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Linking Organizational Culture and Professional Ethics to Internal Audit Quality: Designing a Model to Enhance Process Effectiveness

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ABSTRACT

This study was conducted with the aim of examining the linkage between organizational culture and professional ethics with internal audit quality and of designing a model to enhance process effectiveness. The data required for Interpretive Structural Modeling (ISM) were collected from a panel of experts consisting of 15 heads of audit committees of companies listed on the Tehran Stock Exchange. For the structural equation modeling (SEM) phase, data were collected using a researcher-developed questionnaire distributed among 384 accountants, internal auditors, senior managers, and executive staff of companies listed on the Tehran Stock Exchange. In this study, an internal audit quality model based on organizational culture and professional ethics was developed using ISM. Subsequently, based on the derived framework, the relationships among variables were re-examined using SEM. The results of the ISM analysis indicated that professional ethics, through the dimensions of adherence to professional standards, professional conduct and performance, competence, independence and objectivity, confidentiality, and integrity, leads to the enhancement of internal audit quality. Furthermore, organizational culture, through the dimensions of commitment to organizational regulations, acceptance of organizational values, adaptability and flexibility, and commitment to participation, contributes to improving internal audit quality. The MICMAC analysis revealed that adherence to professional standards, professional conduct and performance, competence, and independence and objectivity possess the highest driving power in the model influencing internal audit quality, while the greatest dependence on internal audit quality belongs to the components of commitment to organizational regulations, acceptance of organizational values, adaptability and flexibility, and commitment to participation. Finally, the results of structural equation modeling demonstrated that professional ethics and organizational culture have a positive and statistically significant effect on internal audit quality. Moreover, professional ethics exerts a positive effect on internal audit quality through the mediating role of organizational culture.

Keywords: Professional Ethics; Organizational Culture; Internal Audit Quality.

Introduction

Internal audit has moved well beyond a narrowly technical assurance function and is increasingly understood as an organizational capability that supports governance, risk management, and control effectiveness, particularly in environments characterized by regulatory complexity, fast-changing business models, and heightened stakeholder

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scrutiny. In this context, the concept of internal audit quality has attracted sustained attention because it shapes the credibility, usefulness, and decision relevance of internal audit outputs for boards, audit committees, and senior management. Contemporary literature emphasizes that internal audit quality is not solely the product of compliance with standards or the presence of formal procedures; rather, it is an emergent outcome of interacting individual, organizational, and institutional factors that together condition how internal auditors plan, execute, and communicate assurance work (1). Prior empirical studies show that internal audit quality is materially linked with broader reporting outcomes, including the quality of financial reporting and disclosure, implying that internal audit can influence the reliability of information used by capital markets and other stakeholders (2, 3). These linkages are particularly salient for listed firms, where internal audit is expected to function as a robust second/third line mechanism that detects control weaknesses, mitigates opportunistic behavior, and improves the integrity of reporting processes. In parallel, governance research underscores that internal controls and monitoring systems are embedded in broader governance configurations, such that the effectiveness and quality of internal audit should be examined in conjunction with corporate governance and internal control architectures (4). Accordingly, internal audit quality has become a key analytic construct for management and accounting scholars as well as for regulators and practitioners seeking to enhance assurance effectiveness and organizational accountability.

Despite this growing interest, there is no single universally accepted operationalization of internal audit quality, and the literature reflects multiple perspectives on what constitutes “quality” in internal audit. Some streams focus on outcome-based indicators (e.g., value-added, usefulness to management, and contribution to risk mitigation), while others emphasize process-based and capability-based dimensions such as planning rigor, methodological consistency, evidence sufficiency, professional judgment, and reporting clarity (1). From the client-company perspective, audit quality is also shaped by perceived reliability, responsiveness, and the auditor’s ability to provide credible insights under constraints of time and resources (5). Moreover, macro-level dynamics in the audit profession—such as strategic responses of audit firms to structural changes—signal that quality is not static but responds to competitive pressures and institutional evolution (6). These considerations suggest that internal audit quality is best treated as a multidimensional phenomenon influenced by both “hard” controls (standards, procedures, structural arrangements) and “soft” controls (values, norms, and behavioral expectations). The latter has directed scholarly focus to organizational culture and professional ethics as foundational drivers that can either enable or undermine internal audit quality by shaping how internal auditors interpret obligations, resolve conflicts, and act under ambiguity.

Organizational culture is widely conceptualized as the shared system of values, norms, and taken-for-granted assumptions that guide behavior and decision-making within organizations. In audit and assurance settings, culture matters because internal auditing is inherently relational and relies on access, candor, cooperation, and the willingness of auditees to engage with findings. Research on auditing organizational culture highlights that culture can be examined, assessed, and audited as a distinct organizational domain, and that cultural patterns can influence the integrity of controls, compliance behavior, and receptivity to audit recommendations (7). At the level of the audit profession, the notion of audit firm culture has been advanced as an explanatory construct for understanding quality variation across audit providers, emphasizing how internalized norms and leadership signals shape professional judgment and performance (8). Translating these insights to internal auditing suggests that the culture of the organization—along with the cultural attributes of oversight functions—may condition how internal audit is staffed, prioritized, protected, and utilized. In practical terms, culture can either strengthen internal audit (by

supporting transparency, accountability, and learning) or weaken it (by encouraging blame avoidance, information withholding, and symbolic compliance). Cultural diagnostics and "cultural audits" have therefore been proposed as holistic approaches to evaluate whether shared norms align with compliance expectations and ethical risk management, implying that cultural assessment can be part of broader governance improvement initiatives (9). At the same time, empirical work indicates that the relationship between organizational culture and auditor-related outcomes can be mediated by commitment-related mechanisms, suggesting that culture influences not only what auditors do, but also how strongly they identify with professional and organizational expectations (10). In listed-company settings, where accountability pressures and reputational stakes are elevated, the alignment between organizational culture and assurance functions becomes a strategic concern, as culture shapes the "tone at the top," the "speak-up climate," and the seriousness with which control deficiencies are addressed.

