

When Audit Time Runs Short: Understanding the Impact of Time Budget Pressure on Audit Quality

Omar Raad Hamid¹  Alaa A.D. Taha²  Esraa Esam Alharasis³ 

^{1&2} College of Administration and Economics, University of Mosul, Mosul, Iraq.

³ School of Business, Mutha University, Karak, Jordan.

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Abstract

Time budget pressure has become one of the most significant challenges facing auditors as increasing regulatory requirements, stakeholder expectations, and organizational complexities place greater demands on audit engagements. Excessive time pressure may adversely affect auditors' ability to perform critical audit activities and ultimately compromise audit quality. This study investigates the impact of time budget pressure on five dimensions of audit quality—meticulous planning of audit tasks and resource allocation, effective supervision of the audit team, gathering sufficient and appropriate audit evidence, preparing transparent and independent reports, and strict adherence to professional standards. In addition, the study examines the moderating role of mitigation strategies in reducing the negative consequences of time budget pressure. A quantitative research design was adopted, and data were collected from 281 auditors working in Iraqi banks using a structured questionnaire consisting of 25 measurement items. The proposed model was analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM). The findings reveal that time budget pressure exerts a significant negative effect on all dimensions of audit quality. The results further indicate that mitigation strategies significantly weaken the negative effects of time pressure on planning, supervision, and evidence collection, but do not significantly moderate its effects on reporting quality and adherence to professional standards. The study contributes to the auditing literature by conceptualizing audit quality as a multidimensional construct and by demonstrating the differential effectiveness of mitigation strategies across audit activities. Practical implications for audit firms, regulators, and professional bodies are also discussed.



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©Author(s), 2026, CA: Alaa A. D. Taha, alaa_abd_d@uomosul.edu.iq

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1. Introduction

The quality of an audit is often tested not when auditors have abundant time and resources, but when they must make critical professional judgments under severe deadline constraints. In contemporary auditing environments, increasing regulatory requirements, heightened stakeholder expectations, growing organizational complexity, and competitive market pressures have significantly intensified the time demands placed upon auditors (Al-Qatamin, 2020; Samagaio et al., 2025). Consequently, time budget pressure has emerged as one of the most persistent challenges confronting the auditing profession. While audit firms seek to improve efficiency and meet reporting deadlines, auditors are simultaneously expected to maintain professional skepticism, comply with auditing standards, collect sufficient evidence, and provide independent opinions. This inherent tension between efficiency and audit quality has attracted substantial attention from academics and practitioners because failures in audit quality can undermine stakeholder confidence, reduce the credibility of financial reporting, and expose organizations to significant financial and reputational risks (Backof et al., 2022; Francis, 2023).

Audit quality remains a cornerstone of effective corporate governance and financial accountability. High-quality audits provide assurance that financial statements are free from material misstatement and that auditors have exercised due professional care throughout the engagement process (Hichri, 2023). To achieve this objective, auditors must perform a sequence of interconnected activities, including comprehensive planning, effective supervision of audit teams, gathering sufficient and appropriate evidence, preparing transparent and independent reports, and adhering strictly to professional auditing standards (PCAOB:AS1000, 2024; PCAOB:AS1101, 2010; PCAOB:AS1105, 2025; PCAOB:AS1201, 2010; PCAOB:AS2101, 2025; PCAOB:AS3101, 2017). Collectively, these activities form the foundation of audit quality and contribute to the reliability and credibility of financial reporting systems.

However, achieving high audit quality has become increasingly difficult in environments characterized by significant time constraints. Time budget pressure occurs when auditors perceive that the time allocated to complete audit procedures is insufficient relative to the scope and complexity of the engagement (Hien & Tuan, 2025; Samagaio et al., 2025). Previous research suggests that such pressure originates from multiple sources, including tight reporting deadlines, insufficient staffing, excessive workloads, inadequate planning, client expectations, and growing regulatory requirements (Khulsum et al., 2025; Nehme et al., 2021; Rosadi & Barus, 2022). Under these circumstances, auditors may experience elevated levels of occupational stress, cognitive overload, and decision fatigue, which can adversely affect professional judgment and audit performance (Aoife et al., 2025; Henriques & Samagaio, 2024).

The auditing literature consistently reports that excessive time budget pressure is associated with dysfunctional audit behaviours and reduced audit quality. For example, auditors operating under severe time constraints may shorten audit procedures, rely on less reliable evidence, reduce testing efforts, prematurely sign off audit tasks, or underreport audit hours (Broberg et al., 2016; Otley & Pierce, 1996; Soobaroyen & Chengabroyan, 2007). Research has also demonstrated that time pressure can impair auditor judgment, weaken professional skepticism, reduce fraud detection capabilities, and increase the likelihood of inappropriate audit conclusions (Lestari et al., 2020; McDaniel, 1990; Yuliana & Puspita, 2025). Despite the growing body of evidence highlighting the adverse consequences of time pressure, the specific mechanisms through which time budget pressure affects different dimensions of audit quality remain insufficiently explored.

More specifically, existing studies have often treated audit quality as a single aggregate construct rather than examining its multidimensional nature. While previous investigations have established a general relationship between time pressure and audit quality, relatively little attention has been devoted to understanding how time budget pressure influences distinct audit quality dimensions such as planning effectiveness, supervisory quality, evidence sufficiency, reporting quality, and compliance with professional standards. These dimensions represent different stages and responsibilities within the audit process and may be affected differently by temporal constraints. Consequently, treating audit quality as a unidimensional outcome may conceal important variations in how auditors respond to time pressure across different audit activities.

A second limitation within the existing literature concerns the role of organizational responses to time budget pressure. Although scholars have acknowledged that audit firms often implement mitigation mechanisms such as improved planning systems, supervisory support, workload management practices, technological tools, and quality-control procedures, empirical evidence regarding their effectiveness remains limited (Kokina et al., 2025; Sayal et al., 2025; Wang & Liang, 2025). Most prior studies have focused primarily on the direct effects of time pressure while giving comparatively little attention to factors that may reduce or buffer its negative consequences. As a result, there is still insufficient understanding of whether mitigation strategies can effectively protect audit quality when auditors operate under demanding time constraints.

This limitation is particularly important in developing and emerging economies, where audit firms frequently face resource constraints, technological challenges, and evolving regulatory environments. In the Iraqi banking sector, auditors operate within a highly regulated environment characterized by increasing compliance requirements, rapid financial sector development, and heightened stakeholder expectations. These conditions create substantial pressure on auditors to complete engagements efficiently while maintaining high standards of audit quality. Despite the

practical significance of this issue, empirical evidence regarding the relationship between time budget pressure, mitigation strategies, and audit quality within the Iraqi context remains scarce. Consequently, there is a need for research that provides a comprehensive examination of how time pressure affects specific dimensions of audit quality and whether organizational mitigation strategies can alleviate these effects.

