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Interpretive Ranking of Inertia Characteristics in the Auditing Profession to Enhance the Auditors' Independence in Petrochemical Industry

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ABSTRACT

As a significant consequence of internal and external characteristics in auditors, independence plays a vital role in promoting professional judgment in auditing. This dimension of individual audit functions has always been considered one of the areas studied in this profession due to its integration with the perceptual and often intangible features of auditors' behavior. Therefore, this study, understanding the importance of independence functions in the auditing profession, seeks to identify the characteristics of inertia as a stimulus for independence in auditing in the petrochemical industry to act on its interpretive ranking. This research is a mixed method due to the nature of data collection. It first uses interviews to identify the characteristics of inertia in the auditing profession and then employs the checklists of the pair scale to determine the interpretive ranking. Accordingly, the grounded theory and the quantitative part are used in the qualitative part, and Delphi analysis and the interpretive ranking process are used. The statistical population in the qualitative section were 12 auditing professionals who, in terms of theoretical knowledge, had the necessary capabilities to develop the concept studied in this study. They were selected through theoretical sampling based on the snowball technique. The statistical population in the quantitative part

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were 19 auditors with work experience in the petrochemical industry and a level of technical and specialized knowledge; they were selected using homogeneous sampling. The research results in the qualitative part indicate the existence of 3 categories, 8 components, and 35 concept codes that have laid the inertial features in the auditing profession in the form of an 8-dimensional integrated model. On the other hand, the results in the quantitative part show that the percentage of influence of the locus of control feature is higher than other inertial features in the audit profession in the petrochemical industry, implying that the auditor's encirclement on individual control in success and failure can avoid a set of external factors such as chance and lead fate in audit functions. In other words, an auditor with the characteristics of an internal locus of control tries to use his/her ability to express independent behavior in professional comments and judgments, regardless of external reasons.

1. Introduction

Iran holds the largest combined oil and natural gas reserves in the world. Proximity and access to major energy demand centers make Iran a major player in global energy supply. However, the country's isolation and the absence of investments by international companies in its petrochemical industry have hindered development and led to a lack of understanding of Iran's potential capability. While the scale and low cost of production for Iranian hydrocarbon resources make the country promising for development, several political risks severely constrain the potential for Iran to further develop its petrochemical industry. These risks primarily relate to the return of sanctions by the United States due to the Trump administration's withdrawal from the Joint Comprehensive Plan of Action (JCPOA). With this introduction, it can be said that the most important function of balance in the petrochemical industry is to develop financial transparency by maintaining audit independence. Independence in auditing is an important part of the behavioral functions emphasized in the code of professional conduct that improves the level of critical functions in the auditing profession. As an individual characteristic, independence is part of a person's perceptual functions in the face of external stimuli that validates the auditor's comments on the owners' financial performance (Edward and West, 2022). Inertia as an approach in theories of organizational behavior (Valiyan et al., 2020) has become part of the knowledge of auditing behavior today because it helps strengthen independence in auditing and prevents the influence of owners or intermediaries (Rodgers, 1988). Inertia is the opposite of flexibility and means resistance to influence or change in the individual (Konig et al., 2012). Inertia in the behavior of independent auditors has been in line with Standard No. 1 of the Independence Standards Board (ISB) (1999) and the approvals related to maintaining independence in the conduct of the auditing profession. The independent auditor should try not to be influenced by emotional influence and job affiliation and prioritize the professional identity over the auditor–client identity (the identity that the auditor assumes independently of the client) and comment based on specialized procedures and auditing principles and standards. Because, according to the standard mentioned by the Independence Standards Board, independent auditors are required to submit a report on their relationship with the owners, including the provisions of the contracts, audit working hours and reciprocal commitments are mutually exclusive during the contract period (BenYoussef and Drira, 2020). On the other hand, the obligation to observe professional conduct has been enforced by the Securities and Exchange Commission (SEC) since (2000), according to which all owners were required to disclose non-auditing services information in order to have more significant control over the independence of the independent auditors' profession (Nikbakht et al., 2019). Accordingly, the importance of inertia in this profession can be considered a theoretical basis and ethical model because it will cause independent auditors, focusing on their behavioral and professional characteristics, to accept independence in the audit profession as a professional nature and have that commitment; in this way, the gap between expectations in the auditing profession is reduced. Reducing agency costs and information asymmetry also strengthen the reliability of auditors' comments and the decision-making power of shareholders and investors (Baker, 2006). Therefore, the consequence of inertia in the auditing behavior can be considered changing and accepting challenges based on skills, which not only

increases the dynamism of the auditor's professional performance in terms of independence but also can help increase the reputation and capability of the independent auditor in the audit market. In contrast, perhaps the lack of inertia in independent auditors can lead to the tolerance of owners or intermediaries, affecting independent auditors' independence (Gwilliam and Marnet, 2015). In fact, it is an abstract and invisible concept in auditing because while inverting its meaning in terms of conceptual nature, especially in the auditing profession vis-a-vis other behavioral sciences, it increases the level of esoteric independence versus the level of apparent independence, while most definitions in the auditing profession emphasize the two dimensions of esoteric and apparent independence (Meuwissen and Quick, 2019). Alleyne and Devonish (2006) considered real (esoteric) independence a "lack of mental inclination to perform audit operations" and apparent independence "avoiding circumstances that show the auditor in a conflict of obvious interests with the client". Thus, real (esoteric) independence with neutrality and apparent independence is typically associated with users' perceptions of a conflict of interest of the independent auditor in a given situation (Bartlett, 1993). According to the explanations provided, why this research is conducted can be examined from the following two perspectives.

First, it is the first study to examine the independent auditor's inertial behavior against client influence, and through combined analysis, seeks to provide an integrated perceptual model of the independent auditor's independent functions against client influence. Although this area is significant in terms of the appropriateness of the behavioral and functional functions of independent auditors in terms of independence, it is researched less from the perspective of the independent auditor. Moreover, doing this research and developing it in the auditing profession can increase the auditor's negotiation functions with clients based on professional identity and improve the audit quality in terms of following professional skepticism in the review of clients' financial statements. Looking at previous research confirms this claim: "Reviewing the Client's Influence over the Auditor" by Adams et al. (2021), "Investigating the Client's Close Relationship with the Auditor" by Liu et al. (2021), "Investigating the Impact of Client Influence Characteristics on the Independent Auditor" by Rusmanto (2017), and "Client Pressure on the Independent Auditor" by Ettredge et al. (2017). Although the issue of the independence of the independent auditor against the influence of the client is crucial, the development of the concept of inertia in audit behavior as a stimulus for the behavioral and functional independence of independent auditors against the influence of the client has not been considered against owners.

Second, the results of this study can help regulatory bodies such as policymakers in the audit profession to develop strategies and requirements to improve the level of knowledge of the characteristics of professional behavior against the influence of owners to strengthen the identity of the audit profession. Furthermore, it defines the interactions between the auditor and the client within the framework of the rules formulated for concluding the audit work contract. This study also helps independent auditors to be more independent in their audit negotiations, regardless of the client's reputation and market share, relying on inertial stimuli against the influence of owners and intermediaries, and by maintaining professional ethics, drawing a clear line between marketing in auditing and auditing judgment.

In this study, considering that there is no reliable theoretical basis for inertial characteristics in the auditing profession, an attempt is made to first determine the inertial characteristics in the auditing profession through the grounded theory.

Then, based on the interpretation of the interpretive ranking, it determines the most influential criterion for inertial characteristics in the auditing profession. Therefore, the purpose of this study is the interpretive ranking of inertial characteristics in the auditing profession to promote auditors' independence.

In the continuation of the research, the second part presents the literature review related to inertia in the auditing profession. In the third part, the research basis is discussed and argued from a methodological point of view. Then, the findings are presented in the fourth section; finally, in the last section of the article, the findings obtained from statistical analysis are theoretically argued.

2. Literature review

With the advancement of science and the complexity of the economic environment, the auditing profession, like other social areas, has undergone a kind of transformation because the form of interpersonal interactions and relationships in this profession has changed, and audit knowledge for its survival and dynamism has to balance the changes inevitably. Although accepting change in any situation can lead to

innovation and increased creativity in that area, the auditing profession can be an exception to this rule, at least in the area of individual performance, by maintaining its independence. Therefore, this property of immutability in behavior and stillness is inertia. The root of this term in physics refers to stillness and unwillingness to change, the continuation of which can lead to uniformity and stability in performance. The development of this concept was first stated by Smith et al. (2005) to improve organizational processes to identify environmental commitments and the speed at which an organization adapts to them, whose continued existence can lead to organizational harm.

In comparison, this behavioral term in the auditing profession can be considered the strength of the functions of the auditing profession. In developing the concept of inertia for human behavior, Zhen et al. (2021) show that individuals' inner tendency to resist change causes interactive problems to lead to reduced organizational productivity. While Al Abdullah and Al Ani (2021) use the same weakness of inertia in theories of organizational behavior, they consider it a factor in improving the judging functions of the auditors' profession. Therefore, applying the concept of inertia based on the standards defined in the auditing profession differs from its concept in the organization.

