguity have a positive and significant effect on work stress. Other test results show that internal auditor's work stress does not affect the quality of audit recommendations. The practical implication of this research is that to reduce ambiguity in performing audit duties and improve the quality of audit recommendations, it is necessary to consider the appropriate working environment, especially the availability and adequacy of information required by internal auditors in performing supervisory duties. Role conflict due to the presence of more than one task can cause work stress, although it does not interfere with the quality of audit recommendations. Therefore, it is necessary to pay attention to the allocation of time for work that is not done at the same time, so that the workload causes work stress.

Cadotte [4], to examine the conflicts and deal with the internal auditor's role, investigated the relationships between the severity of the issue, perceived organizational support, implicit beliefs and coping strategies of internal auditors. This study states that the psychological theory of implicit personality beliefs about abilities aligns with coping strategies in role theory. An individual's implicit beliefs about abilities may influence the strategies they choose to deal with conflict, given different levels of organizational support and the severity of the issue. This theory suggests that people who have increasing beliefs (dynamic beliefs) about abilities are more likely to deal with conflict than people who have fixed beliefs. This theory suggests that individuals with increased trust are more likely to engage in negotiation with management to gain agreement on issues and implement corrective actions. Finally, the results showed that issue severity is a key predictor of internal auditor coping strategies. However, different levels of implicit beliefs and organizational support did not significantly affect coping strategies.

Barzegar Abbaspour et al. [3] show that the internal organizational factors investigated in this research affected the possibility of fraud in the financial statements of companies admitted to the Tehran Stock Exchange. Also, it can be seen that the extra-organizational factors considered by the research have a significant effect on the possibility of fraud in the financial statements of companies admitted to the Tehran Stock Exchange.

Ebrahimi et al. [11] designed a model of the causes that reinforce the organizational silence of internal auditors. In this regard, with the participation of 16 research specialists and using metacomposite and Delphi analysis, the components and indicators that strengthen the organizational silence of internal auditors in the face of conflict of duties were identified. Based on comprehensive interpretive/structural analysis with the participation of 20 internal auditors, the results of the research showed that among the 19 primary indicators in meta-composite analysis, 15 indicators reached the theoretical limit during the two stages of Delphi analysis, and based on interpretive/structural analysis, it was determined that two The internal audit profession's perceptual fit index was determined by the auditor as an index of individual factors and role conflict between standards by defining the internal auditor's job position as an index of structural factors as the most influential causes of internal auditors' silence.

Khavari et al. [16] presented the model of causal factors, strategies and consequences of auditors' stress management. In this regard, they should state that the complex and changing theoretical principles and the need to use the most accurate standards create heavy pressure on the auditors. In this research, using the meta-composite approach, 187 kinds of research published in domestic and foreign journals from 2010 to 2022 and 2002 to 2022 have been reviewed and 98 types of research have been selected. Then, by analyzing the content of these researches, the relevant codes were extracted and the importance and priority of each was determined using Shannon's entropy technique. Based on the approach of this research, 3 categories, 48 concepts and 95 codes were extracted. professional doubt, role ambiguity and conflict of interests in the causal factors sector; Conscious mind, job matching techniques with the employee and perceived organizational support in the strategy department; Improvement of the quality of reports, unbiased judgment and reduction of audit malpractice obtained the highest coefficient of importance in the results section.

3 Auditor industry expertise and profit quality

3.1 Optional accrual items model

In this research, discretionary accruals are estimated using the cross-sectional version of the Jones model [15], because the results of the research of Nikumram et al. [20] profit was made, it showed that the subsequent revisions of the Jones model have an acceptable ability to discover profit management.

$$TACC_{it}/A_{it-1} = \alpha_1(1/A_{it-1}) + \alpha_2(\Delta REV_t/A_{it-1}) + \alpha_3(PPE_{it}/A_{it-1}) + \alpha_{it} \tag{3.1}$$

where, $TACC$ of all commitment items; ΔREV incomes in year t minus incomes in year $t-1$; Gross PPE of property, machinery and equipment; A: total assets; e: residual; Indices i and t indicate the company and year, and the remaining e indicates DAC for company i in year t. Then, the multivariate model predicts the absolute level of optional commitment items based on the industry-specific variable and control variables.

$$Abs(DAC_{it}) = \alpha_0 + \alpha_1 \times SP_{it} + \alpha_2 \times LTA_{it} + \alpha_3 \times CFO_{it} + \alpha_4 \times LEV_{it} + \alpha_5 \times Abs(TACC)_{it} + \varepsilon_{it} \tag{3.2}$$

in which: SP: industry specialization standard; LTA: the logarithm of total assets and is used as the size of the company; CFO: cash flows from operations according to assets; LEV: ratio of long-term liabilities to total assets; $(TACC)Abs$: the absolute value of commitment items and indices i and t represent the company and year respectively.