To address these gaps, the present study investigates the impact of time budget pressure on five dimensions of audit quality: meticulous planning of audit tasks and resource allocation, effective supervision of the audit team, gathering sufficient and appropriate audit evidence, preparing transparent and independent reports, and strict adherence to professional standards. Furthermore, the study examines the moderating role of mitigation strategies in reducing the adverse effects of time budget pressure on these dimensions. Drawing upon auditor behaviour and occupational stress perspectives, the study argues that time budget pressure undermines audit quality by constraining auditors' ability to perform critical audit activities effectively. At the same time, mitigation strategies are expected to function as organizational mechanisms that weaken the negative influence of time pressure by improving resource allocation, coordination, supervision, and operational efficiency.

Accordingly, the central purpose of this study is to develop and empirically test a comprehensive model explaining how time budget pressure affects audit quality and how mitigation strategies influence these relationships. Using data collected from auditors working in Iraqi banks and analysed through Partial Least Squares Structural Equation Modelling (PLS-SEM), the study seeks to provide both theoretical and practical insights into the management of audit quality under conditions of temporal constraint. The study advances the auditing literature by conceptualizing audit quality as a multidimensional construct and by examining the boundary conditions under which mitigation strategies can protect audit performance. Furthermore, the findings provide evidence-based recommendations for audit firms, regulators, and professional bodies seeking to reduce the adverse consequences of time budget pressure and enhance the effectiveness of auditing practices.

The remainder of this paper is structured as follows. Section 2 presents the theoretical background and hypothesis development. Section 3 describes the research methodology. Section 4 reports the empirical findings and structural model results. Section 5 discusses the findings. Finally, Sections 6 and 7 present the conclusions, implications, limitations, and directions for future research.

2. Theoretical Background and Hypothesis Development

2.1 Theoretical Basis

The relationship between time budget pressure reasons and audit quality can be explained through the lens of auditor behaviour and occupational stress perspectives, which suggest that auditors'

professional judgments and performance outcomes are significantly influenced by environmental constraints and workload conditions (Henriques & Samagaio, 2024; Lai, 2026). Time budget pressure represents a situational factor that affects auditors' cognitive processing, professional skepticism, and decision-making quality during audit engagements (Samagaio et al., 2025; Subhan, 2023). Prior studies have demonstrated that excessive time budget pressure often encourages auditors to reduce audit procedures, prematurely sign off audit tasks, or engage in dysfunctional audit behaviours that ultimately undermine audit quality (Khulsum et al., 2025; Mutiara et al., 2025; Soobaroyen & Chengabroyan, 2007).

The audit environment requires auditors to perform complex tasks involving planning, risk assessment, evidence evaluation, and professional judgment. Under conditions of severe time constraints, auditors may allocate insufficient attention to critical audit procedures, thereby increasing the likelihood of judgment errors and reducing the effectiveness of audit programs (Backof et al., 2025; Vinson et al., 2018; Xie, 2023). Research has further shown that time budget pressure negatively affects auditor independence, professional skepticism, and fraud detection capabilities, all of which are fundamental components of audit quality (Lestari et al., 2020; Yuliana & Puspita, 2025).

Conversely, mitigation strategies provide organizational mechanisms that enable audit firms to manage workload demands and maintain professional performance under challenging conditions. Effective planning, enhanced supervision, utilization of digital tools, and improved resource allocation can reduce the adverse consequences of time budget pressure and support compliance with auditing standards (Duhova et al., 2026; Sayal et al., 2025). Therefore, mitigation strategies are expected to function as a moderating mechanism that weakens the negative influence of time budget pressure reasons on audit quality. When audit firms successfully implement such strategies, auditors are better positioned to perform audit procedures effectively despite temporal constraints, resulting in more reliable audit outcomes and greater adherence to professional standards.

2.2 Audit Quality

Audit quality is a fundamental objective of the auditing profession because it determines the reliability, credibility, and usefulness of audit reports for stakeholders (Hichri, 2023). High-quality audits provide reasonable assurance that financial statements are free from material misstatement and that auditors have exercised due professional care throughout the engagement (Backof et al., 2022). The achievement of audit quality depends not only on auditor competence and independence but also on the effectiveness of the audit program used to guide audit activities from planning to reporting (Vanasco, 1996). An audit program serves as a structured framework that specifies the procedures, responsibilities, timelines, and evidence requirements necessary for completing an audit engagement.

According to ISA 300 and related auditing guidance, a well-designed audit program promotes systematic execution, effective resource utilization, compliance with professional standards, and appropriate risk management (Al-Asmakh et al., 2026; Pérez-Espés et al., 2026). In the present study, audit quality is conceptualized through five interrelated dimensions.

2.2.1 Meticulous Planning of Audit Tasks and Resource Allocation (Planning)

Planning represents the foundation of an effective audit engagement. It involves establishing audit objectives, understanding the client's business environment, identifying risks, determining materiality levels, allocating resources, and developing an appropriate audit strategy. Effective planning enables auditors to perform audit procedures efficiently while ensuring that significant risks receive adequate attention (Dittenhofer, 1994; Pickett, 2012). Audit planning includes obtaining information about the client, understanding legal obligations, assessing internal controls, evaluating audit risks, and developing a comprehensive audit plan. Proper planning improves the coordination of audit activities and facilitates the effective deployment of audit resources throughout the engagement (Porcuna-Enguix et al., 2021). Leocádio et al. (2024) argue that good audit planning practices become increasingly important in modern audit environments characterized by technological change and growing audit complexity. In contrast, insufficient planning may lead to inefficient resource allocation, overlooked risks, duplication of effort, and reduced audit effectiveness. Consequently, meticulous planning contributes significantly to audit quality by ensuring that audit procedures are appropriately designed and aligned with engagement objectives.

2.2.2 Effective Supervision of the Audit Team (Supervision)

Supervision refers to the continuous monitoring, guidance, review, and coordination of audit activities performed by audit team members. Effective supervision ensures that audit procedures are conducted according to established standards and that audit evidence is properly evaluated before conclusions are reached (PCAOB:AS1201, 2010). The supervisory process plays a critical role in maintaining consistency and quality across audit engagements. Supervisors provide technical guidance, review working papers, identify deficiencies, and ensure compliance with professional requirements (Zheng & Han, 2025). Through continuous oversight, audit firms can reduce errors, improve auditor performance, and enhance accountability throughout the engagement process. Previous studies suggest that effective supervision can reduce the negative consequences of workload pressures and strengthen audit quality outcomes (Yan & Xie, 2016). Jati and Suprasto (2020) found that audit supervision contributes to maintaining audit quality under conditions of time budget pressure.

by ensuring that critical procedures are completed and appropriately documented. Therefore, supervision serves as an essential mechanism for quality assurance within audit firms.

