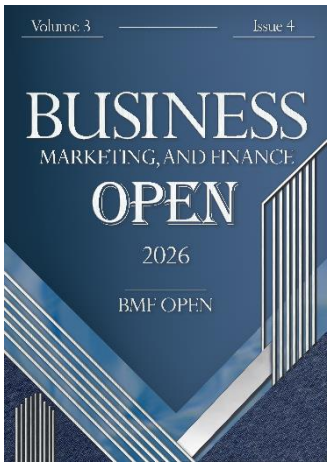
# A Comparative Analysis of the Role of Audit Partners in Preventing Material Misstatements Arising from Fraud in Financial Statements: A Grounded Theory Study in Iran and Iraq

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**Abstract:** The purpose of this article is to provide a comparative analysis of the role of audit partners in preventing material misstatements arising from fraud in financial statements, with a specific focus on Iran and Iraq. Adopting a qualitative approach and employing the grounded theory methodology, this study seeks to address an existing gap in the literature through in-depth semi-structured interviews with experienced audit partners in Iran and Iraq. The findings indicate that audit partners in both countries face a set of common challenges—albeit with differing intensity and manifestations. The most significant factors undermining their independence and effectiveness include: (1) managerial pressures and occupational threats, (2) financial dependence and concentration within the audit market, (3) weaknesses in regulatory and legal oversight structures, (4) shortages of technological infrastructure and auditing tools, and (5) the lack of effective inter-organizational communication and continuous professional training. In Iran, the supervisory system exhibits relatively greater coherence but is influenced by institutional and economic relationships; whereas in Iraq, severe infrastructural deficiencies, political instability, and the absence of independent oversight bodies substantially amplify both the scope and intensity of these threats. The conceptual model derived from data analysis identifies six principal threats to the independence and performance quality of audit partners. In addition to the five classical threats recognized in the IFAC/IESBA framework, the model introduces "technological threat" as an emerging dimension in environments characterized by low levels of digital maturity. The results demonstrate that without reforming oversight structures, investing in advanced auditing technologies, and strengthening a professional culture grounded in independence, the role of audit partners in preventing fraud-related misstatements will be seriously constrained. The innovation of this study lies in its focus on gaps in the existing literature and in developing, for the first time, a localized model of threats and influencing mechanisms affecting audit partner performance in two countries with differing institutional and technological contexts. This model can serve as a foundation for designing policies aimed at enhancing audit quality and reducing the risk of financial fraud at the regional level.

**Keywords:** Audit partners, material misstatement, financial statement fraud

## 1. Introduction

In recent decades, educational systems across the world have been confronted with an unprecedented convergence of social, economic, technological, and environmental pressures that have fundamentally reshaped the conditions under which schools operate. Global crises such as pandemics, economic instability, armed conflict, forced migration, digital disruption, and climate-related hazards have intensified the vulnerability of educational institutions while simultaneously heightening expectations regarding their capacity to ensure continuity, equity, and quality of learning. Within this context, the concept of *school resilience* has emerged as a central analytical and policy-oriented construct, referring not merely to the ability of schools to withstand shocks, but to their capacity to adapt, transform, and sustain positive educational outcomes under conditions of chronic stress and acute disruption [1, 2]. Resilient schools are increasingly understood as dynamic systems in which leadership, organizational culture, professional capacity, and external support mechanisms interact to mitigate risk and foster long-term stability.

Early research on resilience in education largely focused on individual students who achieved academic success despite exposure to adversity, poverty, or discrimination. Seminal work in this tradition highlighted personal traits, coping strategies, and protective factors that enabled learners to persist in challenging contexts [3, 4]. Over time, however, scholars began to question deficit-oriented explanations that implicitly placed responsibility for resilience on individuals while neglecting the structural and institutional conditions shaping educational experiences. This shift gave rise to a systems-oriented perspective, emphasizing that resilience is co-produced through interactions between individuals and their educational environments [5]. Consequently, attention has increasingly turned toward schools themselves as organizational units capable of either amplifying vulnerability or functioning as protective ecosystems.

From an institutional standpoint, resilient schools are characterized by their ability to maintain instructional quality, student engagement, and organizational coherence despite external shocks and internal constraints. Empirical studies across diverse national contexts have demonstrated that school-level factors—such as leadership practices, resource allocation, teacher collaboration, and governance arrangements—play a decisive role in shaping resilience outcomes [6, 7]. In this regard, resilience is not a static attribute but an emergent property of organizational processes that evolve over time in response to contextual demands. Schools operating in disadvantaged or high-risk environments may thus display markedly different resilience trajectories depending on how effectively they mobilize internal capacities and external supports.

Leadership has been consistently identified as a cornerstone of school resilience. Principals and senior administrators influence resilience both directly, through decision-making under pressure, and indirectly, by shaping school culture, professional norms, and relational trust. Comparative evidence suggests that resilient school leaders tend to exhibit adaptive leadership styles, distributed decision-making, and a strong commitment to professional learning and collaboration [1, 8]. Such leaders are more likely to foster environments in which teachers feel supported, empowered, and capable of responding creatively to adversity. Conversely, rigid leadership structures and centralized control mechanisms may exacerbate stress and undermine institutional resilience, particularly in times of crisis.

Teachers constitute another critical pillar of resilient schools. The literature on teacher resilience underscores the reciprocal relationship between individual and organizational resilience: resilient teachers contribute to school stability, while supportive school environments enhance teachers' capacity to cope with stress and maintain

instructional effectiveness [9]. Research has shown that professional development, peer collaboration, and access to psychosocial support are key factors enabling teachers to sustain motivation and performance in challenging contexts. In resilient schools, these elements are often institutionalized through formal mentoring systems, collaborative planning structures, and ongoing reflective practice [10].