The auditor's behavior also means mental attitude independence in his interactive and communicative actions with the owners, and based on the inertia of the independent auditor can have a more stimulated independent perception of the influence of intermediaries and owners. Auditing financial statements will have more content value when the auditor maintains behavioral and functional independence based on inertia and establishes a clear boundary between their professional and social interactions with their professional functions and judgments. The classification of Ahmad (2012) describing inertia in the auditing profession distinguishes it from two perspectives: inertia in organizational independence and inertia in operational independence. Inertia in organizational independence equals independence of the auditing profession, and inertia in operational independence relates to the audit's inherent ability to be independent. In other words, inspired by Mautz and Sharaf's (1961) approach to inertia, Ahmed (2012) described independence at the end of a spectrum from thinking to external actions that can be understood in the three-dimensional auditing profession.

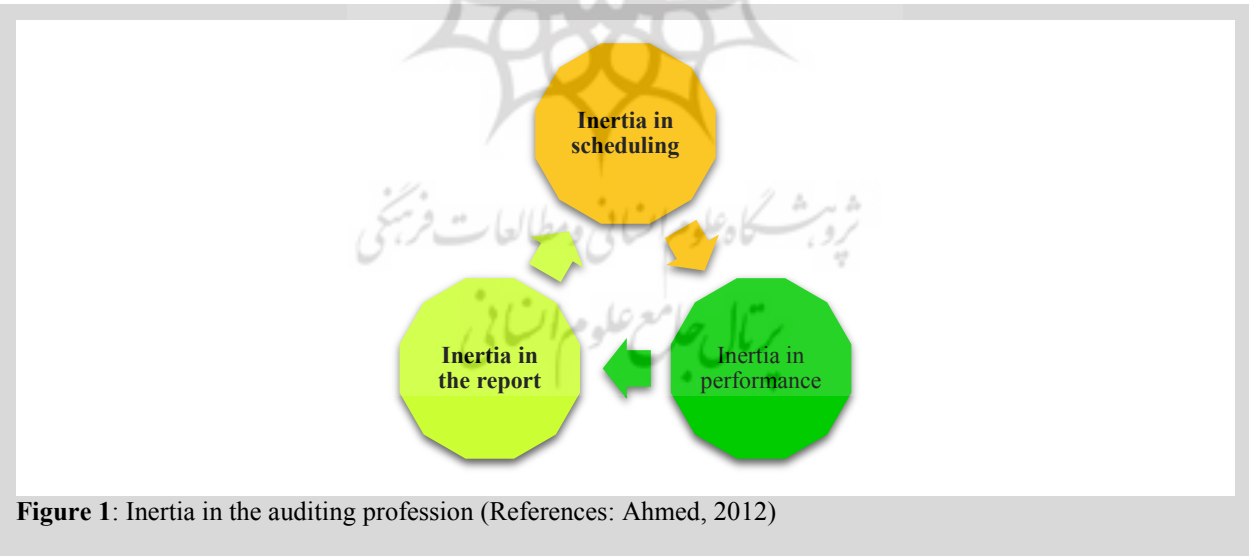

Figure 1: Inertia in the auditing profession (References: Ahmed, 2012)

According to Figure 1, in the first dimension, the independent auditor should have independence in planning, that is, to decide on the type and scope of audit procedures without the involvement of external factors and intermediaries of freedom of action. In the second dimension, the independent auditor must have independence in the audit, i.e., access to all authorized sources of information at the level of activities. The independent auditor should have the personal relationships and management policies required for the audit. Finally, in the third dimension, the auditor should report independently and away from the control or influence of others to present the result of reviewing the financial performance of the owners to the stakeholders. Formal auditor independence models assume economic rationality and generally ignore behavioral issues in

some active markets. According to paragraph "T13 of Iranian Auditing Standard No. 200", approved in 2013, independence in auditing is defined as part of the public interest according to the requirements of the code of professional conduct. It includes two dimensions of real and apparent independence. On the other hand, in the statement of the Institute of Chartered Accountants of England and Wales (2001) regarding the importance of the concepts of independence in the auditing profession, the following dimensions are considered a set of reasons to strengthen the judgment of the auditing profession.

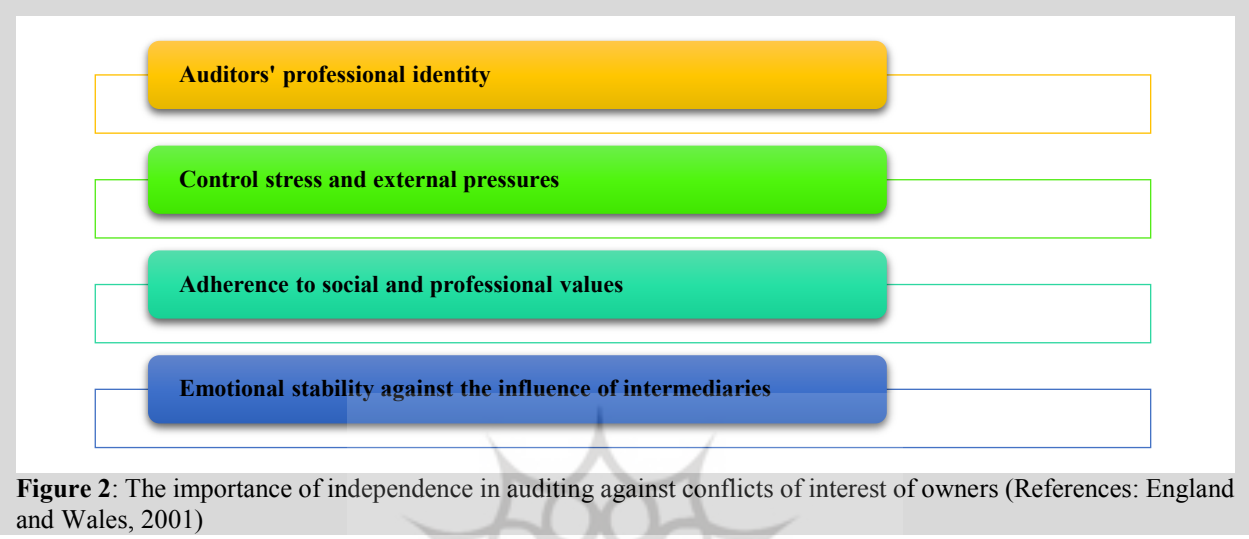

Figure 2: The importance of independence in auditing against conflicts of interest of owners (References: England and Wales, 2001)

These dimensions are considered a means to get rid of pressures and other disturbances in the auditing profession, which reduces the ability of auditors to make unbiased and biased decisions and causes auditors to make specialized comments based on their professional philosophy. On the other hand, Section 290 of the International Accountants' Code of Ethics (2007) Law on Mental and Physical Independence expresses the definition in Figure 3.

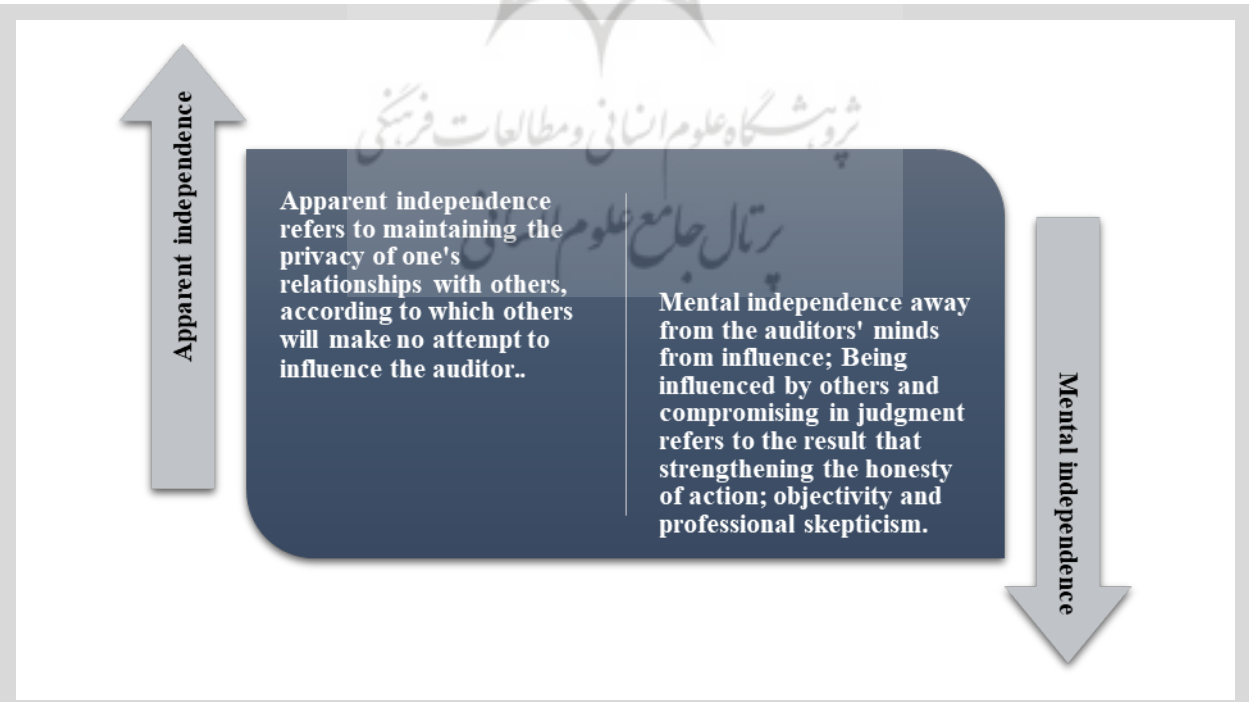

Figure 3: The difference between physical independence and mental independence (References: International Accountants' Code of Ethics, 2007)

Therefore, focusing on stimuli such as inertia as independence in the auditing profession can reduce the influence of stakeholders and improve the quality of judgment in auditing.