3.1.1 Profit response coefficient model

To investigate the effect of expertise on ERC, regression (OLS ordinary least squares) is used.

$$CAR_{it} = \lambda_0 + \lambda_1 UE_{it} + \lambda_2 UE_{it} \times NEG_{it} + \lambda_3 UE_{it} \times SP_{it} + \lambda_4 UE_{it} \times MB_{it} + \lambda_5 UE_{it} \times LTA_{it} + \varepsilon_{it} \tag{3.3}$$

in which: CAR: cumulative abnormal return around seven trading days; UE: unexpected profit; NEG: is an indicator variable that takes a value if the unexpected profits are negative; SP: industry specialization variable; MB: ratio of market value to book value; LTA: logarithm of total assets; Indexes I and t indicate the company and year (respectively).

3.1.2 Audit quality and added value of the company

The added value in the company :(V) is used to measure the added value using two criteria: market value added (MVA) and economic value added (EVA), which are measured as follows. Market value added (MVA) is calculated from the difference between the book value and the market value of shares, which is equal to the average book value of equity minus the average market value of equity. Economic value added (EVA) is an internal performance evaluation measure and represents economic profit. And it is calculated as follows

$$EVA = (ROIC - WACC) \times IC\ ROIC \tag{3.4}$$

It is equal to the return on capital used in an investment. This number is the distribution of operating profit after tax deduction.

(NOPAT) is calculated on the capital employed in an investment (IC)

IC is equal to the invested amount which consists of the following items:

IC = net property, machinery and equipment + other assets + intangible assets + current assets current liabilities other than financial facilities = long-term liabilities + received financial facilities + other interest-bearing liabilities + legal capital + reserves + accumulated profit + service redemption reserve Staff

NOPAT is also equal to the operating profit after tax deduction in the formula for calculating economic added value, adjustments must be made on these two figures to eliminate the distortions caused by the application of accounting principles and bring the accounting profit closer to the economic profit, so the calculation of NOPAT and IC is adjusted. It is done as follows:

Capital equivalent items + amount of invested capital - Adjusted capital for research and development cost + Manpower education and training cost + Advertising and marketing cost - Long-term investment account balance = Capital equivalent items, reserve balance for depreciation of goods + reserve balance for doubtful debts Achieving + the balance of end of service benefits + NOPAT = EAT WACC is equal to the weighted average cost of capital used in the investment, which was observed by examining the financial statements of Tehran Stock Exchange companies that these companies have used the debt of ordinary shares, accumulated profits and reserves for financing.

3.1.3 Audit quality

Auditor expertise is used to calculate expertise from the market share approach so that an audit firm with the highest percentage of market share in the industry is considered as an expert [8].

The size of the auditing company is one if the company is examined by the auditing organization, otherwise it is zero. The percentage of non-executive board members is the ratio of the number of non-executive board members to the total number of board members. Ownership concentration, the ratio of the share of major shareholders above %5 to total shareholders [12].

3.1.4 Control variables

Dividend payout ratio is the ratio of cash dividend payout to profit per share. Return is the ratio of the total income of investors during a certain period to the consumption investment in that period, the operating cash flow resulting from the cash flows that are equalized through the total assets in the first period [17]. The ratio of book value to market value, the division of book value to market value, return on assets, the ratio of past unanticipated profits to total assets. Financial leverage is the ratio of the total book value of companies' debt to total assets

4 Research questions

Based on the problem raised in this research, the questions that can be asked are:

1. What are the coping strategies of internal auditors?
2. What are the effective factors of coping strategies in the improvement of internal auditors?
3. What is the leveling of the coping strategies of internal auditors?