Beyond leadership and teaching capacity, organizational structures and policy frameworks significantly shape school resilience. Studies conducted in both developed and developing contexts reveal that schools embedded within coherent policy environments—characterized by clear accountability mechanisms, stable funding, and aligned support services—are better positioned to absorb shocks and adapt to change [7, 11]. Conversely, fragmented governance systems, policy volatility, and weak inter-organizational coordination can undermine resilience by creating uncertainty and limiting schools' strategic autonomy. This is particularly evident in contexts marked by socioeconomic inequality or political instability, where schools often face overlapping and persistent stressors.

Recent scholarship has further expanded the scope of resilience research by incorporating the transformative impact of digitalization on educational institutions. Digital technologies have introduced new opportunities for enhancing learning continuity, data-driven decision-making, and stakeholder communication, while simultaneously generating novel risks related to inequality, infrastructure deficits, and organizational readiness. Evidence from higher education and school systems alike suggests that digital transformation can act as both a resilience enabler and a resilience stressor, depending on institutional capacity and contextual conditions [12]. Resilient schools are thus increasingly defined by their ability to integrate technological innovation in ways that support pedagogical goals and organizational coherence rather than exacerbating existing vulnerabilities.

The intersection of resilience with equity and inclusion has also received growing attention. Comparative analyses using large-scale datasets indicate that resilient schools often succeed in mitigating the negative effects of socioeconomic disadvantage on student outcomes by providing targeted academic support, fostering inclusive school climates, and maintaining high expectations for all learners [6, 13]. Qualitative studies further highlight the importance of culturally responsive practices and community engagement in strengthening resilience among marginalized student populations [5, 14]. These findings challenge simplistic narratives that equate resilience with exceptionalism, instead positioning it as an outcome of deliberate institutional strategies aimed at promoting educational justice.

Policy-oriented research has increasingly emphasized the need for systemic interventions to build and sustain resilient schools. Crisis intervention programs, counseling services, and mentoring initiatives have been shown to enhance schools' capacity to respond to trauma and disruption, particularly in communities affected by violence, displacement, or chronic poverty [4, 10]. At the same time, scholars caution that resilience-building efforts must avoid becoming substitutes for structural reform, as excessive reliance on resilience discourse may inadvertently normalize adversity and shift responsibility away from policymakers [3]. Effective resilience policies therefore require a balance between empowering schools at the local level and addressing systemic inequities at higher levels of governance.

International comparative studies provide further insight into how contextual variation shapes resilience pathways. Research conducted across European, Asian, and post-Soviet education systems demonstrates that resilience is influenced not only by school-level practices but also by national traditions of educational governance, accountability, and professional autonomy [1, 11]. In centralized systems, resilience may depend heavily on policy coherence and state support, whereas in more decentralized contexts, school leadership and community

engagement play a more pronounced role. These differences underscore the importance of context-sensitive models of resilience that move beyond one-size-fits-all prescriptions.

Despite the growing body of literature, several gaps remain. First, much of the existing research has focused either on student resilience or on macro-level policy analysis, with comparatively less attention devoted to the organizational dynamics that enable schools as institutions to function resiliently over time. Second, empirical studies often examine isolated components of resilience—such as leadership, teacher well-being, or digital capacity—without integrating these elements into a comprehensive conceptual framework. Third, there is a relative scarcity of studies that synthesize insights from diverse methodological traditions, including systematic reviews, qualitative inquiry, and comparative analysis, to generate a holistic understanding of resilient schools [2, 15]. Addressing these gaps is essential for advancing both theory and practice in the field.

In response to these challenges, recent systematic and conceptual works have called for multidimensional models of school resilience that explicitly link contextual factors, organizational processes, and educational outcomes [7, 15]. Such models emphasize that resilience emerges from the interaction of internal capacities—such as leadership, professional expertise, and organizational culture—with external conditions, including policy environments, community resources, and crisis exposure. Importantly, they highlight that resilience is not an endpoint but an ongoing process of learning, adaptation, and transformation.

Against this backdrop, the present study is situated within the expanding interdisciplinary discourse on resilient schools and seeks to contribute to the literature by integrating insights from educational leadership, organizational theory, and resilience research. By drawing on a comprehensive body of prior studies and adopting a systemic perspective, the study aims to move beyond fragmented explanations and offer a more coherent understanding of how resilience is constructed and sustained within educational institutions operating under diverse and often adverse conditions.

The aim of this study is to examine and synthesize the key organizational, leadership, professional, and contextual factors that contribute to the development and sustainability of resilient schools.

## 2. Methodology

The present study was conducted with the aim of comparatively analyzing the role of audit partners in preventing material misstatements arising from fraud in financial statements in Iran and Iraq, within the interpretivist paradigm and using a qualitative approach. The research method employed was grounded theory based on the systematic version developed by Strauss and Corbin (2008, 2015). The selection of this approach was grounded in four interrelated and logical considerations: (1) the exploratory nature of the research question and the absence of a localized and integrated model capable of explaining audit partners' decision-making mechanisms across different institutional contexts; (2) limited access to reliable quantitative data that could comprehensively and behaviorally capture internal processes, negotiations, and motivations of audit partners—data that are typically not disclosed in public archival documents and can only be identified through in-depth engagement with key actors; (3) the necessity of developing a generalizable theory—not at a large statistical level, but at a conceptual and explanatory level—emerging from the lived experiences of experts and capable of elucidating causal mechanisms across diverse contexts; and (4) the capacity to employ theoretical sampling and progressively deepen analysis until conceptual saturation is achieved, which represents a core advantage of grounded theory for generating mid-range theories in underexplored domains.

Within this framework, semi-structured interviews with audit partners, audit committee chairs, and financial managers were employed as the primary source of qualitative data. In parallel, a structured questionnaire was used for sample screening and classification and for collecting contextual indicators (e.g., firm size, client ownership type, and local regulatory indices), thereby enabling data triangulation and analytical depth. Accordingly, the questionnaire was not utilized as a purposive quantitative analytical instrument, but rather as a complementary tool for targeted sample selection and for providing an informational context to support the interpretation of qualitative findings. Data analysis was conducted through open, axial, and selective coding, and continued until theoretical saturation was reached, allowing patterns, causal relationships, and latent decision-making mechanisms of audit partners within each institutional context to be identified and theorized.