Alongside culture, professional ethics constitutes a core determinant of audit quality because auditing involves asymmetries of information, judgment under uncertainty, and recurring ethical tensions such as pressure from management, conflicts of interest, and confidentiality boundaries. The literature consistently links ethics-related attributes—particularly independence, objectivity, integrity, and competence—to audit quality outcomes. Evidence suggests that independence, professional ethics, and auditor experience jointly influence audit quality, reinforcing the expectation that ethical orientation is not merely an abstract ideal but a performance-relevant capability (11). Studies in public-sector auditing similarly emphasize determinants of ethical work behavior and show that ethical conduct is shaped by organizational and contextual influences, which underscores that ethics is enacted within institutional environments rather than in isolation (12). Individual-level characteristics can also affect ethical adherence; for example, auditors' personality types and their adherence to professional conduct codes have been discussed as factors that can shape ethical consistency and behavioral compliance with professional requirements (13). More recent findings continue to confirm that objectivity, independence, and professional ethics are significant predictors of audit quality, supporting an integrated view in which ethical principles translate into observable quality outcomes through judgment and behavior (14). In addition, cross-context research has drawn attention to cultural differences and professional norms as shaping auditors' behavior in specialized assurance domains, suggesting that ethics cannot be decoupled from cultural expectations and professional socialization (15). Collectively, these studies motivate the premise that professional ethics is both a direct driver of internal audit quality and a mechanism through which cultural conditions may be converted into stable, quality-enhancing audit behaviors.

An additional layer of the debate concerns the operational mechanisms by which culture and ethics affect internal audit quality, especially through constructs such as internal audit effectiveness, transparency, and organizational commitment. Internal audit effectiveness is often positioned as an antecedent to internal audit quality, reflecting the degree to which internal audit achieves its objectives, provides value, and influences organizational decisions. Empirical models indicate that antecedents and consequences of internal audit effectiveness ultimately map onto internal audit quality, highlighting the importance of linking inputs, process capabilities, and outcomes within a coherent framework (16, 17). A complementary stream examines audit quality through the lens of integrity and transparency, including the growing interest in how digital infrastructures and technologies may condition audit processes and quality. For instance, integrity and internal audit transparency have been shown to influence audit quality, with emerging technologies such as blockchain discussed as potential moderators that can strengthen transparency and trust in audit evidence and reporting (18). At the organizational level, structural and operational factors—such as organizational structure and operating mechanisms—have been empirically associated with audit

quality, indicating that quality emerges from both governance arrangements and operational design choices (19). From a broader assurance and reporting perspective, audit quality also interacts with financial outcomes and risk-related accounting practices; research has examined the association between audit quality and loan loss provisions in banking contexts, reinforcing the relevance of quality to financial discipline and reporting credibility (20). Moreover, evidence indicates that internal audit quality can influence financial reporting quality, strengthening the theoretical claim that internal audit serves as an upstream governance control that shapes downstream reporting outputs (2). More generally, internal control quality and internal governance arrangements can be influenced by historically embedded cultural patterns; for example, “guild culture” has been linked to internal control quality in historical-institutional settings, illustrating how culture can shape control behavior and compliance norms over time (21). These lines of evidence collectively suggest that a rigorous account of internal audit quality requires an integrative model that captures ethical, cultural, and structural determinants and clarifies their pathways to quality.

Notwithstanding the accumulating evidence, several gaps remain that justify further model development and context-specific investigation. First, many studies examine culture or ethics in isolation rather than theorizing and testing their joint and potentially interdependent influence on internal audit quality. Literature reviews on cultural aspects and internal audit effectiveness note that cultural dimensions influence internal audit outcomes through multiple mechanisms, yet operational models that specify hierarchical relationships among cultural and ethical components are still limited (22). Second, although professional ethics has been modeled in auditing contexts, there is a need to better specify its internal structure and prioritize its components to support actionable interventions. Modeling work has sought to identify and structure components affecting professional ethics using interpretive-structural approaches, which can help translate broad ethical constructs into implementable organizational priorities (23). Third, the determinants of internal audit quality may vary across institutional and regulatory environments, including emerging markets and listed-firm contexts where governance reforms and market discipline are still evolving. In Iran’s capital market setting, research has begun to address organizational culture auditing and its implications, but further work is needed to connect these insights to internal audit quality models that can guide managerial action in listed companies (7). Fourth, internal auditors operate under resource and workload constraints that can influence quality through stress and burnout pathways. Evidence from public accounting shows that stress arousal and burnout can mediate role stress effects, which suggests that organizational conditions affecting workload and role stress may indirectly shape audit quality (24). Recent research also links auditors’ workload and audit quality to organizational disclosure outcomes via organizational culture, implying that culture may function as a mediating or enabling mechanism between operational pressures and governance outputs (25). Fifth, internal audit quality has been associated with firm-level outcomes, including financial performance, reinforcing the managerial significance of improving quality as a driver of value creation rather than a compliance-only objective (26). Finally, the internal audit quality construct itself is often treated as an outcome without sufficient emphasis on performance-related cognitive capabilities. For instance, auditors’ critical thinking has been identified as relevant to internal audit performance quality, pointing to the need to consider how professional competencies interface with cultural and ethical infrastructures (27).