5 Research methodology

From the point of view of the result of its implementation, the upcoming research is applied research, to implement exploratory research and descriptive research using a survey method. From the point of view of the implementation process (type of data), it is mixed research, and from the point of view of the logic of implementation (type of reasoning), it is research with an inductive approach, and from the perspective of the time dimension, it is cross-sectional research. The current research is based on the purpose of descriptive exploratory research because it aims to provide a model of internal auditors' coping strategy. The current research is an interpretive structural mixed analysis. This part is also presented in the form of two descriptive and analytical approaches. The descriptive part is dedicated to the description of the statistical sample in terms of variables and different components, and the analytical part deals with presenting the model and the relationship between the factors of the model. Considering that library study methods and field methods such as interviews were used in this research, it can be said that the current research is a survey-cross-sectional research based on the data collection method.

The present research is exploratory in nature; Below is an issue that has not been addressed in this way and at this level before. For this purpose, a mixed approach was used, the purpose of which was to combine qualitative and quantitative research methods to achieve a suitable method in order to achieve the research goals.

In exploratory research projects, the researcher tries to find out about an uncertain situation. For this purpose, qualitative data is collected first. Carrying out this step leads the researcher to describe countless aspects of the phenomenon under investigation. By using this initial identification, the desired components for designing the model are provided to the researcher. Next, the researcher designs the research model using Interpretive Structural Modeling (ISM). In the next step, based on the initial model obtained, research hypotheses are formulated and a questionnaire is created by the researcher based on the items obtained from the initial interviews with experts. Then this questionnaire is distributed to the statistical population and after collecting them, it is analyzed using Structural Equation Modeling (SEM).

The statistical population of this research was to design a model based on a qualitative approach, a group of experts with doctorate and master's degrees in accounting and auditing, who have more than 10 years of work experience in the field of internal audit, were selected and were interviewed in depth. This selection and conducting interviews continued until theoretical saturation was reached and then it was stopped. Purposeful sampling method with snowball technique was used. In this way, the first expert was selected based on the preliminary investigations and asking the opinion of the respected supervisor, and after completing the interview with the first person, another expert or experts

(experts with doctorate and master's degree in accounting profession) were requested. and introduce auditors who have more than 10 years of work experience in the field of internal audit) who can be experts in the field of internal audit and contribute to the richness of the research model. This process continued until reaching the sufficiency of the data to answer the research questions. During the 16th interview, theoretical saturation was achieved, and to ensure the adequacy of the data, the interviews continued until the 16th sample.

6 Research findings

In this research, after conducting the interview using the CVR index, the relative coefficient of the content of each factor was determined. For this purpose, a questionnaire was provided to the experts and they were asked to rate each of the factors and dimensions based on the 3 spectrum of "necessary; It is useful but not necessary; It is not necessary to examine it. Since the number of experts is 16, if the CVR value of each factor is higher than 0.42, the content validity of that factor is confirmed. The results of applying the content relative coefficient (CVR) are shown in Table 1.

Table 1: CVR value of each component (selection of experts)

Row	Agents	CVR value	Result	Dimensions	CVR value	Result
1	Financial intelligence, accounting and auditing	1	confirmation	Coping Brainware strategies	1	confirmation
2	Clearly identify roles and responsibilities	1	confirmation			
3	Developing the skills of internal auditors through training	1	confirmation			
4	Continuous communication between managers and employees	1	confirmation	Hardware countermeasures	1	confirmation
5	Physical report of errors and defects	1	confirmation			
6	Continuous inspections	1	confirmation			
7	Systematic review and analysis of reports	1	confirmation	Coping Software strategies	1	confirmation
8	Performance appraisal processes	1	confirmation			
9	Improvement of internal audit technologies	1	confirmation			
10	Personal conflict	1	confirmation	Reducing the conflicts of internal auditors	1	confirmation
11	Conflict of duties	1	confirmation			
12	Job position conflict	1	confirmation			
13	Conflict of interest	1	confirmation			

The results showed that all 13 factors and all 4 dimensions are accepted and the experts have complete consensus on them for designing the model.

6.1 Interpretive structural modeling (ISM)

6.1.1 First step: Identifying the factors related to the problem

As described in the previous section, 13 factors were categorized into 4 dimensions. To verify these factors, the content relative coefficient (CVR index) was used. All 13 factors were approved by experts in the form of 4 dimensions. Therefore, these 13 factors are used to provide a model of internal auditors' coping strategy against conflicts.