Ultimately, the integration of in-depth interviews and contextual questionnaires, combined with theoretical sampling and grounded theory analysis, enables the study to construct a theory grounded in empirical evidence derived from professional experience, while simultaneously benefiting from triangulation to enhance the validity and trustworthiness of the findings.

The study population consisted of active audit partners with a minimum of ten years of professional experience and direct involvement in signing audit reports for joint-stock companies or public-sector entities in Iran and Iraq. Sampling began purposively and subsequently continued in accordance with the principles of theoretical sampling in grounded theory; that is, following the coding of each interview, emerging theoretical needs determined the selection of subsequent participants (for example, partners with experience of high managerial pressure, partners with professional experience in both countries, partners active in Iraq's public sector, or partners from smaller audit firms to examine structural differences).

In total, 28 in-depth semi-structured interviews were conducted (16 interviews in Iran and 12 interviews in Iraq). Theoretical saturation was precisely observed beginning with the twenty-fifth interview; specifically, from the twenty-fifth to the twenty-eighth interviews, no new initial codes, concepts, or theoretical relationships emerged, and all newly collected data could be classified within existing categories. Nevertheless, to ensure category stability and robustness, sampling continued until the twenty-eighth interview, with the final three interviews serving a confirmatory role (confirmatory interviews).

To enhance data heterogeneity and increase the transferability of findings, partners from large audit firms, as well as medium-sized and small firms, were included in the study. In addition, partners with prior collaboration experience with regulatory bodies, national audit organizations, or corporate audit committees were also incorporated into the sample.

Data were collected through in-depth semi-structured interviews, each lasting between 45 and 90 minutes depending on participants' experience level, scope of involvement in audit engagements, openness in responding, and the complexity of the issues discussed. This variation in interview duration reflects the fact that some participants—particularly senior partners in large firms or those concurrently active in both Iran and Iraq—were inclined to provide more detailed accounts of their experiences, whereas others conducted shorter interviews due to time constraints, working conditions, security concerns, or professional sensitivities. Such a time range is entirely typical in professional, grounded theory–based qualitative research and reflects the flexibility of the interview process in following emerging theoretical directions.

Given the geographical and security conditions in Iraq, interviews were conducted and recorded using a combination of face-to-face and online formats. The interview guide was developed following an extensive literature review and consultation with three faculty members specializing in qualitative research methods, and

was refined through three pilot phases to ensure that the questions simultaneously allowed creative expression and free narration of participants' lived experiences while adequately covering the core thematic dimensions of the study. These dimensions included the role of the audit partner, professional independence, managerial pressures, oversight mechanisms, applied technologies, and institutional differences between Iran and Iraq. In addition to interviews, a set of internal firm documents (within permissible and confidential boundaries), published regulatory reports, and the researcher's field notes were utilized as supplementary data sources to enrich the analysis.

Data analysis was conducted concurrently with data collection and followed the three stages of systematic coding. During open coding, more than 1,800 initial codes were extracted and preliminary concepts were developed (e.g., "covert managerial pressure," "financial dependence on a major client," and "weakness of auditing technological infrastructure"). In axial coding, codes were organized around core categories, and causal, contextual, intervening conditions, strategies, and consequences were identified. At this stage, six main categories emerged: "institutional pressures and threats," "structural and regulatory weaknesses," "technological threat," "professional independence," "partner experience and competence," and "professional and ethical culture." In selective coding, the central category—"multilayered threats to the independence and effectiveness of audit partners in preventing material misstatements arising from fraud"—was identified, and the final paradigmatic model was developed, illustrating the dynamic interaction among these threats and their consequences for financial reporting quality. To enhance analytical rigor, techniques such as simultaneous coding, code relationship matrices, scaling coding (to assess the intensity of selected concepts), and methodological triangulation (combining interview data, documents, systematic literature review, and expert focus group sessions) were employed.

The credibility and reliability of the findings were established based on the criteria proposed by Lincoln and Guba (1985, 2013):

- Credibility was ensured through member checking, triangulation of data sources and methods, and prolonged engagement with the data;
- Transferability was enhanced by providing thick description of the research context and participants;
- Dependability and confirmability were achieved through maintaining a comprehensive audit trail, employing two independent coders, and applying a devil's advocate approach during analytical sessions.

All stages of the study were conducted in full compliance with ethical principles, including obtaining informed consent, ensuring confidentiality of identities and data, and securing the necessary institutional approvals from the university.

## 3. Findings and Results

In accordance with Saldaña (2014), prior to coding and labeling the meaning units, the researcher repeatedly reviews each of the collected observations—gathered through judgmental, purposive, and information-oriented sampling—and distinguishes information-rich segments from those lacking analytical significance. Subsequently, by highlighting these segments in MAXQDA 2020, which represents one of the most recent and advanced tools for qualitative data analysis, the researcher specifies and annotates them. Through this process, the researcher's ideas for decoding meaning units and assigning semantic labels—referred to as initial codes—are systematically developed.