The importance of auditing in the petrochemical industry

Petroleum fiscal regimes are often complicated and distinct from those applicable to other sectors. Governments must keep track of the volume of oil produced, the price at which it was sold, and the costs incurred. While attention to all of these elements is necessary to maximize revenue collection from the sector, costs should be given special attention. Petroleum production is a physical process that can be monitored, and petroleum sales can be benchmarked against index prices (e.g., those published by Platts or Argus). Petroleum costs are manifold, varied, and often difficult to verify, especially involving related parties. The costs deducted by oil and gas companies tend to be large, both in absolute terms and relative to gross revenues. Iran benefits from a unique distribution amongst the top resource holders of almost equal shares for oil and natural gas reserves (43 percent oil and 57 percent natural gas). Figure 4 shows Iran's position among principal OPEC members.

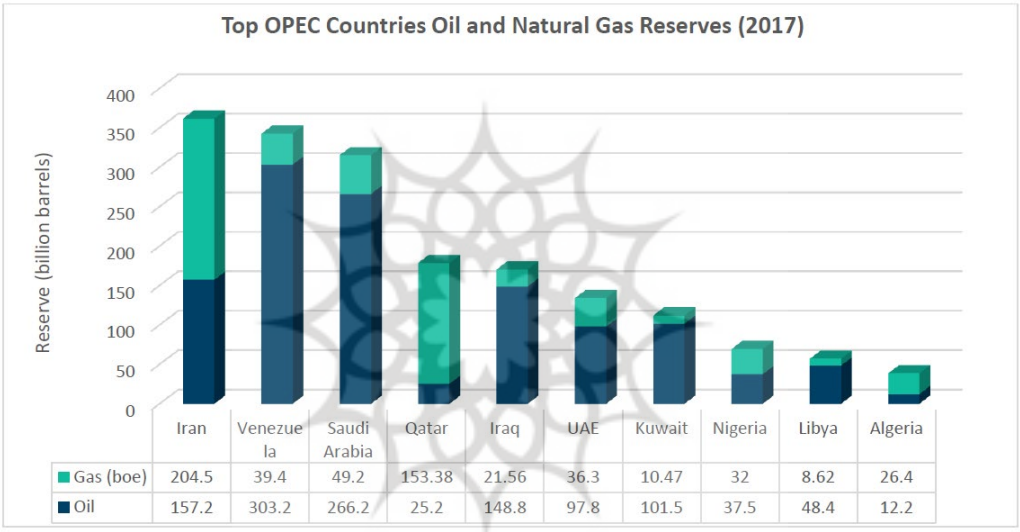

Figure 4: Iran's position among prominent OPEC members (References: Nokhbeh Fallah, 2011)

There are 184 oil and natural gas fields in Iran. These fields include 171 developed and 209 undeveloped reservoirs, as many fields have more than one producing formation stacked on top of each other. Like many other fractured carbonate systems in the Middle East, many Iranian fields in the Zagros trend are multi-layered reservoir systems. The majority of Iranian oil is produced from three main formation groups: Asmari Group, Bangestan Group, and Khami Group. Looking at the only research conducted in this field in Iran by Nokhbeh Fallah (2011), entitled "Investigating the Barriers to Performing Management Performance Audit in the National Petrochemical Company and its Subsidiaries from the Perspective of Petrochemical Industry Managers", shows the factors of insufficient knowledge of managers. The importance of auditing management performance in line with the goals of the industry, lack of binding and appropriate rules and regulations in the disclosure of operations, lack of sufficient skills in independent auditors, lack of appropriate professional standards in the field of management performance auditing, and lack of sufficient scientific resources related to the theoretical and practical methods are considered essential obstacles to blocking the independence of auditors in a transparent review of the performance of petrochemical companies in Iran.

Extension of the research questions

Schlueter and Ratzinger-Sakel (2022) conducted a study entitled "Dark Personality Traits and Audit Independence: A Review of the Systematic Literature". In this study, 89 studies related to the subject of the study were evaluated through content screening. In the framework, the three main dimensions of independence in auditing, including a code of ethics, professional

objectivity/honesty, and skepticism, are seen as the basis for audit independence, which is influenced by the invisible personality traits of individuals. The research results by reviewing the experimental literature showed that auditor independence violations could be caused by employers' covert support (for example, the use and acceptance of authority for social benefits) of auditors in the form of consulting services. On the other hand, it was found that dark personality traits of the dark personality were among the causes that could affect the three dimensions identified in this study as the basis of independence. Adams et al. (2021) conducted a study entitled "Review of Customer Influence and Auditor Independence: Evidence for Auditors' Withdrawal". Unlike previous studies examining whether the client's impact on audit quality affected auditors' current commitments, this study found that the client's influence (which poses a "risk of independence") at the audit level increased the auditor's voluntary withdrawal from the client's work. In other words, the auditor's mere looking at the individuality of his or her profession rather than the professional functions and values assigned to the audit could impact the client's influence. The results showed that, because of their power and reputation, usually large and medium-sized clients, in terms of market share, tried to influence the auditors. The analysis showed that most audit deviations occurred in this category of clients. Fadilah and Fitriany (2021) conducted a study entitled "The Status of Owners and Influence on Audit Quality". The results showed that the position of the client had no role in the extent of their influence on the quality of auditing in Indonesia. In other words, auditors tended to be more resistant to the influence of owners because of the implementation of recent laws to maintain the unit's integrity in institutional oversight of their performance and were not influenced by the client's position. Cao et al. (2020) conducted a study entitled "Does the Importance of the Customer Industry Affect Auditor Independence?". This study analyzed the audit firm's merger data from China Stock Market and Accounting research and used a difference-by-difference model to determine whether the importance of the customer industry was related to the auditor's independence. This study also used discretionary accruals and the willingness to issue adjusted audit opinions to represent auditor independence. The results showed that the greater the importance of the client industry, the greater the auditor's independence. In addition, the rate of decline in the overall importance of the client was positively related to the increase in auditor independence. Mohammadi et al. (2020) conducted a study entitled "Identification of Factors Threatening the Independence of Auditors of the Court of Audit". This research approach was mixed, and the research period was in the fall of 2019. The statistical sample of the study consisted of selected experts of the Court of Audit, and 16 people in the qualitative section were selected by theoretical saturation method; thirty people were chosen in the quantitative section by a purposeful method. In order to analyze the data obtained from the qualitative part of the theme analysis method and for quantitative data analysis, confirmatory factor analysis was used using Smart PLS software. The findings of the study collectively identify the four main threats to the independence of auditors of the Court of Audit, including individual threats, organizational threats, extra-organizational threats, and environmental threats. In addition, each of these main themes has specific sub-themes and specific conceptual categories. Ahmadzadeh et al. (2021) conducted a study entitled "The effect of Commitment to the Public Interest and the Obligation of Independence on Professional Values (Ethical Values) in Auditing Firms". The results of the study confirmed the role of auditors' commitment to the public interest in reducing the ethical acceptance of unprofessional behavior and reducing their participation in unprofessional behavior. The results also indicated a positive relationship between auditors' tendency toward independence and their commitment to the public interest. The hypothesis test results showed that auditors' tendency toward the requirement of independence had no significant effect on moral acceptance, unprofessional behavior, and their participation in unprofessional behavior. On the other hand, Nokhbeh Fallah et al. (2019) conducted a study entitled "Content Analysis of Performance Audit Reports". According to the components of the law, they carried out the fifth and sixth five-year development plans. Examining the data of petrochemical industry companies in the period 2012 to 2019, they concluded that due to the ineffectiveness of the report of industry auditors, significant corrective measures should be taken in public sector organizations to reduce the gap between what is the consumption of public resources such as the oil produced and what needs to be achieved. Productivity, accountability, and transparency are increased. This research contributes to developing performance auditing literature in this industry, understanding the areas of performance auditing, and better understanding the content of reports. Relying on the theoretical foundations presented, in line with the methodological nature of the research, we present the questions in the following order:

Question 1: What are the characteristics of inertia in the auditing profession?