6.1.2 Second step: forming the structural self-interaction matrix

After determining the factors, the ISM questionnaire was designed and the experts examined these factors in pairs and determined the relationships between them using the following symbols:

V: If factor i affects factor j;

A: If factor j affects factor i;

X: mutual influence of factors i and j;

O: if there is no relationship between factors i and j.

The results of the questionnaires about the investigated factors are given in the form of Table 3.

Table 2: Identified factors for model design

Row	Agents
1	Financial intelligence, accounting and auditing
2	Clearly identify roles and responsibilities
3	Developing the skills of internal auditors through training
4	Continuous communication between managers and employees
5	Physical report of errors and defects
6	Continuous inspections
7	Systematic review and analysis of reports
8	Performance appraisal processes
9	Improvement of internal audit technologies
10	Personal conflict
11	Conflict of duties
12	Job position conflict
13	Conflict of interest

Table 3: The results obtained from the questionnaires

Row	Agents	1	2	3	4	5	6	7	8	9	10	11	12	13
1	Financial intelligence, accounting and auditing		X	X	V	V	V	V	V	V	V	V	V	V
2	Clearly identify roles and responsibilities			X	V	V	V	V	V	V	V	V	V	V
3	Developing the skills of internal auditors through training				V	V	V	V	V	V	V	V	V	V
4	Continuous communication between managers and employees					X	X	V	V	V	V	V	V	V
5	Physical report of errors and defects						X	V	V	V	V	V	V	V
6	Continuous inspections							V	V	V	V	V	V	V
7	Systematic review and analysis of reports								X	X	V	V	V	V
8	Performance appraisal processes									X	V	V	V	V
9	Improvement of internal audit technologies										V	V	V	V
10	Personal conflict											X	X	X
11	Conflict of duties												X	X
12	Job position conflict													X
13	Conflict of interest													

6.1.3 The third step: formation of the initial access matrix

The primary access matrix is obtained by transforming the structural self-interaction matrix into a two-valued matrix (zero and one). In order to replace the numbers zero and one instead of the four symbols of the tables, the following rules are used to extract the primary access matrix:

1. If the entry (i, j) in the structural self-interaction matrix is symbol V, then in the initial access matrix (i, j) the number will be one and the entry (j, i) will be zero.
2. If the entry (i, j) in the structural self-interaction matrix is symbol A, then in the initial access matrix (i, j) the number will be zero and the entry (j, i) will be the number one.
3. If the entry (i, j) in the structural self-interaction matrix is the symbol X, then in the initial access matrix (i, j) the number will be one and the entry (j, i) will be the number one.
4. If the entry (i, j) in the structural self-interaction matrix is symbol O, then in the primary access matrix (i, j) the number will be zero and the entry (j, i) will be zero.

Table 4 shows the structural auto-interaction matrix.

6.1.4 Step 4: Create the final access matrix

After the primary access matrix is obtained, the secondary relations of the control agents are checked. The secondary relationship is such that if factor i leads to factor j and also factor j leads to factor k, then factor i also leads to factor k. If this condition was not established in the initial access matrix, the modified matrix and the missing relationships should be replaced. This process is called adapting the initial access matrix. In this step, all secondary relationships between factors were investigated, but no secondary relationship was discovered. Therefore, the final access matrix is the same as the initial access matrix. In this matrix, the power of penetration and the degree of dependence of each factor are also shown. The influence of a factor is obtained from the sum of the number of factors affected by it and the factor itself, and the degree of dependence of a factor is also obtained from the sum of the factors that are affected by it and the factor itself.