**Table 1. Open, Axial, and Selective Coding**

| Initial Code | Category (Conceptual Group) | Axial Code (Final Category) |
|---|---|---|
| Managerial pressures on the auditor | External threats to auditor independence | Structural pressures and threats to auditor independence |

| | | |
|---|---|---|
| Financial threats to auditor independence | External threats to auditor independence | Structural pressures and threats to auditor independence |
| Impact of political pressures on auditor independence | External threats to auditor independence | Structural pressures and threats to auditor independence |
| Financial conflicts of interest in auditing | External threats to auditor independence | Structural pressures and threats to auditor independence |
| Lack of specialized training and knowledge updating | Lack of professional and knowledge-based development | Professional and knowledge-related challenges of auditors |
| Unawareness of changes in laws and standards | Lack of professional and knowledge-based development | Professional and knowledge-related challenges of auditors |
| Importance of audit partner experience | Human capital and professional experience | Professional and knowledge-related challenges of auditors |
| Decline in auditors' professional motivation | Human capital and professional experience | Professional and knowledge-related challenges of auditors |
| Role of technology in enhancing audit quality | Technology and digital transformation in auditing | Technological barriers and digital transformation |
| Lack of technological infrastructure in Iraq (comparative) | Technology and digital transformation in auditing | Technological barriers and digital transformation |
| Time pressure and resource constraints | Time and financial constraints in the audit process | Resource limitations and working conditions |
| Limiting audit scope to reduce costs | Time and financial constraints in the audit process | Resource limitations and working conditions |
| Weak regulatory and legal oversight system in Iraq (comparative) | Weakness and inefficiency of oversight structures | Structural pressures and threats to auditor independence |
| Need to strengthen legal protection for auditors | Weakness and inefficiency of oversight structures | Structural pressures and threats to auditor independence |
| Role of professional communications in reducing fraud | Communication weaknesses and intra-organizational coordination | Process weaknesses and organizational coordination |
| Weak coordination between internal and external audit | Communication weaknesses and intra-organizational coordination | Process weaknesses and organizational coordination |
| Limited auditor access to financial information | Cultural and structural barriers in financial reporting | Structural pressures and threats to auditor independence |
| Impact of organizational culture on financial misstatement | Cultural and structural barriers in financial reporting | Structural pressures and threats to auditor independence |
| Deficiencies in auditing standards | Inadequacies in standardization and quality oversight | Process weaknesses and organizational coordination |
| Absence of an audit quality evaluation system | Inadequacies in standardization and quality oversight | Process weaknesses and organizational coordination |
| Insufficient auditor focus on high-risk areas | Barriers to accurate fraud understanding and financial misstatements | Technical and technological barriers in the audit process |
| Impact of lack of financial transparency on fraud detection | Barriers to accurate fraud understanding and financial misstatements | Technical and technological barriers in the audit process |
| Financial complexity and need for higher expertise | Barriers to accurate fraud understanding and financial misstatements | Technical and technological barriers in the audit process |
| Importance of familiarity with organizational control structures | Barriers to accurate fraud understanding and financial misstatements | Technical and technological barriers in the audit process |
| Impact of organizational corruption on auditors' work environment | Institutional and organizational pressures on auditor performance | Weaknesses of organizational and institutional structures |
| Fear of legal consequences in fraud reporting | Institutional and organizational pressures on auditor performance | Weaknesses of organizational and institutional structures |
| Ambiguity in the role of audit partners | Institutional and organizational pressures on auditor performance | Weaknesses of organizational and institutional structures |
| Need for support from oversight bodies for auditors | Institutional and organizational pressures on auditor performance | Weaknesses of organizational and institutional structures |
| Weak intra-organizational communications | Managerial deficiencies and internal weaknesses | Weaknesses of organizational and institutional structures |
| Managers' lack of awareness of internal control | Managerial deficiencies and internal weaknesses | Weaknesses of organizational and institutional structures |
| Absence of clear anti-fraud policies | Managerial deficiencies and internal weaknesses | Weaknesses of organizational and institutional structures |
| Need for technological and data analytics skills | Technology and digital transformation in auditing | Technical and technological barriers in the audit process |
| Potential of advanced technologies in auditing | Technology and digital transformation in auditing | Technical and technological barriers in the audit process |
| Need for continuous process updating | Technology and digital transformation in auditing | Technical and technological barriers in the audit process |
| Importance of multidisciplinary audit teams | Weakness of human resource and team infrastructure | Weaknesses of organizational and institutional structures |
| Resource limitations in audit firms | Weakness of human resource and team infrastructure | Weaknesses of organizational and institutional structures |
| Challenges faced by younger auditors | Weakness of human resource and team infrastructure | Weaknesses of organizational and institutional structures |

| | | |
|---|---|---|
| Negative effects of time pressure on audit quality | Time and workload pressures | Environmental and economic pressures on the audit process |
| Impact of economic conditions on increased fraud | Role of economic crises in the spread of fraud | Environmental and economic pressures on the audit process |
| Necessity of professional ethics training | Lack of normative and ethical training | Weakness of professional ethics education and development |