Given these considerations, the present study is positioned within a stream of research that seeks to integrate “soft” and “hard” determinants of internal audit quality and to provide a structured model that clarifies causal priority among components. Prior work has proposed models for enhancing internal audit quality using broader supply-chain perspectives of financial reporting, emphasizing that internal audit quality is shaped by multi-actor interactions

and system-level interdependencies, including stakeholders outside the auditing profession (28). Complementary evidence suggests that internal audit quality and governance attributes jointly influence financial reporting quality, reinforcing the need for integrated models that accommodate governance architecture and the social infrastructure of assurance (3, 4). In addition, the general audit-quality literature identifies drivers such as competence, integrity, experience, and organizational commitment, providing a conceptual basis for expecting that professional ethics and culture will systematically shape audit outcomes (11, 29). Building on these foundations, the present research adopts a mixed methodological stance: interpretive-structural modeling is suited to identifying hierarchical relationships and causal ordering among complex, interrelated components, while structural equation modeling supports the empirical testing of direct and mediated paths among the key constructs. This combined logic aligns with the goal of translating complex conceptual relationships into an empirically defensible and practically interpretable framework, particularly in listed-company contexts where internal audit quality is central to governance credibility.

In the specific context of companies listed on the Tehran Stock Exchange, attention to organizational culture and professional ethics is especially consequential. Listed firms operate under higher disclosure demands, stronger reputational exposure, and more direct capital-market discipline, all of which can heighten the cost of audit failures and control weaknesses. Empirical research in this context has already indicated that internal audit quality is relevant to financial reporting quality and that culture can be a salient mediating mechanism connecting audit-related conditions to broader disclosure and governance outcomes (2, 25). Furthermore, Iran-specific research has explicitly targeted the development of an internal audit quality model based on organizational culture and professional ethics, implying that an integrated framework can be grounded in local institutional realities while remaining consistent with international theorizing on audit culture and ethical behavior (30). Recent scholarly attention also stresses the need to conceptualize internal audit quality within a broader, up-to-date synthesis of the literature, indicating that the field is rapidly evolving and benefits from integrative, model-building studies that consolidate dispersed findings into coherent causal structures (1). In this regard, the present article aims to contribute by clarifying which cultural and ethical components function as primary drivers, which act as linkage mechanisms, and which represent dependent outcomes, thereby supporting prioritization for managerial interventions, training, and governance design.

Against this background, the aim of this study is to develop and empirically validate a model of internal audit quality grounded in organizational culture and professional ethics, and to determine the hierarchical relationships, driving factors, and mediating pathways among the model components in companies listed on the Tehran Stock Exchange.

Methods and Materials

This study is considered basic research in terms of addressing the theoretical foundations of the effect of organizational culture and professional ethics on internal audit quality and in explaining a model of internal audit quality. In addition, due to the provision of practical recommendations, it is also classified as applied research. Therefore, this research can be described as basic–applied in nature. In terms of research orientation, the present study is exploratory, as it addresses an issue that has not previously been examined in this manner or at this level of depth. Accordingly, a mixed-methods approach was employed, the purpose of which is to integrate qualitative and quantitative research methods to achieve an appropriate methodology for fulfilling the research objectives. In exploratory research designs, the researcher seeks to explore an ambiguous or insufficiently understood situation. To this end, qualitative data are first collected. This stage enables the researcher to describe numerous dimensions

of the phenomenon under investigation. Based on this initial identification, the required components for model development are provided to the researcher. Subsequently, the research model is developed using Interpretive Structural Modeling (ISM). In the next step, based on the preliminary model obtained, the research hypotheses are formulated, and a questionnaire is constructed by the researcher using items extracted from the initial expert interviews. The questionnaire is then distributed within the statistical population, and after data collection, the results are analyzed using Structural Equation Modeling (SEM).

The experts in this study consisted of the heads of audit committees of companies listed on the Tehran Stock Exchange who held either a doctoral or a master's degree and had a minimum of ten years of professional experience in accounting and auditing. Sampling continued until no new findings emerged from the interviews, indicating theoretical saturation. At this stage, saturation was achieved after 15 interviews. The statistical population in the quantitative phase included all accountants, internal auditors, managers, and senior executives of companies listed on the Tehran Stock Exchange; the size of this population was unknown. Therefore, based on the Krejcie and Morgan table, a sample of 384 participants was selected. Anticipating that some questionnaires might not be completed correctly or returned, 390 questionnaires were distributed to ensure the availability of 384 valid responses. After data collection, 384 questionnaires were deemed usable, yielding a response rate of 98%.