Table 4: Primary access matrix

Row	Agents	1	2	3	4	5	6	7	8	9	10	11	12	13
1	Financial intelligence, accounting and auditing	1	1	1	1	1	1	1	1	1	1	1	1	1
2	Clearly identify roles and responsibilities	1	1	1	1	1	1	1	1	1	1	1	1	1
3	Developing the skills of internal auditors through training	1	1	1	1	1	1	1	1	1	1	1	1	1
4	Continuous communication between managers and employees	0	0	0	1	1	1	1	1	1	1	1	1	1
5	Physical report of errors and defects	0	0	0	1	1	1	1	1	1	1	1	1	1
6	Continuous inspections	0	0	0	1	1	1	1	1	1	1	1	1	1
7	Systematic review and analysis of reports	0	0	0	0	0	0	1	1	1	1	1	1	1
8	Performance appraisal processes	0	0	0	0	0	0	1	1	1	1	1	1	1
9	Improvement of internal audit technologies	0	0	0	0	0	0	1	1	1	1	1	1	1
10	Personal conflict	0	0	0	0	0	0	0	0	0	1	1	1	1
11	Conflict of duties	0	0	0	0	0	0	0	0	0	1	1	1	1
12	Job position conflict	0	0	0	0	0	0	0	0	0	1	1	1	1
13	Conflict of interest	0	0	0	0	0	0	0	0	0	1	1	1	1

Table 5: The final access matrix

Row	Agents	1	2	3	4	5	6	7	8	9	10	11	12	13	Penetration power
1	Financial intelligence, accounting and auditing	1	1	1	1	1	1	1	1	1	1	1	1	1	13
2	Clearly identify roles and responsibilities	1	1	1	1	1	1	1	1	1	1	1	1	1	13
3	Developing the skills of internal auditors through training	1	1	1	1	1	1	1	1	1	1	1	1	1	13
4	Continuous communication between managers and employees	0	0	0	1	1	1	1	1	1	1	1	1	1	10
5	Physical report of errors and defects	0	0	0	1	1	1	1	1	1	1	1	1	1	10
6	Continuous inspections	0	0	0	1	1	1	1	1	1	1	1	1	1	10
7	Systematic review and analysis of reports	0	0	0	0	0	0	1	1	1	1	1	1	1	7
8	Performance appraisal processes	0	0	0	0	0	0	1	1	1	1	1	1	1	7
9	Improvement of internal audit technologies	0	0	0	0	0	0	1	1	1	1	1	1	1	7
10	Personal conflict	0	0	0	0	0	0	0	0	0	1	1	1	1	4
11	Conflict of duties	0	0	0	0	0	0	0	0	0	1	1	1	1	4
12	Job position conflict	0	0	0	0	0	0	0	0	0	1	1	1	1	4
13	Conflict of interest	0	0	0	0	0	0	0	0	0	1	1	1	1	4
	The degree of dependence	3	3	3	6	6	6	9	9	9	13	13	13	13	–

6.1.5 Fifth: determination of relationships and leveling of factors

In this step, by using the access matrix, after determining the input and output sets, the share of these sets is obtained for each of the factors.

1. The output set of an agent includes the agent itself and the agents that affect them, which can be identified by the "1"s in the corresponding line.
2. The input set of a factor includes that factor itself and the factors that are influenced by them, which can be identified by the "1"s in the corresponding column.

After determining the input and output sets, their share is determined for each of the agents. Factors whose output and common sets are completely similar are placed at the highest level of the hierarchy of the interpretive structural model. In order to find the components of the next level of the system, the components of the highest level are removed in the mathematical calculations of the relevant table, and the operations related to determining the components of the next level are performed like the method of determining the components of the highest level. This operation is repeated until the constituent components of all levels of the system are determined.

As shown in Table 6, the output set and the common set of factors 10, 11, 12 and 13 are completely identical; Therefore, these factors are placed in the first level and are removed from the above table to continue leveling.

As shown in Table 7, the output set and the common set of factors 7, 8 and 9 are completely identical; Therefore, these factors are placed in the second level and are removed from the above table to continue leveling.

As shown in Table 8, the output set and the common set of factors 4, 5 and 6 are completely identical; Therefore, these factors are placed in the third level and are removed from the above table to continue the leveling.