Question 2: What are the most influential characteristics of inertia in the auditing profession?

The first question of the research is answered through grounded theory analysis, and the second is answered through the interpretive ranking process.

3. Methodology

The methodology of this research is in the category of developmental research in terms of results due to the theoretical inconsistency in the concepts and dimensions of independence of petrochemical industry auditors against the influence of the owners of this research to create a model of inertial characteristics in the auditing profession. In terms of purpose, this study is conducted based on an exploratory study and interpretive ranking. The research approach of the present study is inductive-deductive in terms of data collection logic because it examines a phenomenon that does not exist or is not agreed upon in the academic areas of auditing. In other words, an attempt is made to design a suitable model through an inductive approach. For this purpose, the data theory of the foundation has been used.

Nevertheless, in terms of using the type of theoretical data analysis of the foundation, the analysis of Glaser (1992) has been used because when a concept such as auditor independence against client influence has been examined by previous research but does not have sufficient coherence based on theoretical frameworks, Glaser analysis should be used in the analysis of the grounded theory. In this research, an attempt was made through interviews with experts first, based on the first stage of coding, i.e., open coding, asking the interviewees the questions that are generally open in the first stages; then, based on the central coding, the many concepts created are summarized, and we guide them in the research path. Finally, based on selective coding to present the research model for theorizing, after presenting the model and measuring the reliability of its dimensions through Delphi analysis, in quantitative analysis based on a deductive approach, an attempt is made to measure the dimensions of the model identified in the target community (quantitative target community) through analysis and explain the interpretive ranking process in order to create a more coherent understanding of the nature of the theoretical framework developed; the most influential characteristics of inertia in the auditing profession are also identified. One of the matrix analysis methods is polar matrix analysis based on the multi-criteria decision-making method (MCDM) (Chithambaranathan et al., 2015).

Nevertheless, multi-criteria decision-making methods are categorized into analyses such as AHP or ANP, according to the position of the analysis (Satie, 1990). Each option is evaluated, depending on the nature of the analysis and the design of the decision-making problem, either individually or in pairs, compared to the other options. In this research, like the analysis process in multi-criteria decision-making methods, first, the inertial characteristics in the auditing profession are identified based on the data theory analysis process of the foundation to explore the problem structure based on a pairwise comparison between inertial characteristics in the auditing profession. This research was carried out from 2020 to 2021.

Society and statistical sample

Sampling in this research is theoretical and determining the snowball sample and the criterion for reaching the end of data collection is the theoretical saturation point. The point of theoretical saturation is where the connection between concepts and a new class no longer appears. According to experts in the data theory of the foundation, such as Fernandez (2004), Glaser and Holton (2005; 2007), and Charmaz (2011), theoretical sampling continues until the categories are sufficient. For this purpose, in the first step, three members of the statistical community, who were recognized as experts based on published articles in fields related to the research topic, were purposefully selected. Shortly after designing the model, 19 people were selected as the target population based on homogeneous sampling by selecting the target population from auditors with work experience and a level of technical and specialized knowledge in the petrochemical industry. Due to the analytical nature and prevention of deviation and aggregation of research data, the size of the population in the interpretive ranking process is usually between 15 and 25 people in the most desirable case (Ismailpour et al., 2018; Azar et al., 2013) 19 people participated in the interpretive ranking process section.

Collection and analysis

Based on the nature of the research methodology, which was a combination of collecting data in the qualitative analysis section, we used in-depth and unstructured interviews (open interview design) with a

mean time of one hour. It is important to note that this was the reason for using in-depth and unstructured interviews. The present concept in this study did not have adequate conceptual coherence due to the lack of a theoretical framework, and based on the interview process, an attempt was made to create coherence in the content and nature of the concept under review in the auditing profession. After the emergence of the initial themes, the interviews were continued in a semi-structured and structured manner to separate the components in the form of general categories to help form a theoretical saturation point at the end. The questions were constantly adjusted during the interview based on the interview conditions and the interviewees' information so that the interview path did not deviate from the mainstream nature of the phenomenon under study. One of the essential parts of the grounded theory analysis is the completion of interviews, which reached a saturation point as a process and strategy in this analysis were very important (Kalalian Moghaddam et al., 2020). After each interview, the researchers began to open-ended and, to a lesser extent, selective coding to identify their concepts and commonalities so that the coding generated from the selective coding stage was compared at each stage. Therefore, by combining data collection methods in the form of unstructured and semi-structured interviews, an attempt was made to do theoretical note-taking during the interview and immediately after the interview so as to achieve more cited topics due to the interviewers' mental readiness for the meeting and to avoid possible coding biases. Therefore, focusing on this process, the process of conducting interviews from the first interview to the seventh interview, almost the dimensions of the theoretical framework were determined. From the seventh to the last interview, the researchers continued the interviews to ensure they reached saturation point. Then, in the quantitative part, according to the presentation of the theoretical framework of the research, the dimensions of the model were first attempted through Delphi analysis. The necessary measures based on three mean criteria, the coefficient of agreement, and the standard deviation should be done to evaluate the reliability of inertial characteristics in the auditing profession. The results in this section indicated the approval of all eight main components of the research. The process of collecting quality department data can be seen as follows:

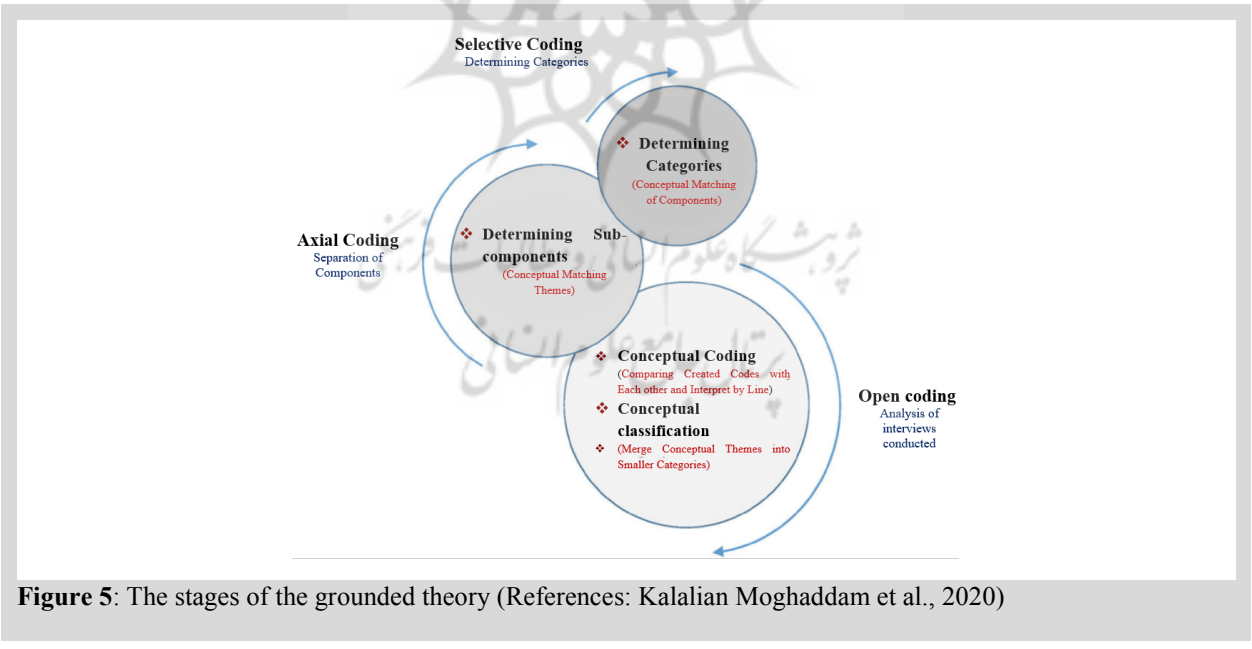

Figure 5: The stages of the grounded theory (References: Kalalian Moghaddam et al., 2020)

Then, in order to determine the most effective component of inertial characteristics in the audit profession against client influence by designing a matrix questionnaire, we attempted to perform the process of interpretive ranking analysis with the participation of 19 independent auditors with work experience and technical and specialized knowledge in the qualitative part of the research. In this regard, an attempt was made to send the questionnaire to the participants of the target community in the quantitative section with prior coordination. The audit behavioral inertia framework in the petrochemical industry was examined through polar matrix analysis based on a multi-criteria decision-making method. Component and propositional decision-making

processes, which are examined in matrix analysis and pairwise comparison, are usually one of the best interpretive ranking processes (IRP) (Sushil, 2009). In implementing the interpretive ranking process, the relationships between criteria in the form of implicit and transferable relationships are used as the interpretive ranking process (Sushil, 2017). Based on the given explanations, the interpretive ranking process can be expressed in the form of the following processes:

A) Efficient interpretive ranking for multi-criteria valuation

The method of the efficient IRP to perform the multi-criteria evaluation of inertial characteristics in the petrochemical industry auditing profession should be considered, including the following essential steps:

(1) Identify inertial characteristics in the auditing profession of the petrochemical industry

(2) Linking components to rows and columns in the form of a cross-interaction matrix (binary matrix). Matrix ideas are interpreted based on the participation of experts and become an interpretive matrix.