Findings and Results

In this study, the Content Validity Ratio (CVR), Interpretive Structural Modeling (ISM), and Structural Equation Modeling (SEM) were employed, which are explained step by step below.

Step 1: Identification of Components Related to the Problem

First, based on the research topic, an open-ended questionnaire was developed and administered to the experts, who were asked to identify the components necessary for model design from their perspectives. Through the analysis of the collected interviews, 11 components were identified. To confirm these components, the Content Validity Ratio (CVR) was used. All 11 components were approved by the experts. Therefore, these 11 components were used for model development. The results of the CVR analysis are presented in Table 1.

Table 1. CVR Values of the Components (Expert Selection)

No.	Components	CVR	Result
1	Adherence to professional standards	1.00	Approved
2	Professional conduct and performance	1.00	Approved
3	Competence	1.00	Approved
4	Independence and objectivity	1.00	Approved
5	Confidentiality	1.00	Approved
6	Integrity	1.00	Approved
7	Commitment to organizational regulations	1.00	Approved
8	Acceptance of organizational values	1.00	Approved
9	Adaptability and flexibility	1.00	Approved
10	Commitment to participation	1.00	Approved
11	Internal audit quality	1.00	Approved

Step 2: Formation of the Structural Self-Interaction Matrix (SSIM)

After identifying the components, another questionnaire in matrix format was designed. The experts examined the components pairwise and determined the relationships among them using the following symbols:

V: Component *i* influences component *j*

A: Component *j* influences component *i*

X: Components *i* and *j* influence each other

O: No relationship exists between components *i* and *j*

The collected information was summarized based on the ISM methodology, and the Structural Self-Interaction Matrix (SSIM) was constructed from the research indicators by comparing them using the four conceptual relationship states. The logic of ISM operates on the mode of frequencies. The results of the expert questionnaires for the studied components are presented in Table 2.

Table 2. Structural Self-Interaction Matrix (SSIM)

No.	Components	1	2	3	4	5	6	7	8	9	10	11
1	Adherence to professional standards	—	X	V	V	V	V	V	V	V	V	V
2	Professional conduct and performance			V	V	V	V	V	V	V	V	
3	Competence			X	V	V	V	V	V	V		
4	Independence and objectivity					V	V	V	V	V	V	
5	Confidentiality					X	V	V	V	V	V	
6	Integrity							V	V	V	V	
7	Commitment to organizational regulations							X	V	V	V	
8	Acceptance of organizational values									V	V	V
9	Adaptability and flexibility										V	V
10	Commitment to participation											V
11	Internal audit quality											

Step 3: Construction of the Initial Reachability Matrix

The initial reachability matrix is obtained by converting the Structural Self-Interaction Matrix into a binary matrix (0–1). In order to replace the four symbols in Table 2 with zeros and ones, the following rules are applied to extract the initial reachability matrix (Warfield, 1974):

– If the entry *(i, j)* in the SSIM is V, then the entry *(i, j)* in the initial reachability matrix is 1 and the entry *(j, i)* is 0.

– If the entry *(i, j)* in the SSIM is A, then the entry *(i, j)* in the initial reachability matrix is 0 and the entry *(j, i)* is 1.

– If the entry *(i, j)* in the SSIM is X, then the entry *(i, j)* in the initial reachability matrix is 1 and the entry *(j, i)* is 1.

– If the entry *(i, j)* in the SSIM is O, then the entry *(i, j)* in the initial reachability matrix is 0 and the entry *(j, i)* is 0.

Table 3. Initial Reachability Matrix

No.	Components	1	2	3	4	5	6	7	8	9	10	11
1	Adherence to professional standards	1	1	1	1	1	1	1	1	1	1	1
2	Professional conduct and performance	1	1	1	1	1	1	1	1	1	1	1
3	Competence	0	0	1	1	1	1	1	1	1	1	1
4	Independence and objectivity	0	0	1	1	1	1	1	1	1	1	1
5	Confidentiality	0	0	0	0	1	1	1	1	1	1	1
6	Integrity	0	0	0	0	1	1	1	1	1	1	1
7	Commitment to organizational regulations	0	0	0	0	0	0	1	1	1	1	1
8	Acceptance of organizational values	0	0	0	0	0	0	1	1	1	1	1
9	Adaptability and flexibility	0	0	0	0	0	0	0	0	1	1	1
10	Commitment to participation	0	0	0	0	0	0	0	0	0	1	1
11	Internal audit quality	0	0	0	0	0	0	0	0	0	0	1

Step 4: Construction of the Final Reachability Matrix

After obtaining the initial reachability matrix, the secondary relationships among the components are examined. A secondary relationship exists when component *i* leads to component *j*, and component *j* leads to component *k*; therefore, component *i* also leads to component *k* (Warfield, 1974). If this condition is not satisfied in the initial reachability matrix, the matrix must be revised and the omitted relationships must be incorporated. This process is referred to as transitivity enforcement. In this step, all secondary relationships among the components were

examined; however, no secondary relationships were identified. Therefore, the initial reachability matrix was considered the final reachability matrix. This matrix also presents the driving power and dependence power of each component. Driving power is obtained from the sum of the components influenced by a given component, including the component itself, while dependence power is derived from the sum of the components that influence a given component, including the component itself (Attri, Dev, & Sharma, 2013). Table 4 presents the final reachability matrix.