Table 6: The first iteration of stratification

Row	Agents	Output set	Input set	Common collection	level
1	Financial intelligence, accounting and auditing	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13	1, 2, 3	1, 2, 3	
2	Clearly identify roles and responsibilities	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13	1, 2, 3	1, 2, 3	
3	Developing the skills of internal auditors through training	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13	1, 2, 3	1, 2, 3	
4	Continuous communication between managers and employees	4, 5, 6, 7, 8, 9, 10, 11, 12, 13	1, 2, 3, 4, 5, 6	4, 5, 6	
5	Physical report of errors and defects	4, 5, 6, 7, 8, 9, 10, 11, 12, 13	1, 2, 3, 4, 5, 6	4, 5, 6	
6	Continuous inspections	4, 5, 6, 7, 8, 9, 10, 11, 12, 13	1, 2, 3, 4, 5, 6	4, 5, 6	
7	Systematic review and analysis of reports	7, 8, 9, 10, 11, 12, 13	1, 2, 3, 4, 5, 6, 7, 8, 9	7, 8, 9	
8	Performance appraisal processes	7, 8, 9, 10, 11, 12, 13	1, 2, 3, 4, 5, 6, 7, 8, 9	7, 8, 9	
9	Improvement of internal audit technologies	7, 8, 9, 10, 11, 12, 13	1, 2, 3, 4, 5, 6, 7, 8, 9	7, 8, 9	
10	Personal conflict	10, 11, 12, 13	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13	10, 11, 12, 13	1
11	Conflict of duties	10, 11, 12, 13	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13	10, 11, 12, 13	1
12	Job position conflict	10, 11, 12, 13	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13	10, 11, 12, 13	1
13	Conflict of interest	10, 11, 12, 13	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13	10, 11, 12, 13	1

Table 7: leveling (repetition 2)

Row	Agents	Output set	Input set	Common collection	level
1	Financial intelligence, accounting and auditing	1, 2, 3, 4, 5, 6, 7, 8, 9	1, 2, 3	1, 2, 3	
2	Clearly identify roles and responsibilities	1, 2, 3, 4, 5, 6, 7, 8, 9	1, 2, 3	1, 2, 3	
3	Developing the skills of internal auditors through training	1, 2, 3, 4, 5, 6, 7, 8, 9	1, 2, 3	1, 2, 3	
4	Continuous communication between managers and employees	4, 5, 6, 7, 8, 9	1, 2, 3, 4, 5, 6	4, 5, 6	
5	Physical report of errors and defects	4, 5, 6, 7, 8, 9	1, 2, 3, 4, 5, 6	4, 5, 6	
6	Continuous inspections	4, 5, 6, 7, 8, 9	1, 2, 3, 4, 5, 6	4, 5, 6	
7	Systematic review and analysis of reports	7, 8, 9	1, 2, 3, 4, 5, 6, 7, 8, 9	7, 8, 9	2
8	Performance appraisal processes	7, 8, 9	1, 2, 3, 4, 5, 6, 7, 8, 9	7, 8, 9	2
9	Improvement of internal audit technologies	7, 8, 9	1, 2, 3, 4, 5, 6, 7, 8, 9	7, 8, 9	2

Table 8: leveling (repetition 3)

Row	Agents	Output set	Input set	Common collection	level
1	Financial intelligence, accounting and auditing	1, 2, 3, 4, 5, 6	1, 2, 3	1, 2, 3	
2	Clearly identify roles and responsibilities	1, 2, 3, 4, 5, 6	1, 2, 3	1, 2, 3	
3	Developing the skills of internal auditors through training	1, 2, 3, 4, 5, 6	1, 2, 3	1, 2, 3	
4	Continuous communication between managers and employees	4, 5, 6	1, 2, 3, 4, 5, 6	4, 5, 6	3
5	Physical report of errors and defects	4, 5, 6	1, 2, 3, 4, 5, 6	4, 5, 6	3
6	Continuous inspections	4, 5, 6	1, 2, 3, 4, 5, 6	4, 5, 6	3

Table 9: leveling (repetition 4)

Row	Agents	Output set	Input set	Common collection	level
1	Financial intelligence, accounting and auditing	1, 2, 3	1, 2, 3	1, 2, 3	4
2	Clearly identify roles and responsibilities	1, 2, 3	1, 2, 3	1, 2, 3	4
3	Developing the skills of internal auditors through training	1, 2, 3	1, 2, 3	1, 2, 3	4

As shown in Table 9, the output set and the common set of factors 1, 2 and 3 are completely identical; Therefore, these factors are placed in the fourth (last) level, and the leveling is finished.

6.1.6 The sixth step: drawing the final model

At this stage, according to the levels of factors and the final access matrix, a preliminary model is drawn, and by removing transferability in the preliminary model, the final model is obtained. Therefore, the final model of ISM, which is obtained from the effective factors of presenting the internal auditors' coping strategy model against conflicts, is drawn as Figure 1.