(3) The identification of a centralized implicit relation is measured by comparing propositions based on 0 and 1. If proposition A affects proposition B, the cell in question is 1. If it is the other way around, it is 0. Furthermore, if they are reciprocal, the cell is 1 and symmetric. If they are unrelated, both cells will be assigned zero. In other words, if two options for a criterion have the value of 0, then it should be considered an implicit non-dominant relation and entered as 0 in the dominant interaction matrix for that criterion.

(4) Further, if the relationship between the two components is direct and the related component is directly related to one of the components and takes a value of 1, the other component has a polar relationship with the relevant component. For example, if component A has a direct effect on component B, then component B also directly affects component C. Component A has a polar effect on component C, or it is so-called transferable.

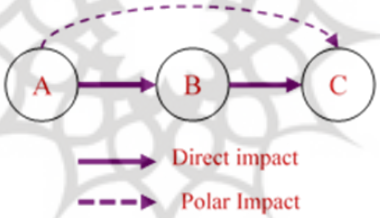

Figure 6: The process of direct and polar influence of propositions in the interpretive matrix (References: Sushil, 2017)

The sum of all dominant interactive matrices is represented by D_i, and the reciprocal matrix is represented by D. Equation (1) is used for the simple interpretive ranking process, and Equation (2) is employed for the weighted interpretive ranking process with weight w_i for the first criterion:

$$D = \sum_i D_i \quad (1)$$

$$D = \sum_i w_i D_i \quad (2)$$

The weights derivative using total interpretive structural modeling (TISM) is described in the next section. Comprehensive structural interpretive modeling can be used to generate a hierarchy of value integration criteria to obtain component weights, i.e., inertial characteristics in the auditing profession for green energy sustainability in the petrochemical industry, according to the approach of Sushil (2017). These steps can be viewed in the form of the following interpretive processes:

Step 1: The components should be identified using qualitative analysis methods such as meta-synthesis.

Step 2: Checklists are compiled and prepared as a pairwise comparison to determine the self-interaction matrix and distributed among research community members. Parallel comparisons are made in columns and rows between individual variables to determine if the row *i* component is the cause of the *j* column component or vice versa. Either there is a relationship, or there is no communication. It also shows the degree of symmetry of the relationship between the components.

Step 3: Self-interactive matrices are created and interpreted. The pairwise comparison of the elements

takes place by forming the structural self-interaction matrix (SSIM): An interpretation that identifies only the communication path in ISM analysis, whereas the TISM comprehensive interpretation method fully interprets any pairwise comparison by answering the interpretive question mentioned in the previous step. The *i*th index is compared in pairs with all elements from $(i + 1)$ to *n*th for pairwise comparisons. For each connection, the answer is *yes*, "Y" or *no*, "N", and the reason is stated in the case of a positive answer. In this case, the interpretive logic of paired relations is presented in the primary scientific form of interpretive logic. The table below shows the pairwise comparison between inertial characteristics in the auditing profession.

Step 4: The achievement matrix is determined as +1 or 0 in the matrix table based on pairwise comparisons made by the target community. These relationships are defined as follows:

If i leads to j, and there is a $+ve$ symmetry, we set the number $+1$ in cell ij and 0 in cell ji

If j leads to i, and there is $+ve$ symmetry, we put the number $+1$ in cell ji and 0 in cell ij

If i is equal to j, and there is a symmetry of$+ve$, we put the number $+1$ in both cells ij and ji

If there is no connection between i and$j$, we put the number 0 in both cells ij and ji

Step 5: The access matrix is hierarchically divided. Determining the relationships between variables must first identify the output set, input set, and common elements. The scoring level and priority of the variables are determined by the achievement set and the prerequisite set for each variable.

Step 6: A hierarchical diagram is prepared according to the symmetry of the relationships between the components. The components of the hierarchical surfaces are first sorted and then linked directly to the components based on the accessibility matrix with symmetry.

Step 7: An interpretive matrix is prepared with symmetry, in which the interpretation of nodes and links related to the indicators are developed as a comprehensive interpretive structural model.

4. Research validity

In studies of qualitative nature, especially in the grounded theory analysis, validity and reliability cannot be cited, and the concept of validity should be used to assess the relevance of research content with data collection processes. Therefore, this study considered data reliability by systematic methods of data theorizing of the foundation in the collection, record, data analysis, and interpretation, as well as evaluating the validity and transferability criteria by conducting complete research up to data saturation, data presentation by experts, and coding interview data (Speziale et al., 2011). This research uses the three-way method to assess the validity of the research.

Table 1: Evaluation of research validity (References: Research Findings)

Validation features	Description of the validity characteristics of the research
Credit referral	This study returned 6 out of 12 interviews to the interviewees after completing the interview and analyzing the data to check the validity of the findings. The results showed that in most of the conceptual codes created, the researchers of this study could have a correct understanding of the statements of the interviewers, which can be due to the favorable interaction and theoretical understanding of the interviewees and the interviewer about the research topic.
Search for conflicting evidence	The search for conflicting evidence is done through targeted sampling. Sampling people who can offer conflicting perspectives can lead to a comprehensive description of a phenomenon. To achieve this criterion, several experts who specialized in qualitative research and data theory of the foundation supervised the various stages of coding, conceptualization, extraction of categories, and researchers' perceptions. These individuals were asked to express their perceptions of the interviews and the concepts and, in the next step, the categories. The researchers matched these perceptions. The closeness of these individuals' perceptions to the researchers' perceptions strengthened the scientific support of the research.
Explain the method of taking notes and conducting research	At this stage, the interview protocol and process were provided to six interviewees to confirm whether the analysis was done correctly, which reviewed the notes and showed that the process of research and analysis of codes was in the right direction.
Prepare a detailed report of the results	Interviews were recorded and typed, and the list of interviewees was prepared; the entire data analysis process was typed and stored in computer and flash memory to achieve this criterion in the present study.

In order to measure the reliability in the quantitative part in line with the content of the analyses used in the research, Delphi analysis is based on two mean criteria; agreement coefficient and standard deviation are used. Delphi analysis is performed to examine the level of application of concepts in the target community to achieve theoretical adequacy in the target community regarding the identified dimensions and components. The results in this section are presented in Table 3 in the second section of the analysis of research findings.

Findings

In this section, first, the findings of the theoretical analysis of the grounded theory in the qualitative section to design the model and then the weighted interpretive matrix analysis to advance the quantitative section's objectives are presented.

Findings of grounded theory

There is no pre-determined and definitive list of inertial features in the auditing profession in the form of a specific set of features with clear and distinctive demarcations in the form of a theoretical framework. Therefore, in this section, an attempt is made to answer the first and second questions of the research. However, the findings of this study show that the interviewees can identify critical and significant issues in the auditing profession and help create a research model. Table 2 presents the three-step coding process.

Table 2: The dimensions of inertial characteristics in the auditing profession (References: Research Findings)

The main coding			Theoretical coding
Open coding	**Axial coding**	**Selective coding**	
Conceptual themes	**The main components**	**Categories**	**Main classification**
Understanding the concepts in the auditing profession	Increasing values	Core values in the auditor's vision	Characteristics of inertia in the auditing profession
Achieve a level of difference in independence			
Changing the professional philosophy in auditing			
Effective processes in adding value to stakeholders			
Value creation for stakeholders			
Changing intellectual contexts in behavioral independence			
Strengthen spirituality in professional beliefs in auditing	Social identity		
Social cognition of stakeholder interests			
Attachment to the profession is strengthened based on social beliefs.			
Stimuli of pluralist processes in the interests of the collective			
Familiarity with the rules and regulations in violation			
Preserving the beliefs and principles of professionalism	Comprehensive commitment		
Adherence to ethical practices in auditing			
Maintaining a balance between professional behavior and communication behavior			
The motivation of cultural mechanisms in the auditing profession			
The desirability of the social status of the auditing profession			
Increasing job value			
Matching skills with individual characteristics in choosing a job	Optimal career path		

The main coding			Theoretical coding
Open coding	**Axial coding**	**Selective coding**	
Conceptual themes	**The main components**	**Categories**	**Main classification**
Understanding the background of the auditing profession at the beginning of the tenure of this profession		The desirability of values in the career path of the auditor	
Recognition of stressful characteristics in professional judgment			
Use the good experiences of others			
Desire to succeed in career advancement	Sustainable stimuli		
Desire to advance in the auditing profession			
Desire to gain industry expertise in the auditing profession			
Desire to gain a reputation in the auditing profession			
The desire to gain personal value in the auditing profession			
Belief in individual abilities in judgment	Locus of control		
Accepting negligence in the auditing profession			
Rely on success in the profession without having relationships			
Maintain an orbital value to be held accountable for the action taken			
Maintaining a professional identity over the identity of the owners			
Maintain focus when judging	Lack of bias	The effectiveness of rationalism in the auditor's perception	
Failure to extend the characteristics of financial statements to past operations			
Lack of attachment to a feature at the time of decision making			
Lack of fascination with the characteristics of famous or influential owners			
Maintain excitement about judging			
A professional look at the pressures of auditing	Maintain perceptual calm		
Do not deviate from the rules and regulations			
Select audit work tailored to professional competencies			

The findings of the research, especially the discussion of concepts and sub-classifications in the light of research on the characteristics of inertia in the auditing profession and citing ethical and practical guidelines, are presented, and the emergence and development of components of each conceptual classification will be given simultaneously. As can be seen in Table 2, there are three subcategories of core values in the audit view, the desirability of values in the auditor's career path, and the effectiveness of rationalism in the auditor's perception. Table 3 defines each of the sub-classifications. Variables are interrelated in the components that make up inertial characteristics in the auditing profession.