2.2.3 Gathering Sufficient and Appropriate Audit Evidence (Evidence)

Audit evidence constitutes the foundation upon which audit conclusions and opinions are based. The quality of audit evidence depends on both its sufficiency and appropriateness (PCAOB:AS1105, 2025). Sufficiency refers to the quantity of evidence obtained, whereas appropriateness relates to its relevance and reliability (Zuca, 2015). Auditors are required to collect evidence from multiple sources using procedures such as inspection, observation, inquiry, confirmation, recalculation, and analytical review. The adequacy of audit evidence directly influences the accuracy of audit findings and the credibility of audit reports (Fotoh, 2025). Austin (2023) and Hammersley and Ricci (2021) emphasize that structured audit programs improve evidence collection by guiding auditors toward relevant procedures and reducing the likelihood of omissions. Obtaining insufficient or inappropriate evidence increases audit risk and may result in incorrect conclusions regarding financial statement assertions (PCAOB:AS1101, 2010). Consequently, high-quality audits require systematic evidence collection procedures supported by adequate documentation and professional judgment. Effective evidence gathering enables auditors to provide reliable assessments while maintaining compliance with auditing standards.

2.2.4 Preparing Transparent and Independent Reports (Opinion)

The auditor's opinion represents the final outcome of the audit process and serves as the primary communication mechanism between auditors and stakeholders (PCAOB:AS3101, 2017). The value of the audit report depends on the auditor's ability to formulate conclusions based on objective evaluation of audit evidence and professional standards (Edmonds et al., 2020). A high-quality audit opinion should be transparent, independent, and supported by sufficient evidence. Auditors must evaluate identified risks, assess material misstatements, and determine whether financial statements fairly present the financial position of the audited entity (Francis, 2023). Professional judgment plays a critical role in this process because auditors frequently encounter situations requiring complex assessments and interpretations (Larmande & Lesage, 2023).

Research indicates that excessive time budget pressure can negatively influence professional judgment and increase the likelihood of premature conclusions or inappropriate reporting decisions (Lai, 2026; Samagaio et al., 2025) (McDaniel, 1990; Nehme et al., 2016). Therefore, maintaining the

integrity of the audit opinion requires sufficient time, appropriate evidence, and strong professional skepticism throughout the audit engagement.

2.2.5 Strict Adherence to Professional Standards in Audit Firms (Standards)

Professional auditing standards establish the principles and procedures that guide audit engagements and ensure consistency in professional practice. Compliance with these standards promotes audit effectiveness, reliability, and accountability while protecting the interests of stakeholders (PCAOB:AS1000, 2024). Adherence to professional standards requires auditors to maintain independence, exercise professional skepticism, document audit procedures adequately, and perform engagements in accordance with established auditing requirements (Ramadhan, 2026). Quick et al. (2024) emphasize that compliance with auditing standards is essential for maintaining audit quality, particularly in challenging operational environments. Professional standards also provide safeguards against dysfunctional audit behaviour by establishing clear expectations regarding audit planning, evidence collection, supervision, and reporting (PCAOB:AS1000, 2024). When auditors consistently comply with these requirements, audit quality is strengthened, stakeholder confidence is enhanced, and the credibility of financial reporting is improved. Consequently, adherence to professional standards represents a critical dimension of audit quality within audit firms.

2.3 Time Budget Pressure Reasons in Audit Firms

Time budget pressure has become one of the most significant challenges facing audit firms due to increasing client expectations, regulatory requirements, competitive pressures, and resource limitations (Al-Qatamin, 2020). Time budget pressure occurs when auditors perceive that the available time is insufficient to complete required audit procedures at the desired quality level. Previous literature identifies time budget pressure and deadline pressure as the two primary manifestations of this phenomenon (Hien & Tuan, 2025; Samagaio et al., 2025).

Several factors contribute to time budget pressure within audit firms. Internal causes include inadequate planning, insufficient staffing, ineffective allocation of audit resources, weak supervision, and poor workload management (Khulsum et al., 2025; Rosadi & Barus, 2022). External causes involve strict client deadlines, reporting requirements, competitive market conditions, and unexpected audit complexities (Khulsum et al., 2025; Nehme et al., 2021). In emerging audit environments, additional pressures may arise from limitations in technological infrastructure and professional resources (Gritli et al., 2025).

Prior studies consistently demonstrate that excessive time budget pressure negatively influences auditor behaviour and audit performance (Awotomilusi, 2022). McDaniel (1990) reported

that time budget pressure can impair audit performance and judgment quality. Similarly, Otley and Pierce (1996) identified time budget pressure as a major antecedent of dysfunctional audit behaviour. Evidence from developed and developing countries further indicates that time budget pressure contributes to premature sign-offs, under-reporting of audit time, reduced professional skepticism, and lower audit quality (Broberg et al., 2016; Hyatt et al., 2023; Nehme, 2017; Soobaroyen & Chengabroyan, 2007). Under severe temporal constraints, auditors may shorten procedures, limit evidence collection, or rely excessively on prior experience rather than conducting comprehensive assessments.

Moreover, time budget pressure has been linked to increased occupational stress and burnout among auditors (Aoife et al., 2025; Srimindarti et al., 2025). Such conditions may impair decision-making capabilities and reduce auditors' ability to maintain professional standards. Therefore, understanding the underlying reasons for time budget pressure is essential for developing effective interventions that preserve audit quality and support sustainable professional performance.

2.4 The Moderating Role of Mitigation Strategies for Time budget pressure Reasons in Audit Firms

Mitigation strategies refer to the policies, practices, and techniques implemented by audit firms to reduce the adverse effects of time budget pressure on audit performance (Wang & Liang, 2025). These strategies aim to improve operational efficiency, strengthen professional oversight, and ensure that audit quality is maintained despite temporal constraints (Mohammed al-Ani & Hamad, 2016).

Effective mitigation begins with comprehensive audit planning. By establishing realistic schedules, identifying high-risk areas early, and allocating resources appropriately, audit firms can reduce unnecessary delays and improve workflow efficiency (Brás et al., 2024; Kokina et al., 2025). Improved planning enables auditors to prioritize critical procedures and manage engagement demands more effectively.

Another important strategy involves strengthening supervision and review mechanisms. Effective supervision provides ongoing guidance, facilitates problem resolution, and ensures compliance with professional standards throughout the audit process. Jati and Suprasto (2020) and Rosadi and Barus (2022) demonstrate that supervisory practices can lessen the negative influence of time budget pressure on audit quality by improving oversight and accountability.

Technological adoption also represents a valuable mitigation mechanism. Digital audit tools enhance documentation processes, facilitate evidence collection, improve communication among audit team members, and support more efficient execution of audit procedures (Kokina et al., 2025; Raihan & Kurniawati, 2025). Such technologies help auditors utilize available time more effectively while maintaining audit quality requirements.

Furthermore, linking performance evaluation to professional standards rather than solely to efficiency measures can discourage dysfunctional behaviours associated with excessive time budget pressure (Khulsum et al., 2025; Samagaio et al., 2025; Siti & Annis Syahzuni, 2025). This approach encourages auditors to prioritize audit quality and professional compliance even when operating under challenging deadlines.