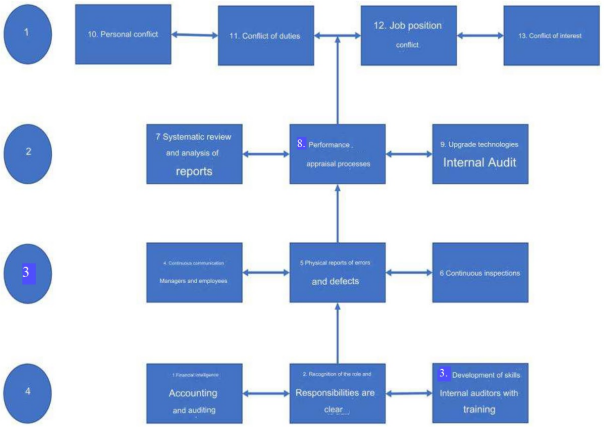

Figure 1: Basic model of ISM

As shown in Figure 1, 13 factors of the model are placed in four levels. Factors 10, 11, 12 and 13, which are on the first level of the ISM graph, are the most effective and dependent factors of the model. In the second level, factors 7, 8 and 9 are placed, which affect higher level factors and are affected by lower level factors. In the third level, factors 4, 5, and 6 are placed, which affect higher level factors and are affected by lower level factors. In the last level (fourth level), factors 1, 2 and 3 are placed, which are the most effective and influential factors of the model. According to the classification of factors, the final model of ISM is shown in Figure 2.

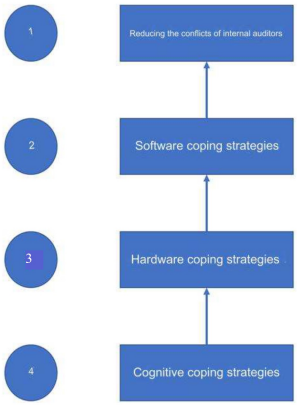

Figure 2: The final model of ISM

6.1.7 Seventh step: Analysis of penetration power and degree of dependence (MICMAC chart)

At this stage, factors are classified into four groups. The first group includes autonomous factors (area 1) that have weak influence and dependence. These factors are somewhat separate from other factors and have little correlation. The second group includes dependent factors (area 2) that have weak influence but high dependence. The third group is the linking factors (area 3). These factors have high influence and dependence. In fact, any action on these factors leads to the change of other factors. The fourth group is independent factors (area 4). These factors have high influence and low dependence. Factors that have a high influence are called key factors. It is clear that these factors are included in one of the two groups of independent or linked factors. By adding the entries of "1" in each row and column, the power of influence and the degree of dependence of the factors are obtained. Based on this, the influence-dependence power diagram is drawn.

Using the data obtained from the fourth step, the studied factors can be categorized based on the influence of each factor on other factors and the degree of dependence of each factor on other factors in the following four levels:

Autonomous factors: factors that have minimal dependence and influence on other factors.

Dependent factors: factors that are highly dependent on other factors.

Linked factors: factors that have a two-way relationship with other factors.

Independent factors (influence): factors that have significant influence on other factors.

To determine the coordinates of each factor in the MICMAC matrix, the power of penetration and the degree of dependence of that factor should be used. These values are obtained from the final access matrix. Table 10 shows the influence and degree of dependence of each factor.

Table 10: The power of influence and the degree of dependence of each of the factors

Row	Agents	The degree of dependence	Penetration power
1	Financial intelligence, accounting and auditing	3	13
2	Clearly identify roles and responsibilities	3	13
3	Developing the skills of internal auditors through training	3	13
4	Continuous communication between managers and employees	6	10
5	Physical report of errors and defects	6	10
6	Continuous inspections	6	10
7	Systematic review and analysis of reports	9	7
8	Performance appraisal processes	9	7
9	Improvement of internal audit technologies	9	7
10	Personal conflict	13	4
11	Conflict of duties	13	4
12	Job position conflict	13	4
13	Conflict of interest	13	4

Using the coordinates of the factors listed in Table 10, the MICMAC matrix is formed (Figure 3).