Table 4. Final Reachability Matrix

No.	Components	1	2	3	4	5	6	7	8	9	10	11	Driving Power
1	Adherence to professional standards	1	1	1	1	1	1	1	1	1	1	1	11
2	Professional conduct and performance	1	1	1	1	1	1	1	1	1	1	1	11
3	Competence	0	0	1	1	1	1	1	1	1	1	1	9
4	Independence and objectivity	0	0	1	1	1	1	1	1	1	1	1	9
5	Confidentiality	0	0	0	0	1	1	1	1	1	1	1	7
6	Integrity	0	0	0	0	1	1	1	1	1	1	1	7
7	Commitment to organizational regulations	0	0	0	0	0	0	1	1	1	1	1	5
8	Acceptance of organizational values	0	0	0	0	0	0	1	1	1	1	1	5
9	Adaptability and flexibility	0	0	0	0	0	0	0	0	1	1	1	3
10	Commitment to participation	0	0	0	0	0	0	0	0	0	1	1	2
11	Internal audit quality	0	0	0	0	0	0	0	0	0	0	1	1
Dependence	2	2	4	4	6	6	8	8	9	10	11	—	

Step 5: Determination of Relationships and Level Partitioning of Components

In this step, using the reachability matrix, the reachability set and antecedent set for each component are identified, and their intersection is determined.

– The reachability set of a component includes the component itself and the components it influences, which are identified by the ones in the corresponding row.

– The antecedent set of a component includes the component itself and the components that influence it, which are identified by the ones in the corresponding column.

After determining these sets, their intersection is calculated for each component. Components whose reachability set and intersection set are identical are positioned at the highest level of the ISM hierarchy (Warfield, 1974). To identify the elements of the next level, the components of the current highest level are removed from the matrix, and the same procedure is repeated. This process continues until all hierarchical levels of the system are determined.

Table 5. Level Partitioning of Components Based on the Final Reachability Matrix (Iteration 1)

Component	Reachability Set	Antecedent Set	Intersection Set	Level
1	11,10,9,8,7,6,5,4,3,2,1	2,1	2,1	—
2	11,10,9,8,7,6,5,4,3,2,1	2,1	2,1	—
3	11,10,9,8,7,6,5,4,3	4,3,2,1	4,3	—
4	11,10,9,8,7,6,5,4,3	4,3,2,1	4,3	—
5	11,10,9,8,7,6,5	6,5,4,3,2,1	6,5	—
6	11,10,9,8,7,6,5	6,5,4,3,2,1	6,5	—
7	11,10,9,8,7	8,7,6,5,4,3,2	8,7	—
8	11,10,9,8,7	8,7,6,5,4,3,2	8,7	—
9	11,10,9	9,8,7,6,5,4,3,2,1	9	—
10	11,10	10,9,8,7,6,5,4,3,2,1	10	—
11	11	11,10,9,8,7,6,5,4,3,2,1	11	1

As shown in Table 5, Component 11 is positioned at **Level 1** and is removed for the next iteration. The remaining iterations are summarized in Table 6.

Table 6. Level Partitioning of Components Based on the Final Reachability Matrix (Subsequent Iterations)

Iteration	Component	Reachability Set	Antecedent Set	Intersection Set	Level
2	10	10	10,9,8,7,6,5,4,3,2,1	10	2
3	9	9	9,8,7,6,5,4,3,2,1	9	3
4	7	8,7	8,7,6,5,4,3,2	8,7	4
	8	8,7	8,7,6,5,4,3,2	8,7	4
5	5	6,5	6,5,4,3,2,1	6,5	5
	6	6,5	6,5,4,3,2,1	6,5	5
6	3	4,3	4,3,2,1	4,3	6
	4	4,3	4,3,2,1	4,3	6
7	1	2,1	2,1	2,1	7
	2	2,1	2,1	2,1	7

Finally, as indicated in Table 6, Components 1 and 2 were positioned at Level 7, and the level partitioning process was completed.

Step 6: Drawing the Final Model

At this stage, based on the levels of the components and the final reachability matrix, a preliminary model was drawn; then, by removing transitive links from the preliminary model, the final model was developed. Accordingly, the final ISM model—resulting from the development of an internal audit quality model grounded in organizational culture and professional ethics—was designed. After the model was developed, it was reviewed by the panel of experts, and following agreement between the researcher and the experts, the research model was presented as the final model of the study, as shown in Figure 1.