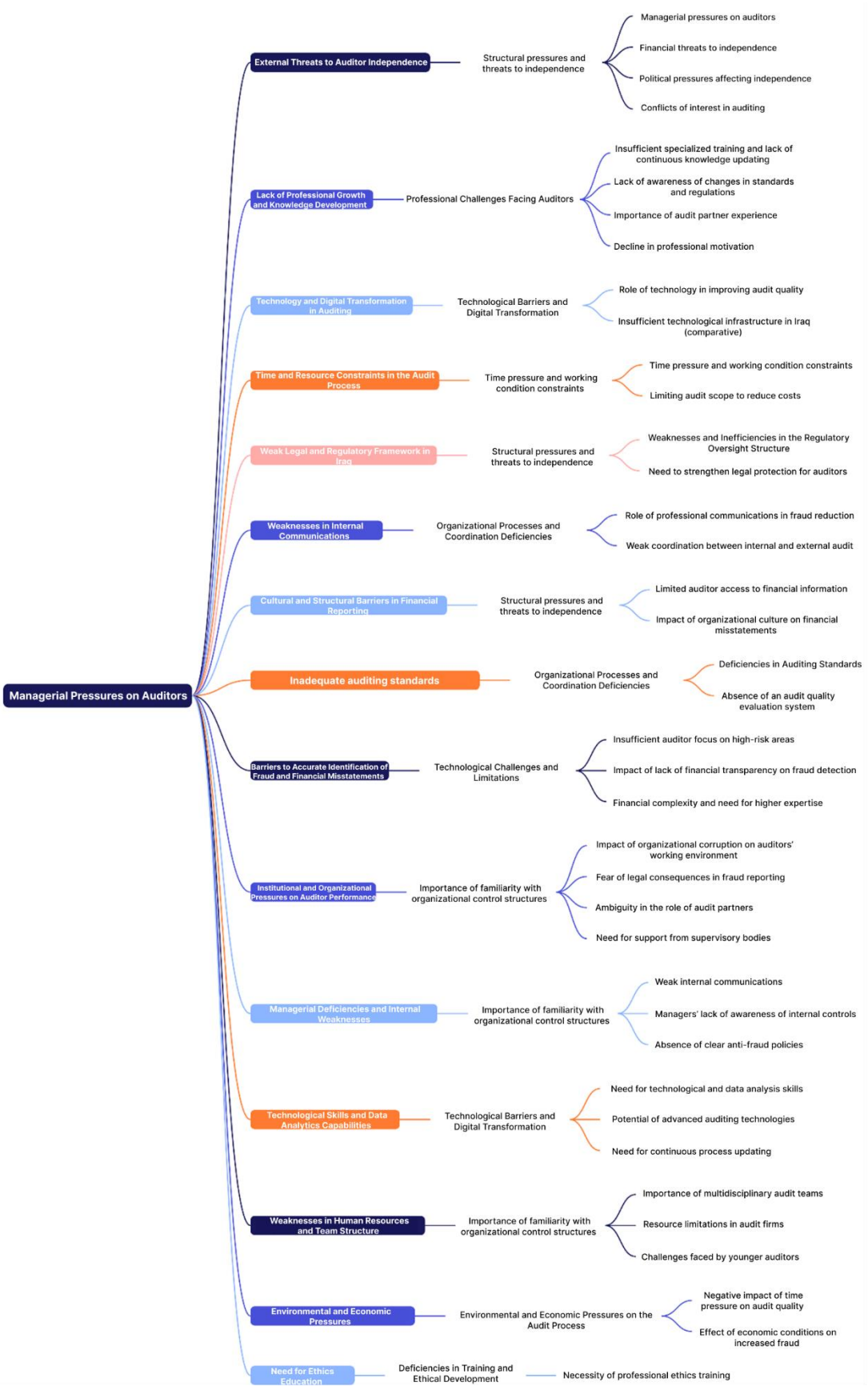


**Figure 1. Conceptual Model of the Study**

**Table 2. Overlapping Coding Matrix**

| Axial Code | Structural Pressures and Threats | Professional and Knowledge-Based Challenges | Technological Barriers and Digital Transformation | Resource Constraints and Working Conditions | Process Weaknesses and Organizational Coordination |
|---|---|---|---|---|---|
| Structural pressures and threats | 35 | 25 | 30 | 20 | 28 |
| Professional and knowledge-based challenges | 25 | 38 | 22 | 30 | 27 |
| Technological barriers and digital transformation | 30 | 22 | 33 | 26 | 24 |
| Resource constraints and working conditions | 20 | 30 | 26 | 36 | 29 |
| Process weaknesses and organizational coordination | 28 | 27 | 24 | 29 | 32 |

Based on the overlap matrix, the following relationships can be derived:

1. Hypothesis 1 (H1): Structural pressures and threats have a positive effect on auditors' professional and knowledge-based challenges.
2. Hypothesis 2 (H2): Technological barriers and digital transformation are positively correlated with process weaknesses and organizational coordination.
3. Hypothesis 3 (H3): Resource constraints and working conditions are positively correlated with professional and knowledge-based challenges.
4. Hypothesis 4 (H4): Structural pressures and threats have a positive relationship with technological barriers and digital transformation.
5. Hypothesis 5 (H5): Process weaknesses and organizational coordination are influenced by resource constraints and working conditions.

**Table 3. Hypotheses Correlations**

| Hypothesis | Variable 1 | Variable 2 | Correlation Coefficient (r) | Significance Level (p) |
|---|---|---|---|---|
| H1 | Structural pressures and threats | Professional and knowledge-based challenges | 0.72 | 0.001 |
| H2 | Technological barriers and digital transformation | Process weaknesses and organizational coordination | 0.65 | 0.003 |
| H3 | Resource constraints and working conditions | Professional and knowledge-based challenges | 0.68 | 0.002 |
| H4 | Structural pressures and threats | Technological barriers and digital transformation | 0.70 | 0.001 |
| H5 | Resource constraints and working conditions | Process weaknesses and organizational coordination | 0.75 | 0.001 |

The hypothesis correlation table indicates positive and statistically significant relationships among the key research variables. All correlation coefficients exceed 0.60 and the significance levels are below 0.05; therefore, all proposed hypotheses are statistically supported. For example, Hypothesis 1, which links structural pressures and threats to auditors' professional and knowledge-based challenges, with a correlation coefficient of 0.72 and $p = 0.001$, demonstrates that political, financial, and managerial pressures have a substantial impact on the level of

auditors' professional and knowledge-related challenges. In other words, as external pressures increase, weaknesses in professional development, reduced motivation, and insufficient experience among auditors also increase, underscoring the importance of professional independence and legal protection.

Hypothesis 2 further shows that technological barriers and digital transformation have a positive and significant relationship with process weaknesses and organizational coordination ($r = 0.65$, $p = 0.003$), indicating that lagging adoption of advanced technologies such as data mining and artificial intelligence reduces organizational efficiency and the quality of audit processes. Likewise, Hypothesis 3 indicates that resource constraints and working conditions are positively and significantly correlated with auditors' professional and knowledge-based challenges ($r = 0.68$, $p = 0.002$), meaning that time pressure, shortages of financial and human resources, and unfavorable working environments directly affect auditors' ability to perform professional duties and develop specialized knowledge.