Table 3: The definitions of subcategories (References: Research Findings)

Subcategories	Definition
Core values in auditing insights	This reference refers to the level of auditors' cognitive characteristics according to which the individual gains a more coherent view of the professional values in auditing, and this will pave the way for more responsible and committed actions in the auditor and will strengthen the level of independence and prevent the influence of the client.
The desirability of values in the career path of the auditor	This component refers to a set of motivational motivations in the auditor. On the one hand, based on professional experience, the level of audit skills will increase, which will cause by reinforcing enduring motivations in the individual. The dependence on the reputation or the influence of the client on the auditor is reduced, and, according to the job philosophy, the functions of his/her actions are improved to promote independence in judgment.
The effectiveness of rationalism in the auditor's perception	In this component, the psychological characteristics of the auditor are examined in terms of conflict control and stresses in the judgment and during the audit process. In this part, strengthening the perception of inertia helps the auditor, by controlling ambiguity and avoiding perceptual biases, with more peace of mind, to judge the client's actions and maintain his/her outward and inward independence in the face of pressures in this area (feminine).

Theoretical Framework

After identifying and explaining the components of conceptual, subclassifications, and main classifications and based on the codes created due to the analysis of interviews in three coding sections, i.e., open coding, the interviewees were asked the open questions. Then, based on the central coding, many concepts were created. It was brief and guided by the research in this section. Based on selective coding, the research model for theorizing was presented. The framework of inertial characteristics in the auditing profession is presented in the following order.

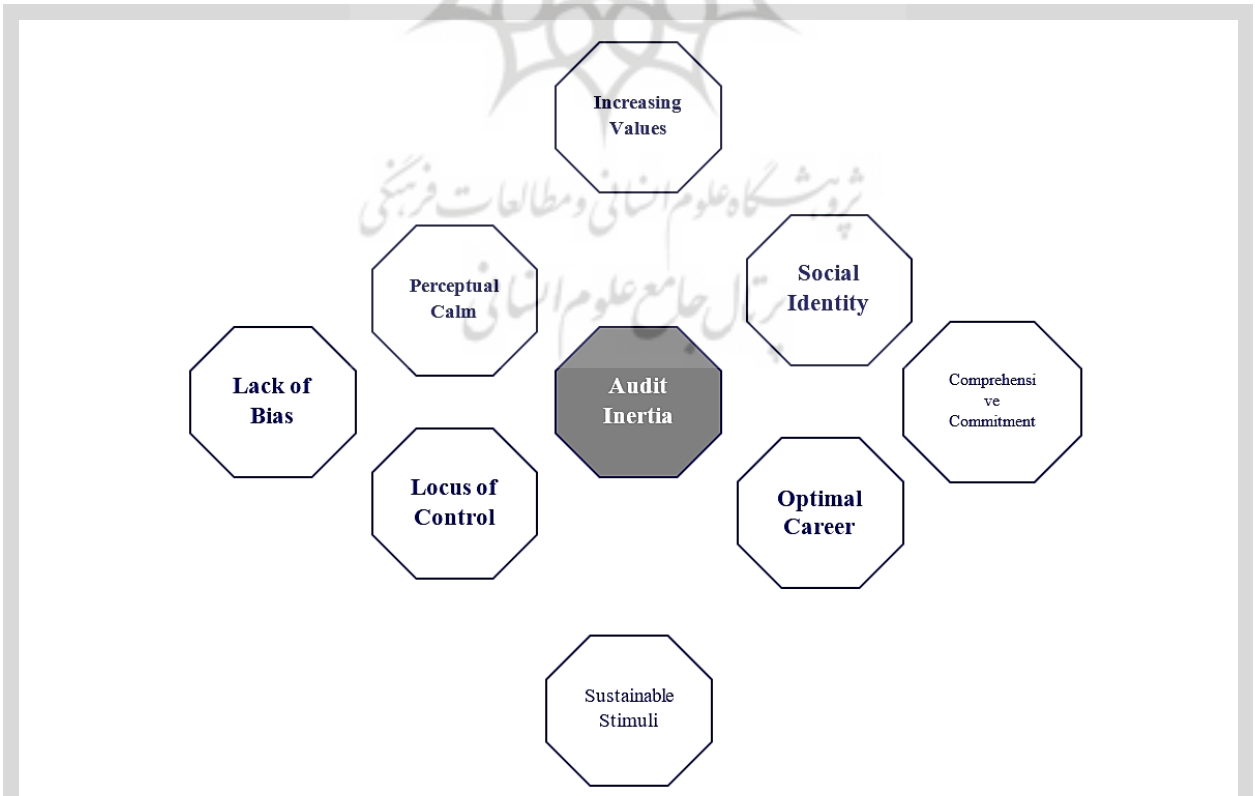

Figure 6:The theoretical framework of inertial characteristics in the auditing profession (References: Research Findings)

Table 4: The Delphi analysis process to determine the consensus of experts (References: Research Findings)

		The first round of Delphi		The second round of Delphi		Result
	Conceptual themes	**Coefficient of agreement**	**Mean**	**Coefficient of agreement**	**Mean**	
Main components	Increasing values	0.65	5.20	0.75	5.50	Confirm
	Social identity	0.80	6	0.82	6.10	Confirm
	Comprehensive commitment	0.80	6	0.90	6.30	Confirm
	Optimal career path	0.75	5.50	0.55	5.80	Confirm
	Sustainable stimuli	0.60	5.20	0.75	5.40	Confirm
	Lack of bias	0.75	5.50	0.85	6.20	Confirm
	Maintain perceptual calm	0.75	5.50	0.80	6	Confirm
	Locus of control	0.65	5.20	0.85	6.10	Confirm

The critical point is that according to the mean criterion, considering that Likert has seven options, obtaining a score of five or higher is the license to approve each component. Moreover, to confirm the components based on the agreement coefficient criterion, obtaining a score of 0.5 indicates the reliability of the identified components. As can be seen, all the propositional themes of the research were approved in line with the inertial characteristics in the auditing profession. Therefore, this means that the reliability of the research from the perspective of analysis in the studied contexts has been confirmed. As described earlier, the research enters the phase of interpretive ranking analysis to determine the most effective inertial characteristics in the petrochemical industry auditing profession. Therefore, to compare the pair of inertial characteristics in the petrochemical industry auditing profession, the process of evaluating the impact of row *i* on column *j* or vice versa or reciprocity is used. Therefore, to create interactive matrices, the level of direct, symmetric, or indirect communication must first be considered in line with the explanations. Determining the type of relationships that experts use based on the symbols in Table 5 is suggested.

Given the abbreviations of this analysis, the following is the structure of the structural self-interaction matrix. In this section, the interpretation matrix should be determined based on comparing row *i* and column *j* and the mode index in the following order.

Table 5: Conceptual relations in the formation of structural self-interaction matrix (References: Sushil, 2017)

	Defined abbreviations			
	V	**A**	**X**	**O**
Mathematical description	$i \Rightarrow j$	$i \Leftarrow j$	$i \Leftrightarrow j$	$i \nLeftrightarrow j$
Interpretive description	The direct effect of rows on columns	Direct effect column by row	Row and column interaction	Lack of row and column effect

Table 6: The self-interaction matrix of inertial characteristics in the audit profession (References: Research Findings)

		A	**Values**	**Identity**	**Commitment**	**Career path**	**Stimuli**	**Control**	**Perceptual**	**Bias**
			A1	**A2**	**A3**	**A4**	**A5**	**A6**	**A7**	**A8**
Components of row *i*	Increasing values	A1	-	X	A	V	A	A	A	V
	Social identity	A2		-	A	V	A	A	A	V
	Comprehensive commitment	A3			-	A	A	X	X	O
	Optimal career path	A4				-	O	A	A	O
	Sustainable stimuli	A5					-	O	O	V
	Locus of control	A6						-	X	V
	Maintain perceptual calm	A7							-	O
	Lack of bias	A8								-
			The components of column *j*							

Table 7: The interpretive process of the reciprocal matrix (References: Research Findings)

		A1	A2	A3	A4	A5	A6	A7	A8
	A1	-	Increasing values are the basis for the social identity of the auditing profession.		Increasing values are the basis for the optimal career path of the auditing profession.				Increasing values are the basis for controlling the bias of the auditing profession.
	A2	Social identity is the basis for the growing values in the auditing profession.	-		Social identity is the basis for the optimal career path of the auditing profession.				Social identity is the basis for controlling the bias of the auditing profession.
	A3	Comprehensive commitment is the basis for the growing values in the auditing profession.	Comprehensive commitment is the basis for social identity in the auditing profession.	-			Comprehensive commitment is the basis for a locus of control in the auditing profession.	Comprehensive commitment is the basis for perceptual peace of mind in the auditing profession.	
	A4			The optimal career path is the basis for comprehensive commitment in the auditing profession.	-				
	A5	Sustainable stimuli are the basis for the growing value of the auditing profession.	Sustainable stimuli are the basis for social identity in the auditing profession.	Sustainable stimuli are the basis for comprehensive commitment in the auditing profession.		-			Sustainable stimuli are the basis for controlling the audit profession.