From a theoretical perspective, we believe that mitigation strategies function as a moderating factor because they influence the strength of the relationship between time budget pressure reasons and audit quality. When effective mitigation strategies are present, the negative consequences of time budget pressure become less severe, enabling auditors to maintain planning effectiveness, supervision quality, evidence sufficiency, reporting integrity, and standards compliance. Consequently, audit firms that successfully implement mitigation strategies are better positioned to preserve audit quality despite increasing operational and environmental pressures.

2.5 Conceptual Model and Hypothesis Development

Figure 1 presents the conceptual model of the current study. The model proposes that reasons for time budget pressure in auditing firms negatively affect five dimensions of audit quality: meticulous planning of audit tasks and resource allocation, effective supervision of the audit team, gathering sufficient and appropriate audit evidence, preparing transparent and independent reports, and strict adherence to professional standards. Furthermore, the model proposes that time budget pressure mitigation strategies moderate these relationships by reducing the adverse effects of time budget pressure and supporting audit quality under challenging working conditions.

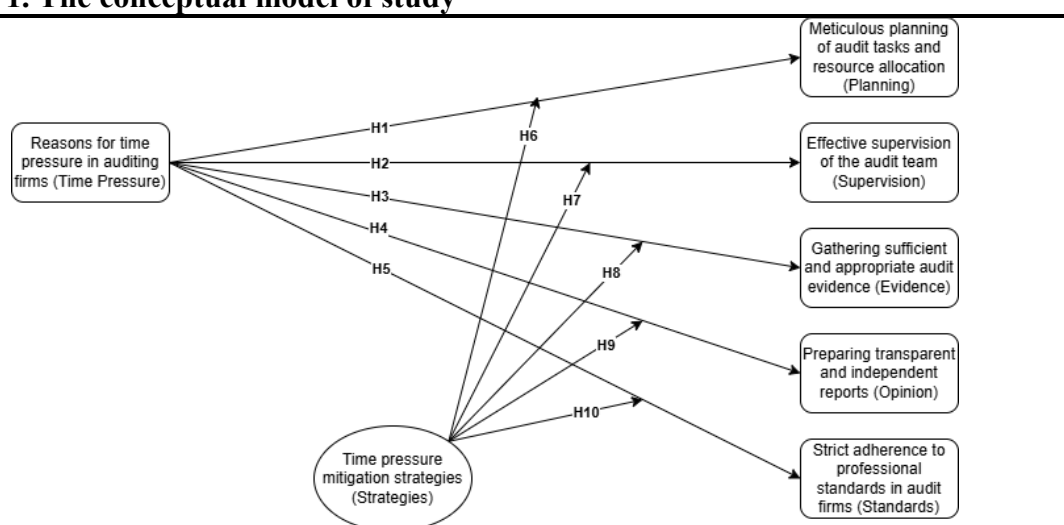
Audit planning constitutes the foundation of a successful audit engagement because it enables auditors to identify risks, allocate resources efficiently, establish realistic schedules, and design appropriate audit procedures (PCAOB:AS2101, 2025). Effective planning ensures that audit activities are performed systematically and that significant issues receive sufficient attention throughout the engagement process (Mahyoro & Kasoga, 2021). However, the effectiveness of planning can be substantially impaired when auditors operate under significant time budget pressure.

Time budget pressure often emerges from tight deadlines, excessive workloads, insufficient staffing, and client demands. Under such circumstances, auditors may be forced to shorten planning activities, reduce the depth of risk assessments, or allocate inadequate time for understanding client operations and internal control systems (Johari et al., 2019). Previous studies indicate that time budget pressure can impair auditor judgment and reduce the effectiveness of audit procedures (McDaniel, 1990; Otley & Pierce, 1996). Similarly, Khulsum et al. (2025) and Samagaio et al. (2025) argue that constrained audit schedules may limit auditors' ability to perform comprehensive planning activities.

When planning quality deteriorates, audit teams may encounter difficulties in prioritizing tasks, coordinating resources, and identifying critical risk areas. Consequently, weaknesses arising during the planning stage can negatively affect subsequent audit procedures and overall audit quality. Therefore, time budget pressure reasons are expected to undermine the effectiveness of audit planning and resource allocation in audit firms. Therefore:

H1: Reasons for time budget pressure in auditing firms have a negative impact on meticulous planning of audit tasks and resource allocation.

Figure 1. The conceptual model of study



Source: Authors' own work

Supervision is a critical quality-control mechanism within audit engagements because it ensures that audit procedures are executed properly, working papers are reviewed adequately, and professional standards are consistently applied (PCAOB:AS1201, 2010). Effective supervision enables senior auditors to provide guidance, identify deficiencies, and maintain consistency across audit activities (Xing & Wang, 2026). The existence of substantial time budget pressure may weaken supervisory practices because managers and senior auditors are often required to oversee multiple engagements simultaneously while meeting strict deadlines (K et al., 2025; Yan & Xie, 2016). Under such circumstances, supervisors may have limited opportunities to review work thoroughly, provide detailed feedback, or address emerging audit issues. Prior studies have shown that time budget pressure contributes to dysfunctional audit behaviours and increases the likelihood of premature completion of audit procedures (Johansson-Berg et al., 2025; Lai, 2026; Soobaroyen & Chengabroyan, 2007). Furthermore, time budget pressure may shift managerial attention toward completing engagements within budgeted hours rather than ensuring comprehensive supervision and quality assurance. Reduced

supervisory involvement may increase the risk of errors, inconsistencies, and non-compliance with audit procedures (Svanström, 2016). (Balboula & Elfar, 2024) also suggest that excessive workload and occupational stress can negatively influence professional performance and oversight effectiveness. As supervision plays a central role in maintaining audit quality, any reduction in supervisory effectiveness resulting from time budget pressure may adversely affect audit outcomes. Therefore, reasons for time budget pressure are expected to negatively influence the effectiveness of audit team supervision. Thus:

H2: Reasons for time budget pressure in auditing firms have a negative impact on effective supervision of the audit team.

The collection of sufficient and appropriate audit evidence represents one of the most important responsibilities of auditors because audit conclusions and opinions depend on the quality and reliability of the evidence obtained (PCAOB:AS1105, 2025). Auditors are expected to gather evidence through various procedures, including inspection, observation, confirmation, inquiry, and analytical review, to reduce audit risk and support professional judgments (Badpa et al., 2024; Shamsadini et al., 2024). Time budget pressure may directly threaten the evidence-gathering process by limiting the amount of time available for performing audit procedures (Lai, 2026). Under severe deadlines, auditors may reduce sample sizes, omit certain procedures, or rely excessively on less reliable evidence sources. McDaniel (1990) found that time budget pressure negatively affects audit performance, while Braun (2000) demonstrated that auditors facing time constraints may be less effective in detecting errors and irregularities. Previous research also indicates that excessive time budget pressure can encourage premature sign-offs and other dysfunctional audit behaviours that compromise audit quality (Otley & Pierce, 1996; Soobaroyen & Chengabroyan, 2007). Such practices may result in insufficient audit evidence and increase the likelihood of inappropriate conclusions. Because the adequacy of audit evidence forms the basis of professional judgment and reporting decisions, any reduction in evidence quality can significantly undermine audit effectiveness. Accordingly, time budget pressure reasons are expected to reduce auditors' ability to gather sufficient and appropriate evidence during audit engagements. Then:

H3: Reasons for time budget pressure in auditing firms have a negative impact on gathering sufficient and appropriate audit evidence.