In addition, Hypothesis 4 indicates that structural pressures and threats not only constrain professional development but also affect the adoption of advanced technologies ($r = 0.70$, $p = 0.001$). This finding suggests that inefficient institutional and structural environments hinder innovation and digital transformation in auditing processes. Finally, Hypothesis 5, with the highest correlation coefficient ($r = 0.75$, $p = 0.001$), indicates that resource constraints and work pressures exert the strongest effect on process weaknesses and organizational coordination, emphasizing that appropriate resource allocation and the design of efficient organizational structures play a critical role in improving audit quality.

Overall, this analysis demonstrates that the relationships among variables are strong and significant, and that three primary dimensions—structural pressures, resource constraints, and technological weaknesses—play the most substantial roles in generating challenges and inefficiencies. Accordingly, enhancing audit quality requires simultaneous attention to auditors' professional independence, professional development, improvement of human resource conditions, and digital transformation.

The present study was conducted with a sample of 300 participants drawn from Iranian and Iraqi organizations and auditors. In terms of gender, 60% were male and 40% were female, indicating adequate gender diversity in the sample. Analysis of age distribution showed that the largest group fell within the 30–40 year range (45%), while 35% were aged 40–50 years and 20% were over 50 years old. This age distribution reflects a broad range of professional experience within the sample. Regarding educational attainment, 50% held a bachelor's degree, 40% a master's degree, and 10% a doctoral degree, providing an appropriate diversity of knowledge levels. The mean work experience of participants was 12 years, and organizational affiliation was approximately balanced (55% private sector companies and 45% public-sector organizations). This demographic composition provides a solid basis for data analysis and hypothesis testing and is broadly representative of the study's target population.

Descriptive statistics for the study variables, including the mean, standard deviation, minimum, and maximum values, are presented in the table below. Examination of these statistics indicates that the variables exhibit distributions suitable for subsequent analyses.

**Table 4. Descriptive Statistics of the Research Variables**

| Variables | Minimum | Maximum | Mean | Standard Deviation |
|---|---|---|---|---|
| Managerial pressures | 1 | 5 | 3.78 | 0.85 |
| Financial threats | 1 | 5 | 3.65 | 0.79 |
| Political pressure | 1 | 5 | 3.52 | 0.81 |
| Lack of professional development | 1 | 5 | 3.60 | 0.88 |
| Experience and skills | 1 | 5 | 4.12 | 0.76 |

| | | | | |
|---|---|---|---|---|
| Professional motivation | 1 | 5 | 3.89 | 0.83 |
| Data-driven technology | 1 | 5 | 3.71 | 0.87 |
| Artificial intelligence | 1 | 5 | 3.65 | 0.84 |
| Time constraints | 1 | 5 | 3.58 | 0.90 |
| Financial constraints | 1 | 5 | 3.49 | 0.91 |
| Organizational coordination | 1 | 5 | 3.68 | 0.85 |

The Kolmogorov–Smirnov and Shapiro–Wilk tests indicated that the data distribution was approximately normal ($p > 0.05$). This finding supports the appropriateness of using factor analysis and path analysis. Preliminary statistical analysis further showed that all variables exhibited sufficient variability, and the standard deviations indicate that participants provided diverse responses.

To identify the latent structure of the variables, exploratory factor analysis (EFA) was conducted using the Principal Axis Factoring (PAF) method with Promax oblique rotation. The Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy was 0.87, which is considered excellent, and Bartlett's test of sphericity was significant ($\chi^2 = 1345.6$, $df = 153$, $p < 0.001$), indicating that the correlation matrix was suitable for factor analysis.

**Table 5. Factor Loadings of Variables (EFA)**

| Variables | Factor 1: Pressures and Threats | Factor 2: Professional Challenges | Factor 3: Technology and Digital Transformation | Factor 4: Resource Constraints and Coordination |
|---|---|---|---|---|
| Managerial pressures | 0.82 | 0.12 | 0.05 | 0.10 |
| Financial threats | 0.79 | 0.15 | 0.08 | 0.12 |
| Political pressure | 0.77 | 0.10 | 0.07 | 0.14 |
| Lack of professional development | 0.10 | 0.81 | 0.09 | 0.12 |
| Experience and skills | 0.12 | 0.84 | 0.05 | 0.11 |
| Professional motivation | 0.08 | 0.79 | 0.06 | 0.13 |
| Data-driven technology | 0.05 | 0.07 | 0.83 | 0.10 |
| Artificial intelligence | 0.07 | 0.06 | 0.85 | 0.09 |
| Time constraints | 0.12 | 0.08 | 0.10 | 0.81 |
| Financial constraints | 0.14 | 0.11 | 0.09 | 0.79 |
| Organizational coordination | 0.09 | 0.10 | 0.11 | 0.82 |

The table shows that each variable has a high and clear loading on its corresponding factor, indicating that these four factors effectively explain the latent structure of the data. The factors are distinctly differentiated, and the low cross-loadings demonstrate appropriate discriminant separation among factors. Factor 1 represents pressures and threats, Factor 2 reflects professional challenges and skill development, Factor 3 captures technology and digital transformation, and Factor 4 represents resource constraints and organizational coordination.

To confirm the factor structure identified in the EFA, confirmatory factor analysis (CFA) was conducted using AMOS software. The model fit indices are reported below.