		A1	A2	A3	A4	A5	A6	A7	A8
	A6	Locus of control is the basis for increasing values in the auditing profession.	Locus of control is the basis for social identity in the auditing profession.	Locus of control is the basis for comprehensive commitment in the auditing profession.	Locus of control is the basis for a promising career path in the auditing profession.		-	Locus of control is the basis for maintaining perceptual calm in the auditing profession.	Locus of control is the basis for controlling the bias of the audit profession.
	A7	Maintaining perceptual calm is the basis for the growing values in the auditing profession.	Maintaining perceptual calm is the basis for social identity in the auditing profession.	Maintaining perceptual calm is the basis for a desirable career path in the auditing profession	Maintaining perceptual calm is the basis for a desirable career path in the auditing profession.		Maintaining perceptual calm is the basis for the locus of control in the auditing profession.	-	
	A8								-
		The components of column *j*							

This section should be based on converting the abbreviations defined in Table 5 and the self-interaction matrix presented in Table 6. Converting the abbreviation symbols in Table 8 determines the achievement matrix in Table 9.

Based on these concepts, an achievement matrix is formed in this section to determine the comparison of row *i* and column *j* based on 0 and 1.

Table 8: The process of converting acronyms to 0 and 1 (References: Sushil, 2017)

		Convert concept symbols to quantitative numbers
Conceptual symbol	V	The cell corresponding to this pair is located in the matrix of achieving number 1, and the symmetric cell is number 0.
	A	The cell corresponding to this pair is in the matrix of achieving the number 0, and the symmetric cell is the number 1.
	X	The cell corresponding to this pair is in the matrix of achieving the number 1, and the symmetric cell is the number 1.
	O	The cell corresponding to this pair is in the matrix of achieving the number 0, and the symmetric cell is the number 0.

Table 9: The achievement matrix (References: Research Findings)

		A	Values A1	Identity A2	Commitment A3	Career A4	Stimuli A5	Control A6	Perceptual A7	Bias A8
Components of row *i*	Increasing values	A1	-	1	0	1	0	0	0	1
	Social identity	A2	1	-	0	1	0	0	0	1
	Comprehensive commitment	A3	1	1	-	0	0	1	1	0
	Optimal career path	A4	0	0	1	-	0	0	0	0
	Sustainable stimuli	A5	1	1	1	0	-	0	0	1
	Locus of control	A6	1	1	1	1	0	-	1	1
	Maintain perceptual calm	A7	1	1	1	1	0	1	-	0
	Lack of bias	A8	0	0	0	0	0	0	0	-
			The components of column *j*							

In the continuation of the analysis to determine the indirect relationship between the inertial characteristics in the auditing profession of the petrochemical industry, the pairwise comparison of the first component is compared in pairs with all elements from $(i + 1)$ to n. For each *yes* answer, option "☑" is used, which means that there is a polar relationship between the inertial characteristics in the auditing profession of the petrochemical industry.

Based on the pairwise comparison matrix, in this section, the reciprocal matrix relationships of each approved characteristic of the qualitative research stage are described to establish the necessary transitional relationships in the final model.

Based on the pairwise comparison matrix, in this section, the final achievement matrix is compiled according to the indirect relationship of inertial characteristics in the auditing profession of the petrochemical industry. In fact, if property A1 is interpreted as unrelated to property A2, but the relationship between A2 and A3 is directly defined, based on the execution of the Boolean product command in MATLAB software, the relationship between A1 and A3 can be determined symmetrically in the form of "1*". Therefore, the results of this section are presented in Table 12 in the following order.

In order to determine the level of direct and transferable influence of inertial characteristics in the petrochemical industry's auditing profession, the percentage points of the total level of influence are determined, as presented in Table 13.

Table 10: The paired comparison between propositional themes based on the matrix form (References: Research Findings)

	Ross matrix A1–A8													
	A1 – A2	A2 – A1	A1 – A3	A3 – A1	A1 – A4	A4 – A1	A1 – A5	A5 – A1	A1 – A6	A6 – A1	A1 – A7	A7 – A1	A1 – A8	A8 – A1
A1	☑	☑		☑				☑		☑		☑		
	Cross matrix A2–A8													
	A2 – A3	A3 – A2	A2 – A4	A4 – A2	A2 – A5	A5 – A2	A2 – A6	A6 – A2	A2 – A7	A7 – A2	A2 – A8	A8 – A2		
A2		☑				☑		☑		☑				
	Cross matrix A3–A8													
	A3 – A4	A4 – A3	A3 – A5	A5 – A3	A3 – A6	A6 – A3	A3 – A7	A7 – A3	A3 – A8	A8 – A3				
A3		☑		☑	☑	☑	☑	☑						
	Cross matrix A4–A8													
	A4 – A5	A5 – A4	A4 – A6	A6 – A4	A4 – A7	A7 – A4	A4 – A8	A8 – A4						
A4				☑		☑								
	Cross matrix A5–A8													
	A5 – A6	A6 – A5	A5 – A7	A7 – A5	A5 – A8	A8 – A5								
A5														
	Cross matrix A6–A8													
	A6 – A7	A7 – A6	A6 – A8	A8 – A6										
A6														
	Cross matrix A7–A8													
	A7 – A8	A8 – A7												
A7														

Table 11: The relations of the pairwise reciprocal matrix (References: Research Findings)

Cross-Matrix	Cross-matrix description
A1: incremental values	
A1 → A2	Increasing values are the basis for social identity in the auditing profession.
A2 → A1	Social identity is the basis for the growing values in the auditing profession.
A3 → A1	Comprehensive commitment is the basis for the growing values in the auditing profession.
A5 → A1	Sustainable drivers are the basis for the growing value of the auditing profession.
A6 → A1	Locus of control is the basis for increasing values in the auditing profession.
A7 → A1	Maintaining perceptual calm is the basis for the growing values in the auditing profession.
A2: Social identity	
A3 → A2	Comprehensive commitment is the basis for social identity in the auditing profession.
A5 → A2	Sustainability drivers are the basis for social identity in the auditing profession.
A6 → A2	Locus of control is the basis for social identity in the auditing profession.
A7 → A2	Maintaining perceptual calm is the basis for social identity in the auditing profession.
A3: Comprehensive commitment	
A4 → A3	The optimal career path is the basis for comprehensive commitment in the auditing profession.
A5 → A3	Sustainable incentives are the basis for comprehensive commitment in the auditing profession.
A3 → A6	Comprehensive commitment is the basis for the locus of control in the auditing profession.
A6 → A3	Locus of control is the basis for comprehensive commitment in the auditing profession.
A3 → A7	Comprehensive commitment is the basis for maintaining perceptual calm in the auditing profession.
A7 → A3	Maintaining perceptual calm is the basis for comprehensive commitment in the auditing profession.
A4: Optimal career path	
A6 → A4	Locus of control is the basis for a promising career path in the auditing profession.
A7 → A4	Maintaining perceptual calm is the basis for a desirable career path in the auditing profession.