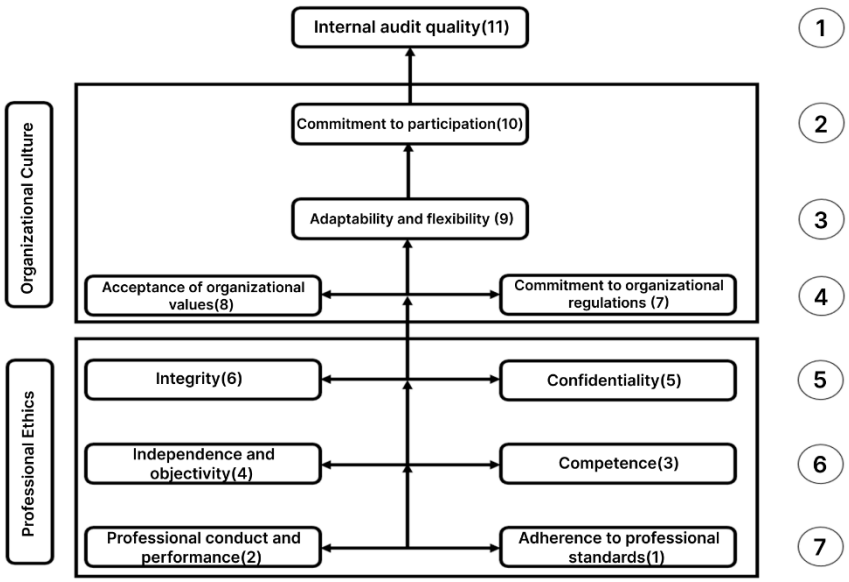

Figure 1. Final Research Model

Step 7: Analysis of Driving Power and Dependence (MICMAC Diagram)

In this stage, the indicators are classified into four groups. The first group comprises autonomous indicators (Quadrant 1), which have weak driving power and weak dependence. These indicators are relatively disconnected from the other indicators and exhibit limited relationships. The second group includes dependent indicators (Quadrant 2), which have weak driving power but high dependence. The third group consists of linkage indicators

(Quadrant 3). These indicators have both high driving power and high dependence; in practice, any intervention on these indicators results in changes in other indicators. The fourth group comprises independent indicators (Quadrant 4). These indicators have high driving power and low dependence. Indicators with high driving power are typically referred to as key indicators, and it is evident that such indicators fall within either the independent or linkage groups. Driving power and dependence are obtained by summing the “1” entries in each row and each column, respectively; based on these values, the driving–dependence diagram is plotted (Attri, Dev, & Sharma, 2013).

Using the data obtained from Step 4, the studied indicators can be classified into the following four categories according to each indicator’s driving power over other indicators and its dependence on other indicators (Godet, 2006):

1. **Autonomous:** Indicators with the lowest dependence and the lowest driving power relative to other indicators.
2. **Dependent:** Indicators with high dependence on other indicators.
3. **Linkage:** Indicators that have a bidirectional relationship with other indicators.
4. **Independent (Driving):** Indicators that exert a substantial influence on other indicators.

To determine the coordinates of each indicator in the MICMAC matrix, its driving power and dependence values must be used. These values are derived from the final reachability matrix. Table 7 presents the driving power and dependence of each indicator.

Table 7. Driving Power and Dependence of Each Component

No.	Components	Dependence	Driving Power
1	Adherence to professional standards	2	11
2	Professional conduct and performance	2	11
3	Competence	4	9
4	Independence and objectivity	4	9
5	Confidentiality	6	7
6	Integrity	6	7
7	Commitment to organizational regulations	8	5
8	Acceptance of organizational values	8	5
9	Adaptability and flexibility	9	3
10	Commitment to participation	10	2
11	Internal audit quality	11	1

Based on the component coordinates presented in Table 7, the MICMAC matrix is constructed.

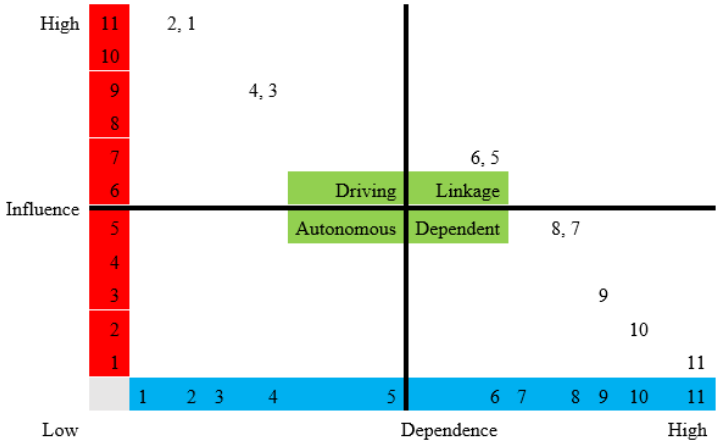

Figure 2. MICMAC Matrix

The MICMAC matrix indicates that Components 7, 8, 9, 10, and 11 fall within the dependent quadrant, meaning they have low driving power but high dependence on the other components. Components 1, 2, 3, and 4 fall within the driving (independent) quadrant; these components have high driving power with minimal dependence. Components 5 and 6 are located in the linkage quadrant, indicating that although their driving power is relatively high, their dependence is also high. At this point, the ISM process was completed.

In this section, the structural model of the study is fitted in order to test and examine the relationships among the variables of the main model. This model is presented in the following figure.