The auditor's report represents the final output of the audit process and serves as the primary communication tool between auditors and stakeholders. The credibility of audit reports depends on the auditor's ability to formulate objective conclusions based on sufficient evidence and professional

judgment (PCAOB:AS3101, 2017). Excessive time budget pressure can adversely affect reporting quality because auditors may face pressure to finalize engagements quickly and meet reporting deadlines (Hansen & Seidel, 2026; Singh et al., 2022). Under such circumstances, auditors may devote insufficient time to evaluating evidence, reviewing findings, and carefully considering alternative explanations for identified issues. McDaniel (1990) argues that time budget pressure can impair judgment quality, while Septiana et al. (2025) report that time budget pressure negatively affects professional skepticism, which is essential for objective reporting. Additionally, previous studies have linked time budget pressure to dysfunctional audit behaviours that may compromise reporting integrity and independence (Lai, 2026; Svanström, 2016). When auditors prioritize deadline compliance over professional evaluation, the risk of incomplete disclosures and inappropriate reporting decisions increases. Transparent and independent reporting requires careful consideration of audit findings, professional skepticism, and compliance with auditing standards. Therefore, when auditors experience significant time budget pressure, their ability to prepare high-quality reports may be diminished. Consequently, reasons for time budget pressure are expected to negatively affect the preparation of transparent and independent audit reports. In the light of above:

H4: Reasons for time budget pressure in auditing firms have a negative impact on preparing transparent and independent reports.

Professional auditing standards provide the framework that governs audit planning, execution, documentation, evidence collection, supervision, and reporting. Compliance with these standards is essential for maintaining consistency, reliability, and credibility in audit engagements (PCAOB:AS1000, 2024). However, compliance with professional requirements often requires substantial effort, documentation, and procedural rigor. When auditors operate under significant time constraints, they may experience difficulties in fully complying with all professional requirements (Ely, 2022; Khulsum et al., 2025). Otley and Pierce (1996) identified time budget pressure as a major antecedent of dysfunctional audit behaviour, while Soobaroyen and Chengabroyan (2007) reported that auditors under pressure may under-report time and prematurely complete audit procedures. Time budget pressure may also reduce opportunities for documentation review, quality control procedures, and detailed compliance checks. As a result, auditors may unintentionally overlook certain professional requirements while attempting to complete engagements within prescribed deadlines (Downey, 2018). Previous studies consistently indicate that excessive time budget pressure can weaken professional skepticism, judgment quality, and adherence to audit procedures (Sayed Hussin et al., 2017; Subhan, 2023). Given the importance of professional standards in ensuring audit quality, any deterioration in compliance can negatively affect audit outcomes. Therefore, reasons for time

budget pressure are expected to reduce auditors' adherence to professional standards within audit firms. Therefore:

H5: Reasons for time budget pressure in auditing firms have a negative impact on strict adherence to professional standards in audit firms.

Mitigation strategies are designed to help audit firms manage the challenges associated with time budget pressure through better planning, improved resource allocation, enhanced communication, and effective workload management (Zulhaimi et al., 2022). These practices enable auditors to organize audit activities more efficiently and reduce the operational disruptions caused by tight deadlines. When mitigation strategies are implemented effectively, audit firms are better able to anticipate scheduling conflicts, allocate resources appropriately, and establish realistic audit timetables (Defond & Zhang, 2025). Consequently, the adverse impact of time budget pressure on planning activities is expected to decrease. Hariyani et al. (2025) emphasize that structured planning frameworks can improve audit effectiveness even in complex environments. Accordingly, mitigation strategies are expected to weaken the negative influence of time budget pressure reasons on audit planning quality. Thus:

H6: Time budget pressure mitigation strategies positively moderate the relationship between reasons for time budget pressure and meticulous planning of audit tasks and resource allocation.

Effective mitigation strategies can support supervisory processes by improving coordination mechanisms, communication channels, and workload distribution within audit teams. Enhanced supervision systems allow managers and senior auditors to monitor engagement progress more efficiently despite temporal constraints (PCAOB:AS1201, 2010). Nehme et al. (2021) demonstrated that supervisory practices can reduce the detrimental effects of time budget pressure on audit quality. When audit firms establish strong review procedures and clear supervisory responsibilities, the negative influence of time budget pressure on supervision effectiveness can be substantially reduced (Khulsum et al., 2025). Therefore, mitigation strategies are expected to strengthen supervisory effectiveness and reduce the adverse consequences of time budget pressure. In the light of above:

H7: Time budget pressure mitigation strategies positively moderate the relationship between reasons for time budget pressure and effective supervision of the audit team.

Mitigation strategies can improve evidence collection by facilitating better planning, efficient scheduling, technological support, and more effective audit procedures (Alshurafat & Beattie, 2025; Dodin & Elimam, 1997; Hill, 2001; Kim et al., 2024). Such mechanisms help auditors utilize available

time more effectively while maintaining evidence quality requirements. Hammersley and Ricci (2021) and Lucuț Capraș et al. (2025) emphasize the importance of structured audit programs in supporting evidence collection processes. When mitigation strategies are effectively implemented, auditors can maintain comprehensive evidence-gathering activities despite facing temporal constraints. As a result, mitigation strategies are expected to reduce the negative impact of time budget pressure reasons on evidence collection quality.

H8: Time budget pressure mitigation strategies positively moderate the relationship between reasons for time budget pressure and gathering sufficient and appropriate audit evidence.

Reporting quality depends on auditors' ability to evaluate evidence carefully, exercise professional judgment, and prepare transparent conclusions (PCAOB:AS3101, 2017). Mitigation strategies can support these activities by reducing workload pressures, improving workflow management, and allowing sufficient time for report review and quality assurance (Khulsum et al., 2025; Li et al., 2025; Sayal et al., 2025; Suhardianto et al., 2020). By enhancing organizational support and reducing operational inefficiencies, mitigation strategies help auditors maintain independence and objectivity during the reporting process (Quick et al., 2024). Consequently, auditors are less likely to make hasty reporting decisions when effective mitigation practices are present. Therefore, mitigation strategies are expected to lessen the negative influence of time budget pressure reasons on reporting quality.

H9: Time budget pressure mitigation strategies positively moderate the relationship between reasons for time budget pressure and preparing transparent and independent reports.

Mitigation strategies contribute to maintaining compliance with professional standards by providing adequate resources, improving supervision, supporting documentation processes, and encouraging quality-focused performance evaluation (Hegazy & Tawfik, 2015; Hung et al., 2024; Sidani et al., 2025; Urgan, 2006). These mechanisms reduce the likelihood that auditors will sacrifice professional requirements in response to time constraints. Research suggests that organizational support and effective management practices can reduce dysfunctional audit behaviours associated with time budget pressure (Lai, 2026; Sweeney & Pierce, 2004; Yessie, 2021). Consequently, auditors working in environments characterized by strong mitigation strategies are more likely to comply with professional standards despite experiencing time budget pressure. Therefore, mitigation strategies are expected to weaken the negative relationship between time budget pressure reasons and standards compliance.