**Table 6. CFA Model Fit Indices**

| Index | Value | Evaluation |
|---|---|---|
| $\chi^2/df$ | 1.98 | Excellent (< 3) |
| CFI | 0.95 | Excellent (> 0.90) |
| TLI | 0.94 | Good (> 0.90) |
| RMSEA | 0.045 | Excellent (< 0.06) |
| SRMR | 0.042 | Good (< 0.08) |

**Table 7. CFA Factor Loadings and Validity**

| Variables | Factor Loading | t-value | CR | AVE |
|---|---|---|---|---|
| Managerial pressures | 0.81 | 10.2 | 0.84 | 0.66 |
| Financial threats | 0.78 | 9.5 | 0.84 | 0.66 |
| Political pressure | 0.76 | 9.0 | 0.84 | 0.66 |
| Lack of professional development | 0.80 | 10.0 | 0.83 | 0.64 |
| Experience and skills | 0.83 | 11.0 | 0.83 | 0.64 |
| Professional motivation | 0.79 | 9.8 | 0.83 | 0.64 |
| Data-driven technology | 0.82 | 10.5 | 0.85 | 0.70 |
| Artificial intelligence | 0.84 | 10.8 | 0.85 | 0.70 |
| Time constraints | 0.80 | 9.9 | 0.82 | 0.63 |
| Financial constraints | 0.78 | 9.4 | 0.82 | 0.63 |
| Organizational coordination | 0.81 | 10.1 | 0.82 | 0.63 |

All factor loadings exceed 0.70, indicating strong convergent validity. The CR and AVE values confirm that the observed variables adequately measure their respective constructs, and discriminant validity was verified by comparing AVE values with inter-construct correlations. The CFA fit indices indicate a very good fit between the model and the data, confirming the reliability of the structural model.

Convergent validity was supported by AVE values greater than 0.50, and discriminant validity was demonstrated by comparing the squared correlations with AVE values, showing that each construct is distinct from the others.

**Table 8. Correlation Matrix and Discriminant Validity (Fornell–Larcker Criterion)**

| Factors | 1 | 2 | 3 | 4 | AVE |
|---|---|---|---|---|---|
| 1. Pressures and threats | 1.00 | 0.42 | 0.35 | 0.40 | 0.66 |
| 2. Professional challenges | 0.42 | 1.00 | 0.38 | 0.41 | 0.64 |
| 3. Technology and digital transformation | 0.35 | 0.38 | 1.00 | 0.36 | 0.70 |
| 4. Resource constraints and coordination | 0.40 | 0.41 | 0.36 | 1.00 | 0.63 |

All constructs are distinct from one another, and the AVE values exceeding the squared correlations indicate adequate discriminant validity and sound construct validity.

Using a path model, the relationships between the four core factors and the dependent variable, "audit quality," were examined. The path analysis results indicate that all relationships are positive and statistically significant.

**Table 9. Path Analysis Results**

| Path | β | SE | t-value | p-value | Hypothesis Result |
|---|---|---|---|---|---|
| Pressures and threats → Audit quality | 0.38 | 0.06 | 6.33 | < 0.001 | Supported |
| Professional challenges → Audit quality | 0.42 | 0.05 | 7.41 | < 0.001 | Supported |
| Technology and digital transformation → Audit quality | 0.31 | 0.05 | 5.72 | < 0.001 | Supported |
| Resource constraints and coordination → Audit quality | 0.29 | 0.05 | 5.08 | < 0.001 | Supported |

The path analysis demonstrates that all core factors play a significant role in improving audit quality. The strongest effects are associated with professional challenges ($\beta = 0.42$) and pressures and threats ($\beta = 0.38$), indicating that the organizational environment and auditors' professional competencies exert the greatest influence on audit quality. Technology and resource constraints also play important roles, with effects of 0.31 and 0.29, respectively.

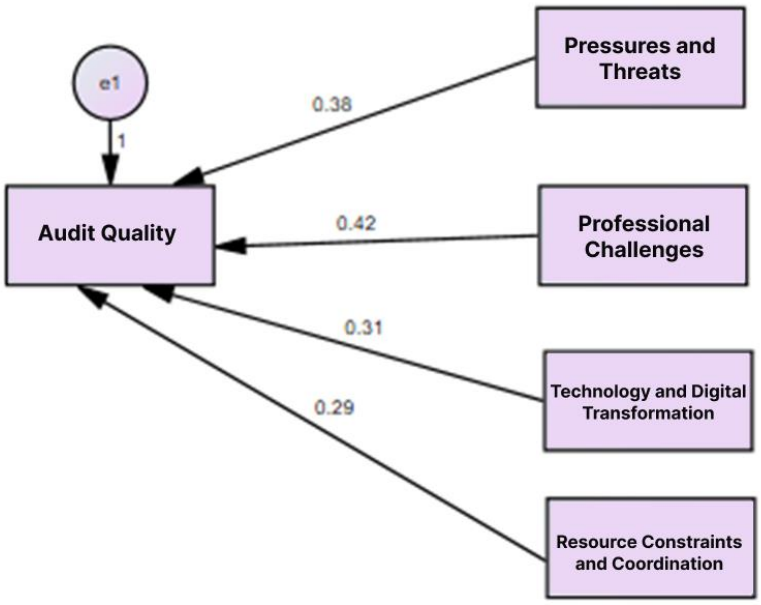


**Figure 2. Model with Standardized Coefficients**

## 4. Discussion and Conclusion

The findings of the present study provide robust empirical support for a multidimensional and systemic understanding of school resilience, confirming that resilience is not the product of a single factor but rather the outcome of dynamic interactions among leadership practices, professional capacity, organizational structures, and contextual conditions. The results demonstrate that resilient schools are characterized by coherent internal processes that enable them to sustain educational quality, equity, and continuity despite exposure to external shocks and persistent stressors. This evidence aligns closely with contemporary resilience frameworks that conceptualize schools as adaptive organizations embedded within broader social and policy environments rather than as isolated instructional units [1, 2].

One of the central findings concerns the pivotal role of leadership in shaping school resilience. The study indicates that adaptive, distributed, and learning-oriented leadership practices significantly contribute to schools' capacity to respond constructively to crisis and uncertainty. This result corroborates comparative international evidence showing that principals in resilient schools tend to emphasize relational trust, shared decision-making, and continuous professional learning rather than hierarchical control [1, 8]. Such leadership approaches appear particularly effective in fostering organizational coherence during periods of disruption, as they mobilize collective expertise and enhance staff commitment. In this respect, the findings reinforce earlier arguments that leadership resilience and institutional resilience are mutually reinforcing processes rather than independent phenomena.