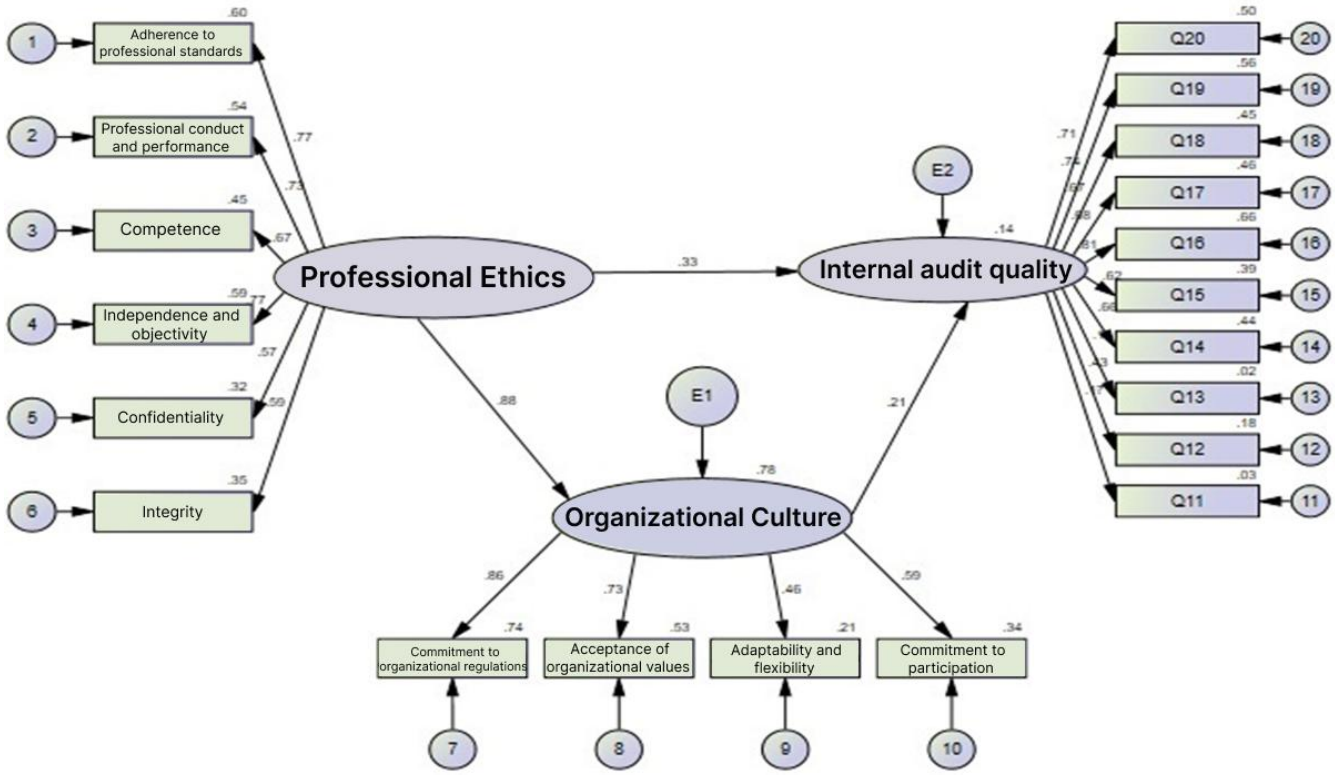

Figure 3. Structural Model of the Study

Based on the results of the study's structural model, the findings of the path analysis for the research hypotheses are reported below. To examine the hypotheses, the statistical significance of the simultaneous relationships among variables must be assessed. For the mediating role of a variable to be significant in the relationship between two other variables, the relationships among the variables must be simultaneously significant. More specifically, if the mediating role of *y* in the relationship between *z* and *x* is considered, the simultaneous significance of the relationship between *y* and *x*, as well as the relationship between *z* and *y*, must be confirmed (Baron & Kenny, 1986). Table 8 presents the path analysis coefficients among the research variables.

Table 8. Path Analysis Among the Model Variables

Path	Standardized Coefficient	Standard Deviation	t-value	p-value
Professional ethics → Organizational culture	0.885	0.116	8.875	0.000
Professional ethics → Internal audit quality	0.334	0.074	6.148	0.000
Organizational culture → Internal audit quality	0.214	0.078	4.410	0.000

According to the results in Table 8, the effect of professional ethics on organizational culture is 0.885, which is positive, and its significance level is 0.000, which is less than 0.05. Therefore, at the 95% confidence level, professional ethics has a positive and statistically significant effect on organizational culture. It can be stated that as professional ethics increases, organizational culture increases. In addition, the effect of professional ethics on internal audit quality is 0.334, which is positive, and its significance level is 0.000, which is less than 0.05. Therefore, at the 95% confidence level, professional ethics has a positive and statistically significant effect on internal audit quality. It can be stated that as professional ethics increases, internal audit quality increases. Moreover, the effect of organizational culture on internal audit quality is 0.214, which is positive, and its significance level is 0.000, which is less than 0.05. Therefore, at the 95% confidence level, organizational culture has a positive and statistically significant effect on internal audit quality. It can be stated that as organizational culture increases, internal audit quality increases.

Discussion and Conclusion

The findings of the present study provide strong empirical support for the central proposition that professional ethics and organizational culture are fundamental drivers of internal audit quality in companies listed on the Tehran Stock Exchange. The structural equation modeling results demonstrated that professional ethics exerts a substantial and statistically significant effect on organizational culture ($\beta = 0.885$, $p < .001$), confirming that ethical orientation is a powerful mechanism shaping shared norms, values, and behavioral expectations within organizations. This result aligns closely with the conceptual arguments advanced in the audit-quality literature, which emphasize that ethical infrastructures are not merely individual attributes but become embedded within organizational routines and cultural patterns (8, 12). The magnitude of this relationship indicates that when organizations systematically reinforce ethical standards—through leadership example, codes of conduct, and professional socialization—these norms are internalized and transformed into enduring cultural characteristics that influence day-to-day organizational functioning. This is consistent with findings that link ethical behavior of auditors with organizational context and culture, highlighting that ethics serves as a foundation for sustainable audit effectiveness (11, 13).