H10: Time budget pressure mitigation strategies positively moderate the relationship between reasons for time budget pressure and strict adherence to professional standards.

3. Methodology

3.1 Data Collection and Sampling

The present study adopted a deductive research approach grounded in the positivist research paradigm. This approach is appropriate for examining theoretically derived relationships among latent variables and empirically testing the proposed hypotheses using quantitative techniques. The positivist perspective facilitates the objective measurement of perceptions regarding time pressure reasons, mitigation strategies, and audit quality dimensions among professional auditors working in Iraqi banks. The target population comprised internal auditors employed in Iraqi public and private banks. Given the practical challenges associated with obtaining a complete sampling frame of auditors across all Iraqi banking institutions, a convenience sampling technique was employed. This method enabled the researchers to access qualified respondents who possessed direct experience with audit planning, supervision, evidence collection, reporting, and compliance with professional auditing standards. The selection of auditors as the unit of analysis is particularly relevant because they routinely encounter time-related pressures that may influence the quality of audit activities and professional judgments.

Data were collected through a structured questionnaire consisting of two sections. The first section gathered demographic information about the respondents, including gender, age, educational level, and work experience. These characteristics were collected to provide a comprehensive profile of the participants and to assess the representativeness of the sample. The second section contained 25 measurement items designed to assess the study constructs, namely reasons for time pressure in auditing firms, time pressure mitigation strategies, and the five dimensions of audit quality: meticulous planning of audit tasks and resource allocation, effective supervision of the audit team, gathering sufficient and appropriate audit evidence, preparing transparent and independent reports, and strict adherence to professional standards.

Because Arabic is the primary language used by auditors in Iraq, the questionnaire was prepared in Arabic to ensure clarity, accuracy, and consistency in respondents' interpretation of the measurement items. Prior to full-scale distribution, the questionnaire was reviewed by academic specialists and experienced auditing professionals to verify content validity, linguistic appropriateness, and relevance to the Iraqi banking environment. The survey was administered electronically using Google Forms and distributed through professional networks, banking contacts, and relevant auditing communities. To improve participation rates, follow-up reminders were periodically sent to potential

respondents. Data collection was conducted over several months, allowing sufficient time for auditors to complete the questionnaire voluntarily.

A total of 312 questionnaires were received. After screening for incomplete responses and questionnaires exhibiting excessive missing data, 281 valid responses were retained for statistical analysis. The final sample size was considered adequate for Structural Equation Modelling (SEM-PLS) analysis and provided sufficient statistical power for testing both the direct and moderating relationships proposed in the conceptual model. Table 1 presents the demographic profile of the respondents.

Table 1. Respondents' demographics

<i>Categories</i>	<i>Details</i>	<i>#</i>	<i>%</i>
Gender	<i>Male</i>	233	82.92
	<i>Female</i>	48	17.08
Education	<i>PhD</i>	28	9.96
	<i>MSc</i>	94	33.45
	<i>Bachelor</i>	159	56.58
Age (#years)	<i>Less than 33</i>	95	33.81
	<i>33 – 42</i>	109	38.79
	<i>43 – 52</i>	51	18.15
	<i>More than 52</i>	26	9.25
Job Experience (#years)	<i>Less than 11</i>	69	24.56
	<i>11 – 20</i>	95	33.81
	<i>21 – 30</i>	78	27.76
	<i>More than 30</i>	39	13.88

Notes: N=281

Source: Authors' own work

3.2 Measurement of Constructs

This study examined three principal constructs: reasons for time budget pressure, audit quality, and time budget pressure mitigation strategies. The measurement items were developed based on an extensive review of the auditing literature and established professional auditing standards. Specifically, the construct of Reasons for Time Budget Pressure (TBP) was measured using five items adapted from prior studies addressing auditor workload, deadline pressure, staffing constraints, and audit time budgets (Al-Qatamin, 2020; Broberg et al., 2016; Nehme, 2017; Samagaio et al., 2025; Soobaroyen & Chengabroyan, 2007). These items capture auditors' perceptions regarding the primary organizational and operational factors that create time-related pressure during audit engagements.

The construct of Audit Quality was operationalized as a multidimensional construct comprising five dimensions represented by 15 items. The first dimension, Meticulous Planning of Audit Tasks and

Resource Allocation (Planning), was measured using three items adapted from audit planning literature and professional auditing standards (Dittenhofer, 1994; PCAOB:AS2101, 2025; Pickett, 2012; Porcuna-Enguix et al., 2021). The second dimension, Effective Supervision of the Audit Team (Supervision), was assessed using three items derived from prior studies on audit supervision and quality control (Jati & Suprasto, 2020; PCAOB:AS1201, 2010; Xing & Wang, 2026). The third dimension, Gathering Sufficient and Appropriate Audit Evidence (Evidence), was measured using three items reflecting the adequacy, reliability, and sufficiency of audit evidence (Austin, 2023; Hammersley & Ricci, 2021; PCAOB:AS1105, 2025; Zuca, 2015). The fourth dimension, Preparing Transparent and Independent Reports (Opinion), was measured using three items adapted from audit reporting and auditor independence literature (Backof et al., 2022; Francis, 2023; PCAOB:AS3101, 2017; Vanasco, 1996). Finally, Strict Adherence to Professional Standards (Standards) was measured using three items reflecting auditors' compliance with professional auditing standards and ethical requirements (PCAOB:AS1000, 2024; Quick et al., 2024; Ramadhan, 2026).

The moderating construct, Time Budget Pressure Mitigation Strategies (MS), was measured using five items adapted from studies emphasizing audit planning practices, workload management, supervisory support, technological adoption, and quality-oriented audit management systems (Alshurafat & Beattie, 2025; Jati & Suprasto, 2020; Kokina et al., 2025; Sayal et al., 2025; Zulhaimi et al., 2022). These items assess the extent to which audit firms implement organizational mechanisms designed to reduce the adverse consequences of time budget pressure and maintain audit quality.

In total, the questionnaire consisted of 25 measurement items. All items were measured using a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The use of a standardized Likert scale facilitated the assessment of respondents' perceptions and ensured consistency across all measurement constructs.

3.3 Data Analysis Strategy

The data were analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM) through SmartPLS version 3.2.9. PLS-SEM is widely recognised as an appropriate analytical technique for examining complex relationships among latent constructs measured by multiple indicators, particularly when the objective is theory development and prediction (Hair & Alamer, 2022). Given the multidimensional nature of audit quality and the inclusion of both direct and moderating effects in the proposed research model, PLS-SEM provided a suitable methodological framework for testing the study hypotheses.