A5: Sustainable stimuli	
--	--
A6: Locus of control	
A6 → A7	Locus of control is the basis for maintaining perceptual calm in the auditing profession.
A7 → A6	Maintaining perceptual calm is the basis for the locus of control in the auditing profession.
A7: Lack of bias	
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Table 12: The final achievement matrix of inertial characteristics in the auditing profession (References: Research Findings)

		A	Values	Identity	Commitment	Career path	Stimuli	Control	Perceptual	Bias
			A1	A2	A3	A4	A5	A6	A7	A8
Components of row *i*	Increasing values	A1	**1**	1	0	1	0	0	0	1
	Social identity	A2	1	**1**	0	1	0	1*	0	1
	Comprehensive commitment	A3	1	1	**1**	0	0	1	1	0
	Optimal career path	A4	0	0	1	**1**	0	1*	0	0
	Sustainable stimuli	A5	1	1	1	0	**1**	1*	0	1
	Locus of control	A6	1	1	1	1	1*	**1**	1	1
	Maintain perceptual calm	A7	1	1	1	1	0	1	**1**	0
	Lack of bias	A8	0	0	0	0	0	0	0	**1**
			The components of column *j*							

Table 13: The percentage scores of the level of influence of the themes of power domination (References: Research Findings)

			Direct impact	Transferable impact	Interpretive influence	Total impact	Comprehensive impact percentage		
Characteristics of inertia in the auditing profession	Increasing values	A1	4	0	3	7	**10.76**	6th	Rank
	Social identity	A2	4	1	3	8	**12.30**	5th	
	Comprehensive commitment	A3	5	0	4	9	**13.84**	4th	
	Optimal career path	A4	3	1	1	5	**7.69**	7th	
	Sustainable stimuli	A5	5	1	4	10	**15.38**	3rd	
	Locus of control	A6	7	1	6	۱۴	**21.53**	**1st**	
	Maintain perceptual calm	A7	6	0	5	11	**16.92**	2nd	
	Lack of bias	A8	1	0	0	1	**1.53**	8th	
		Total	**35**	**4**	**26**	**65**			
		Percentage	**40**	**6.15**	**53.84**				

The results showed that 40% of the relationship between inertial characteristics in the auditing profession of the petrochemical industry is direct, and only 4% have a transitional effect. From the total impact based on the pairwise scale between the inertial characteristics in the auditing profession, it is inferred that the percentage of effective influence of the locus of control property compared to other inertial characteristics in the auditing profession has a more influential role in auditors' independence. This means that the auditor's encirclement of individual control over success and failure can lead to avoiding a set of external factors, such as chance and fate, in audit functions. In other words, an auditor with the characteristics of an internal locus of control tries to exercise the ability to express independent behavior in professional comments and judgments, regardless of external reasons. It is also found that the least effective characteristics of inertia in the auditing profession of the petrochemical industry are related to the lack of perceptual bias and the desired path. In order to strengthen the knowledge of inertial characteristics in the auditing profession according to the

Mic Mac matrix, each of the inertial characteristics in the petrochemical industry auditing profession is placed within this matrix.

Based on determining the influence and dependency, the analysis of nodes and links of each inertial feature in the auditing profession of the petrochemical industry in the form of graphical analysis helps. Therefore, the components are placed based on the power of influence and dependence by combining the symmetry of the components based on the four graphic dimensions of this analysis.

Table 14: Determining the influence and dependence (References: Research Findings)

		A	A1	A2	A3	A4	A5	A6	A7	A8	Influence power
Components of row *i*	Increasing values	A1	1	1	0	1	0	0	0	1	4
	Social identity	A2	1	1	0	1	0	1*	0	1	5
	Comprehensive commitment	A3	1	1	1	0	0	1	1	0	5
	Optimal career path	A4	0	0	1	1	0	1*	0	0	3
	Sustainable stimuli	A5	1	1	1	0	1	1*	0	1	5
	Locus of control	A6	1	1	1	1	1*	1	1	1	8
	Maintain perceptual calm	A7	1	1	1	1	0	1	1	0	6
	Lack of bias	A8	0	0	0	0	0	0	0	1	1
		The power of dependence	6	6	5	5	2	6	3	5	
			The components of column *j*								

Table 15: The (Mic Mac) placement of inertial characteristics (References: Research Findings)

	Independent quarter				Linked quarter				
Influence power						⟦A6⟧			8
									7
			⟦A7⟧						6
		⟦A5⟧			⟦A3⟧	⟦A2⟧			5
						⟦A1⟧			4
					⟦A4⟧				3
									2
					⟦A8⟧				1
	1	2	3	4	5	6	7	8	
	Quarter of autonomy				Dependent quarter				
	The power of dependence								

As the results show, in the first quarter, i.e., autonomy, there are no inertial features in the petrochemical industry auditing profession that promote auditor independence. On the other hand, three characteristics of incremental values are identified in the dependent quarter: a desirable path and a lack of bias. Although they have lower penetration power than desirable, they have strong dependence power. In the independent quarter, it is found that there are two characteristics of sustainable stimuli and maintaining perceptual calm, which indicates that they greatly influence inertial functions in the auditing profession to promote the auditor's independence. Finally, three characteristics of social identity are identified; overall commitment and focus in the fourth quarter and the linked quarter indicate that these inertial characteristics in the auditing profession effectively promote auditor independence. Nevertheless, as the ranking results show, the highest degree of influence is the locus of control characteristic, which shows this inertia feature's influential role in the auditing profession in promoting auditors' independence in the petrochemical industry.

5. Conclusions

This study aimed to interpret the inertial characteristics of the auditing profession to promote auditors' independence in the petrochemical industry. In this research, first, through the analysis of the grounded theory, according to the first question of the research on identifying inertial characteristics in the auditing profession of the petrochemical industry, dimensions appropriate to this concept are identified based on the analysis of the grounded theory. In this section, the analysis of the data collection tool was an interview during three coding steps. An attempt was made to provide a model of inertial characteristics in the auditing profession. According to the theoretical framework of the research, the three main dimensions of core values in auditing insights were identified; the desirability of values in the auditor's career and the effectiveness of rationalism in the auditor's perception are a set of individual causes, which should be considered in maintaining the auditor's independence from client influence. In analyzing each of the three dimensions of the qualitative sector findings, it should be noted that the independent auditor, on the one hand, based on the core value dimension in the audit insight, can take a more significant step toward the nature of recognizing his/her profession than the professional situations in which he/she is actively creating a level of philosophical cognition to have a positive performance concerning incremental values in auditing. The dynamics of incremental values in the auditor's vision can lead to a change in intellectual contexts in terms of behavioral independence and enable auditors to better acquire their social identity and to be committed to adhering to auditing principles. In these circumstances, core values strengthen the auditor's stance against client influence and try to achieve a more socially desirable position by observing ethical practices.

On the other hand, in line with the second research question on determining the most effective characteristics of inertia in the auditing profession to promote the independence of auditors, the results in the quantitative part showed that the locus of control in the auditor is considered a way to deal with client influence and maintain independence. This means that if an auditor can refer mistakes in his/her career path to technical characteristics and competencies, he/she will be better able to adhere to professional values in auditing and not be influenced by the client. The locus of control is part of an individual trait that each person strives for depending on their successes and failures, takes responsibility for, and, regardless of the pressures, improves their professional and behavioral abilities to do the right thing professionally in the future. Therefore, the result is an argument about the in-person nature of auditors and the extent to which they can maintain ethical and professional values so as not to face professional challenges. Accordingly, the locus of control can be considered an essential part of auditors' behavioral independence characteristics against the owners' influence.

Regarding the policy implication of this research, it should be stated that in any orientation toward accountability and efficient resource allocation and utilization in Iran, members of the accounting profession will be called upon to assume greater responsibilities in corporate audit reporting. Therefore, the onus is on the institute to anticipate these changes and ensure its members are well-equipped with the professional competence/training and attitudes suited to the new conditions.

Reviewing the results obtained, we suggest that professional contexts in petrochemical industry auditing should be due to the balance between the individual characteristics of auditors to be matched with the level of their professional capabilities in this industry to thus strengthen the functions of maintaining individual independence against the influence of owners. Therefore, policy-making institutions in the auditing profession and petrochemical industry, following the law of the fifth and sixth five-year development plan by increasing the periodic tests, should take more special measures to eliminate their behavioral points against the influence of owners. For example, requiring industry auditors to take courses in behavioral and professional fit from a communication perspective, marketing, and concluding audit contracts with owners, and the receipt of such periodic certificates by auditors should be considered a basis for their more excellent resistance to the influence of owners and avoid the possibility of risks of interaction and tolerance of the auditor with the owners of this industry. The research is suggested to investigate auditor duties and their consequences and determine how they relate to ethical decisions. The findings better inform auditor education of such research. On the other side, we suggest training auditors to become aware of their thought processes and the unconscious bias affecting their judgment so that they may begin to engage in more skeptical thinking. This knowledge alone will not solve the problem, but once auditors understand the nature of their unconscious bias,

resulting expertise may be the best way to face and prevent the conflict of interest.

In order to express the limitations of this research, it should be stated that the generalizability of the results of such research to other communities with behavioral characteristics and social and cultural features is usually low, which can be considered a limitation. However, relying on the extension of the concepts identified to the independent auditors, an attempt was made to analyze the dimensions of auditor independence from a functional perspective. On the other hand, our desire to understand more fully the social, economic, and cultural context in which this concept of auditor independence is realized has led us to take a broader view of auditor independence. There are limitations in our initial approach to the framework. Although it has its uses to ensure that a holistic approach is taken, it is more valid for interpreting between-subject factors rather than within-subject ones. These are the two main limitations of this study that should be considered in future research.

On the other hand, the problems related to learning corona last year caused the possibility of face-to-face interviews with many experts not to be available, and many of the interviews were round-the-clock or video and telephone, which can be somewhat effective in expressing the interviewees' situation concerning the subject. Understanding these limitations is suggested to generalize the research results by compiling standard questionnaires, and more comprehensive studies should be conducted to examine the correlation between the client's influence and audit independence.

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