In addition, professional ethics was found to have a direct, positive, and statistically significant impact on internal audit quality ($\beta = 0.334$, $p < .001$). This outcome confirms that ethical principles such as integrity, independence, objectivity, and professional competence directly translate into higher-quality internal audit outputs. Prior empirical studies have repeatedly documented similar associations, indicating that auditors' adherence to ethical norms improves judgment quality, reduces opportunistic behavior, and enhances stakeholder trust (14, 18, 29). The present findings extend this evidence within the specific institutional environment of Iranian listed firms, reinforcing that ethical orientation is not culturally neutral but remains a robust determinant of audit quality across diverse regulatory and organizational contexts. These results also corroborate the broader argument that professional ethics functions as a core intangible asset for assurance functions, shaping not only individual auditor conduct but also organizational-level assurance credibility (1).

Organizational culture itself demonstrated a significant positive effect on internal audit quality ($\beta = 0.214$, $p < .001$), providing direct empirical support for the view that internal audit quality is deeply embedded within the social and normative fabric of the organization. This finding is consistent with earlier research showing that organizational culture influences auditors' commitment, cooperation, and professional behavior, thereby shaping audit outcomes

(7, 10). The present study adds to this stream of literature by explicitly modeling culture as a mediating mechanism through which professional ethics influences internal audit quality. This mediating role highlights that ethical standards achieve their strongest impact on audit quality when they are institutionalized within organizational culture, rather than remaining confined to individual moral commitments. Such results mirror international evidence suggesting that audit firm culture and organizational norms significantly condition the consistency and reliability of audit judgments and processes (8, 9).

The hierarchical structure generated by the ISM analysis further deepens understanding of how these constructs interact. Components related to professional ethics—including adherence to professional standards, professional conduct and performance, competence, independence and objectivity—emerged as the most influential driving factors in the system. These findings reflect long-standing theoretical positions that identify professional competence and independence as the backbone of audit quality (11, 29). At the same time, cultural components such as commitment to organizational regulations, acceptance of organizational values, adaptability, and participation commitment were located in more dependent positions within the model, suggesting that culture largely evolves as a response to ethical and professional infrastructures established by leadership and professional governance. This structural ordering resonates with earlier work indicating that organizational structures and operational mechanisms shape audit quality indirectly through cultural and behavioral channels (17, 19).

The MICMAC analysis also revealed that internal audit quality itself belongs to the most dependent category, meaning that it is highly sensitive to upstream changes in ethical and cultural conditions. This dependency pattern provides an important managerial insight: sustainable improvements in audit quality cannot be achieved solely through technical adjustments (e.g., procedures, checklists, standards) but require systematic investment in professional ethics and organizational culture. Similar conclusions appear in prior studies demonstrating that internal audit quality is strongly conditioned by broader governance and control environments (3, 4). Moreover, research linking audit quality to financial reporting quality and disclosure further supports the view that internal audit quality is an emergent property of integrated governance systems rather than an isolated operational function (2, 25).

The mediating role of organizational culture found in this study is particularly significant. It suggests that ethical initiatives yield maximal benefit for internal audit quality only when they are translated into shared organizational practices and values. This finding complements recent evidence that cultural conditions moderate the relationship between auditors' workload, audit quality, and organizational disclosure outcomes, underscoring the importance of cultural context for sustaining quality under operational pressures (24, 25). Furthermore, the present findings align with emerging international research indicating that cultural differences and professional norms shape auditors' behavior and ethical reasoning, especially in complex or environmentally sensitive audit contexts (15).

Collectively, these results advance the audit-quality literature by integrating ethical, cultural, and structural dimensions into a coherent explanatory model. While previous studies have addressed internal audit effectiveness and its consequences (16, 17), the present research clarifies how ethical and cultural infrastructures function as primary antecedents that ultimately determine the quality of internal audit. This integrative perspective is consistent with comprehensive literature syntheses that emphasize the multidimensional and systemic nature of internal audit quality (1).

Despite the robustness of the findings, several limitations should be acknowledged. First, the study relied on self-reported survey data, which may be affected by common method bias and social desirability effects. Second, the

cross-sectional design limits causal inference and does not capture the dynamic evolution of organizational culture and ethical climates over time. Third, the study focused exclusively on firms listed on the Tehran Stock Exchange, which may restrict the generalizability of the findings to other institutional or regulatory environments.

Future studies could employ longitudinal designs to examine how changes in professional ethics and organizational culture influence internal audit quality over time. Comparative studies across different countries or regulatory systems would also help clarify the extent to which the proposed model is context-dependent. Additionally, qualitative research could enrich understanding of how ethical and cultural mechanisms are enacted in daily internal audit practices.

Organizations should invest systematically in strengthening professional ethics through training, leadership modeling, and clear ethical governance structures. At the same time, they should cultivate supportive organizational cultures that reinforce transparency, participation, and accountability. Integrating ethical standards into performance evaluation systems and organizational policies can further institutionalize high-quality internal audit practices and enhance overall governance effectiveness.

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Authors' Contributions

All authors equally contributed to this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

All ethical principles were adheried in conducting and writing this article.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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