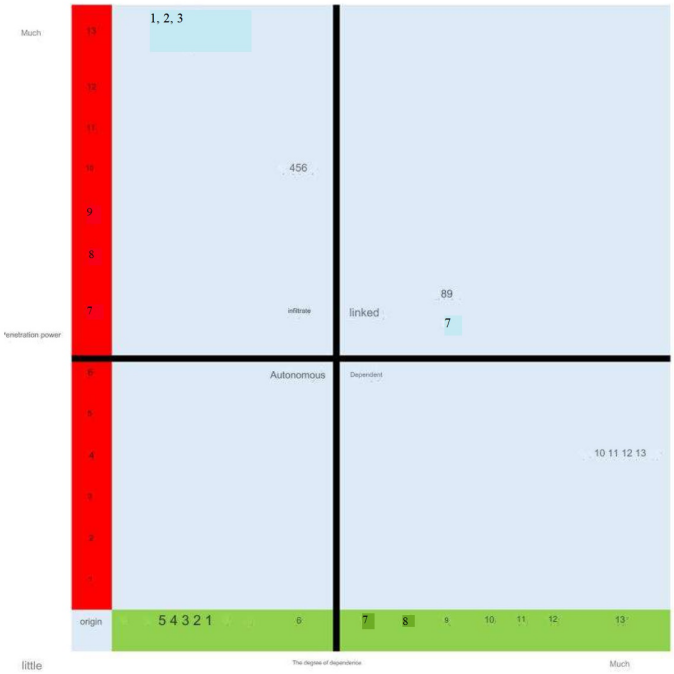

Figure 3: MICMAC matrix

As can be seen in the MICMAC matrix, factors 10, 11, 12 and 13 are located in the dependent area, which means that they have a low penetration power but a high degree of dependence compared to other factors. Factors 1, 2, 3, 4, 5, and 6 are in the influence area, which means they have high influence and low dependence on other factors. Factors 7, 8 and 9 are also located in the link area. These factors have relatively high influence and dependence.

These factors play a key role in the model; Because they establish a relationship between independent and dependent factors. Here, the process of interpretive structural modeling to provide a model of internal auditors' coping strategy against conflicts ends.

7 Conclusion

Based on interpretative structural modelling and based on the opinions of experts, Brainware coping strategies include financial intelligence, accounting and auditing, clearly identifying roles and responsibilities and developing the skills of internal auditors with training, hardware coping strategies including continuous communication between managers and employees, physical reporting of errors and Defects and continuous inspections, software coping strategies including systematic review and analysis of reports, performance evaluation processes and internal audit technologies improvement lead to the reduction of internal auditors conflicts including personal conflict, conflict of duties, conflict of job position and conflict of interests. As it is clear in the presented alcove, 13 constituent factors are placed in four levels. The factors of personal conflict, task conflict, job position conflict, and interest conflict, which are located at the first level of the ISM graph, are the most effective and dependent factors of the model. In the second level, the factors of systematic review and analysis of reports, performance evaluation processes and improvement of internal audit technologies are placed, which affect higher-level factors and are affected by lower-level factors. In the third level, the factors of continuous communication between managers and employees, physical reporting of errors and defects, and continuous inspections are placed, which affect higher-level factors and are affected by lower-level factors. At the last level (fourth level), the factors of financial intelligence, accounting and auditing, clear recognition of roles and responsibilities, and development of internal auditors' skills with training are placed, which are the most effective and influential factors of the model. Internal auditors are suggested to reduce internal audit conflicts by using financial intelligence and financial analysis techniques to identify suspicious patterns and trends in the organization's financial statements and to detect financial audit conflicts. Using accounting intelligence analysis and accounting techniques to identify roles and responsibilities, financial relationships and financial flows in the organization and identify accounting conflicts. Use audit intelligence analysis using audit techniques and techniques to identify weaknesses and conflicts in the internal audit process and provide improvement solutions to reduce audit conflicts. Internal auditors are suggested to reduce the interference and conflict of roles in the audit work by determining the role and responsibilities of each internal audit member in a clear and precise manner. It is suggested to internal auditors to help internal auditors develop the necessary skills to recognize and manage internal audit conflicts by providing appropriate training. It is suggested that the researchers provide a model of internal auditors' coping strategy against conflicts by using qualitative methods of grounded theory or theme analysis in future research. It is suggested to use AHP and fuzzy ANP methods in future research to identify and rank internal auditors' coping strategies against conflicts. It is suggested to use fuzzy DEMATEL techniques in future research to identify and rank internal auditors' coping strategies against conflicts.

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