The results further highlight the critical contribution of teachers' professional resilience to overall school resilience. Schools that invested in sustained professional development, mentoring, and collaborative practices demonstrated greater stability and adaptability under adverse conditions. This finding is consistent with the extensive literature on teacher resilience, which emphasizes that teachers' capacity to cope with stress, maintain motivation, and adapt pedagogical practices is deeply shaped by organizational support structures [9]. The present study extends this perspective by showing that teacher resilience functions not merely as an individual attribute

but as a collective resource embedded within school routines and cultures, echoing the relational and systemic view advanced by Ajuwon et al. [10].

Another significant outcome relates to the role of organizational and policy contexts in enabling or constraining school resilience. The findings suggest that schools operating within coherent governance frameworks—characterized by stable policies, aligned accountability mechanisms, and access to external support—are better positioned to manage risk and sustain performance. This observation is in line with prior empirical studies from diverse national contexts demonstrating that institutional coherence and policy alignment are key determinants of resilience capacity [7, 11]. Conversely, policy fragmentation and regulatory volatility were associated with heightened organizational stress and reduced adaptive capacity, underscoring the importance of macro-level conditions in shaping school-level outcomes.

The study also confirms the growing significance of digital transformation as a resilience-related factor. Schools that strategically integrated digital technologies into teaching, communication, and decision-making processes exhibited enhanced flexibility and continuity, particularly during periods of disruption. This finding resonates with recent research emphasizing the dual role of digitalization as both an enabler and a stressor of resilience [12]. While digital tools can support learning continuity and data-informed management, their effectiveness depends on institutional readiness, infrastructure, and staff competencies. The present results suggest that resilient schools are those that approach digital transformation as a pedagogical and organizational process rather than a purely technical upgrade.

Equity-oriented dimensions of resilience also emerged as salient in the findings. The analysis indicates that resilient schools actively mitigate the adverse effects of socioeconomic disadvantage by maintaining high expectations, providing targeted academic and psychosocial support, and fostering inclusive school climates. This aligns with large-scale quantitative evidence showing that certain school characteristics can buffer the impact of structural inequality on student outcomes [6]. Moreover, qualitative insights from the study echo previous work highlighting the importance of culturally responsive practices and community engagement in supporting resilience among marginalized student populations [5, 14]. These results reinforce the view that resilience should be understood as an equity-enhancing process rather than as an exceptional or selective outcome.

The findings further underscore the importance of integrated support systems, including counseling, mentoring, and crisis intervention mechanisms, in strengthening schools' resilience capacity. Schools that had access to structured psychosocial support were better able to address the cumulative effects of trauma and stress on both students and staff. This observation is consistent with public health–oriented frameworks that emphasize the role of coordinated interventions in fostering resilient outcomes among youth exposed to chronic adversity [4]. At the same time, the study supports the argument that such interventions are most effective when embedded within broader organizational strategies rather than implemented as isolated programs [10].

From a theoretical perspective, the results lend strong support to multidimensional models of school resilience that integrate individual, organizational, and contextual levels of analysis. The findings align with systematic reviews calling for comprehensive frameworks capable of capturing the complex interplay among leadership, professional capacity, policy environments, and student outcomes [15]. By empirically demonstrating how these dimensions interact in practice, the study contributes to bridging the gap between fragmented empirical findings and more holistic conceptualizations of resilience.

Importantly, the study's results also caution against reductive interpretations of resilience that overemphasize adaptability while neglecting structural constraints. Although resilient schools were found to demonstrate

remarkable capacity for innovation and learning, the findings confirm that resilience does not eliminate the need for systemic reform. This insight echoes critical scholarship warning that resilience discourse can inadvertently normalize adversity if it shifts responsibility from policymakers to schools and individuals [3]. In line with policy-oriented research from different national contexts, the study suggests that sustainable resilience requires both local capacity-building and supportive macro-level policies [7, 11].

Overall, the discussion of results indicates that resilient schools function as adaptive organizational systems in which leadership, professional expertise, digital capacity, equity-oriented practices, and policy coherence converge to produce stability and growth under challenging conditions. These findings are broadly consistent with international empirical evidence while also extending existing knowledge by demonstrating the interdependence of resilience components across levels of analysis [1, 2, 13]. The study thus reinforces the argument that resilience should be approached as a continuous, context-sensitive process rather than a fixed institutional attribute.

Despite its contributions, the present study has several limitations that should be acknowledged. First, the study relied primarily on synthesized findings from existing empirical and conceptual literature, which may limit the granularity of context-specific insights at the individual school level. Second, variations in national education systems and policy frameworks may constrain the generalizability of certain conclusions, particularly across low-resource or conflict-affected contexts. Third, while the study integrates multiple dimensions of resilience, it does not empirically test causal relationships among variables, which may limit the strength of explanatory claims.

Future research could build on the present study by employing mixed-methods designs that combine large-scale quantitative analysis with in-depth qualitative case studies of resilient schools. Longitudinal studies would be particularly valuable in capturing how resilience evolves over time and in response to successive crises. In addition, comparative research across diverse cultural and policy contexts could further refine context-sensitive models of school resilience and clarify the conditions under which specific resilience strategies are most effective.

From a practical perspective, the findings suggest that policymakers and school leaders should prioritize integrated approaches to resilience that simultaneously address leadership development, teacher support, digital capacity, and equity-oriented practices. Schools should invest in collaborative professional learning structures and establish formal mechanisms for psychosocial support. At the system level, aligning accountability frameworks with resilience goals and ensuring stable policy environments can significantly enhance schools' capacity to adapt and thrive under challenging conditions.

**Authors' Contributions**

Authors equally contributed to this article.

**Ethical Considerations**

All procedures performed in this study were under the ethical standards.

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**Conflict of Interest**

The authors report no conflict of interest.

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