The selection of PLS-SEM was justified by several considerations. First, the conceptual model incorporates multiple endogenous constructs, including five dimensions of audit quality and a

moderating variable, resulting in a relatively complex structural framework that can be effectively analysed using PLS-SEM (Hair & Alamer, 2022). Second, the technique enables the simultaneous assessment of the measurement model and structural model, allowing researchers to evaluate construct reliability, convergent validity, discriminant validity, and hypothesised relationships within a single analytical procedure (Hair & Alamer, 2022). Third, PLS-SEM is particularly suitable for examining moderation effects and predicting variance in endogenous constructs, which aligns with the objectives of investigating the influence of time budget pressure reasons on audit quality and the moderating role of mitigation strategies.

Furthermore, the final sample comprised 281 auditors working in Iraqi banks, exceeding the minimum sample size recommendations commonly suggested for PLS-SEM applications. This sample size provides adequate statistical power for estimating the proposed model and testing the direct and moderating relationships among the study constructs. Consequently, PLS-SEM was considered the most appropriate analytical approach for examining the proposed research framework and evaluating the study hypotheses.

4. Results

4.1 Measurement Model Assessment

The measurement model was evaluated to assess the reliability and validity of the study constructs. Reliability was examined using Cronbach's Alpha (α) and Composite Reliability (CR), while validity was assessed through Average Variance Extracted (AVE), the Fornell–Larcker criterion, and the Heterotrait–Monotrait (HTMT) ratio. As presented in Table 2, all constructs demonstrated satisfactory levels of internal consistency reliability. Cronbach's Alpha values ranged from 0.864 to 0.922, exceeding the recommended threshold of 0.70 (Hair & Alamer, 2022). Similarly, Composite Reliability values ranged between 0.917 and 0.950, indicating a high degree of consistency among the measurement items. Specifically, the highest reliability was observed for Standards ($\alpha = 0.922$, CR = 0.950), followed by Mitigation Strategies ($\alpha = 0.920$, CR = 0.939) and Time Budget Pressure ($\alpha = 0.916$, CR = 0.937). These findings confirm that all constructs possess strong internal reliability and are suitable for subsequent structural model analysis. Convergent validity was evaluated using the Average Variance Extracted (AVE). The results indicate that all AVE values exceeded the recommended minimum threshold of 0.50 (Hair & Alamer, 2022), ranging from 0.750 to 0.865. The construct Standards achieved the highest AVE value (0.865), followed by Evidence (0.841) and Opinion (0.840), while Time Budget Pressure reported the lowest AVE value (0.750). Since all constructs explained more than 50% of the variance in their respective indicators, convergent validity was successfully established.

Table 2. Constructs' convergent validity

Constructs	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Evidence	0.905	0.941	0.841
Mitigation Strategies	0.920	0.939	0.756
Opinion	0.905	0.940	0.840
Planning	0.877	0.925	0.803
Standards	0.922	0.950	0.865
Supervision	0.864	0.917	0.786
Time budget Pressure	0.916	0.937	0.750

Source: Authors' own work

Table 3. Constructs' discriminant validity

Constructs	Evidence	Mitigation Strategies	Opinion	Planning	Standards	Supervision	Time budget Pressure
Evidence	0.917	<i>0.038</i>	<i>0.566</i>	<i>0.621</i>	<i>0.494</i>	<i>0.594</i>	<i>0.67</i>
Mitigation Strategies	<i>-0.014</i>	0.870	<i>0.123</i>	<i>0.193</i>	<i>0.272</i>	<i>0.183</i>	<i>0.058</i>
Opinion	<i>0.513</i>	<i>0.109</i>	0.917	<i>0.647</i>	<i>0.560</i>	<i>0.581</i>	<i>0.675</i>
Planning	<i>0.553</i>	<i>-0.18</i>	<i>0.578</i>	0.896	<i>0.454</i>	<i>0.666</i>	<i>0.833</i>
Standards	<i>0.452</i>	<i>0.251</i>	<i>0.513</i>	<i>0.41</i>	0.930	<i>0.362</i>	<i>0.551</i>
Supervision	<i>0.525</i>	<i>-0.166</i>	<i>0.514</i>	<i>0.582</i>	<i>0.323</i>	0.886	<i>0.702</i>
Time budget Pressure	<i>-0.611</i>	<i>0.015</i>	<i>-0.616</i>	<i>-0.748</i>	<i>-0.507</i>	<i>-0.625</i>	0.866

Notes: **Bold number**= $\sqrt{AVE}$, *Italic number*=HTMT

Source: Authors' own work

Discriminant validity was assessed using both the Fornell-Larcker criterion and the HTMT ratio, as shown in Table 3. According to the Fornell-Larcker criterion, the square root of the AVE for each construct (bold diagonal values) should exceed its correlations with other constructs. The results satisfy this requirement, as the square roots of AVE ranged from 0.866 to 0.930, all of which were greater than the corresponding inter-construct correlations. For example, the square root of AVE for Planning (0.896) exceeded its highest correlation with any other construct, while Standards (0.930) and Evidence (0.917) also demonstrated strong discriminant properties. The HTMT values (italicized values above the diagonal) further support discriminant validity. All HTMT ratios were below the recommended threshold of 0.85, with the highest value being 0.833 between Time Budget Pressure and Planning, which remains within acceptable limits. These findings indicate that each construct is empirically distinct from the others and measures a unique conceptual domain.

Thus, the results of the reliability and validity assessments provide strong evidence that the measurement model possesses adequate psychometric properties. Consequently, the constructs exhibit satisfactory internal consistency, convergent validity, and discriminant validity, thereby supporting their suitability for testing the proposed hypotheses and structural relationships.

To further assess the measurement model, multicollinearity among the indicators was examined using the Variance Inflation Factor (VIF). As shown in Table 4, the outer VIF values for all measurement items ranged from 1.902 to 4.633. Specifically, the VIF values for the Time Budget Pressure indicators ranged between 1.902 and 4.633, while those for Mitigation Strategies ranged from 2.536 to 3.316. The indicators of Planning, Supervision, Evidence, Opinion, and Standards also exhibited VIF values within acceptable limits, ranging from 1.989 to 3.548. According to Hair and Alamer (2022), VIF values below 5.0 indicate that multicollinearity is not a serious concern in PLS-SEM analysis. Since all item-level VIF values in this study were below the recommended threshold, the results confirm the absence of problematic collinearity among the indicators. Furthermore, the relatively moderate VIF values suggest that each item contributes unique explanatory information to its respective construct without excessive overlap with other indicators. Consequently, the measurement items demonstrate adequate collinearity statistics and are suitable for inclusion in the subsequent structural model assessment.

Table 4. Items' outer VIF

Items	Outer VIF	Items	Outer VIF	Items	Outer VIF
TBP_item1	2.569	P_item1	1.989	O_item1	2.632
TBP_item2	3.298	P_item2	2.974	O_item2	3.321
TBP_item3	4.633	P_item3	2.786	O_item3	2.994
TBP_item4	1.902	Su_item1	2.019	St_item1	3.261
TBP_item5	2.660	Su_item2	2.457	St_item2	3.476
MS_item1	2.611	Su_item3	2.293	St_item3	3.548
MS_item2	2.536	E_item1	2.901		
MS_item3	2.688	E_item2	3.314		
MS_item4	2.599	E_item3	2.718		
MS_item5	3.316				

Source: Authors' own work

4.2 Structural Model Assessment

The structural model was evaluated to examine the direct effects of Time Budget Pressure (TBP) on the five dimensions of audit quality, Planning, Supervision, Evidence, Opinion, and Standards, as well as the moderating role of Mitigation Strategies (MS). The results of the hypothesis

testing, including path coefficients (β), t-statistics, p-values, effect sizes (f^2), and coefficients of determination (R^2), are presented in Table 5.

Table 5. The path analysis of study model

H	Path	β	SD	T Statistics	P Values	f^2 size	R ²	Results?
H1	Time budget Pressure → Planning	-0.734	0.035	21.034	0.000	1.332	0.600	Accept
H2	Time budget Pressure → Supervision	-0.613	0.043	14.401	0.000	0.647	0.425	Accept
H3	Time budget Pressure → Evidence	-0.601	0.038	15.988	0.000	0.580	0.383	Accept
H4	Time budget Pressure → Opinion	-0.615	0.040	15.507	0.000	0.618	0.394	Accept
H5	Time budget Pressure → Standards	-0.503	0.047	10.661	0.000	0.374	0.329	Accept
H6	TBP x MS_P → Planning	-0.106	0.042	2.506	0.013	0.03	0.600	Accept
H7	TBP x MS_Su → Supervision	-0.095	0.045	2.112	0.035	0.017	0.425	Accept
H8	TBP x MS_E → Evidence	-0.093	0.044	2.102	0.036	0.015	0.383	Accept
H9	TBP x MS_O → Opinion	-0.026	0.043	0.603	0.547	0.001	0.394	Reject
H10	TBP x MS_St → Standards	-0.069	0.050	1.385	0.167	0.008	0.329	Reject

Note: β = Standard regression, SD = Standard Deviation.

NFI = 0.897, SRMR = 0.039

Source: Authors' own work

The findings reveal that Time Budget Pressure exerts a significant negative influence on all five dimensions of audit quality, thereby supporting hypotheses H1–H5. Specifically, the strongest negative effect was observed on Planning (H1: β = -0.734, t = 21.034, p < 0.001), indicating that increased time pressure substantially reduces auditors' ability to effectively plan audit tasks and allocate resources. This relationship also exhibited a very large effect size (f^2 = 1.332), highlighting the critical impact of time pressure on audit planning activities. Furthermore, Time Budget Pressure negatively affected Opinion (H4: β = -0.615, t = 15.507, p < 0.001), Supervision (H2: β = -0.613, t = 14.401, p < 0.001), Evidence (H3: β = -0.601, t = 15.988, p < 0.001), and Standards (H5: β = -0.503, t = 10.661, p < 0.001). These findings confirm that increasing time-related constraints significantly undermine multiple aspects of audit quality within Iraqi banks.

The explanatory power of the model was assessed using the coefficient of determination (R^2). The results indicate that Time Budget Pressure explained 60.0% of the variance in Planning, 42.5% in Supervision, 38.3% in Evidence, 39.4% in Opinion, and 32.9% in Standards. According to commonly accepted guidelines, these values represent moderate to substantial explanatory power, demonstrating the importance of time pressure as a determinant of audit quality dimensions.

The moderating effects of Mitigation Strategies were subsequently examined. The interaction term between Time Budget Pressure and Mitigation Strategies significantly influenced Planning (H6: $\beta = -0.106$, $t = 2.506$, $p = 0.013$), Supervision (H7: $\beta = -0.095$, $t = 2.112$, $p = 0.035$), and Evidence (H8: $\beta = -0.093$, $t = 2.102$, $p = 0.036$). Although the interaction effect sizes were relatively small ($f^2 = 0.030, 0.017$, and 0.015 , respectively), the results indicate that mitigation strategies play a meaningful role in reducing the adverse effects of time pressure on these dimensions of audit quality. Therefore, hypotheses H6, H7, and H8 were supported.

Conversely, the moderating effects of mitigation strategies on Opinion and Standards were not statistically significant. The interaction effect on Opinion (H9: $\beta = -0.026$, $t = 0.603$, $p = 0.547$) and Standards (H10: $\beta = -0.069$, $t = 1.385$, $p = 0.167$) failed to reach statistical significance, leading to the rejection of H9 and H10. These findings suggest that while mitigation strategies can alleviate the detrimental influence of time pressure on planning, supervision, and evidence collection, they are less effective in protecting auditors' reporting judgments and compliance with professional standards under conditions of high time pressure.

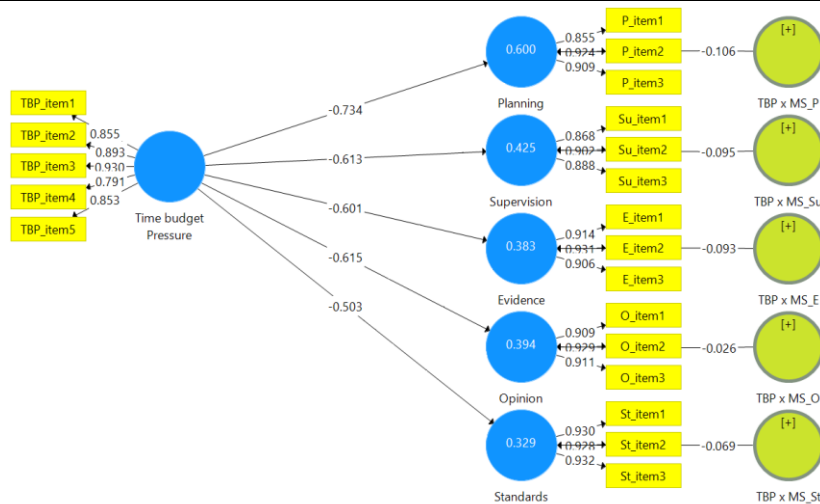
Therefore, the structural model provides strong empirical evidence that time budget pressure constitutes a major threat to audit quality. At the same time, the findings demonstrate that mitigation strategies can partially buffer these negative effects, particularly in operational audit activities such as planning, supervision, and evidence gathering. Figure 2 illustrates the structural relationships among the study constructs and presents the standardized path coefficients obtained from the PLS-SEM analysis.

4.3 Model Fit Indices

The overall model fit was assessed using the Standardized Root Mean Square Residual (SRMR) and the Normed Fit Index (NFI). As reported in Table 5, the model achieved an SRMR value of 0.039, which is well below the recommended threshold of 0.08, indicating a satisfactory fit between the empirical data and the proposed model structure. The model also produced an NFI value of 0.897, which is very close to the recommended benchmark of 0.90 and suggests an acceptable level of model fit. Taken together, these fit indices indicate that the proposed research model adequately represents the observed data and provides a reliable framework for examining the relationships among time

budget pressure, mitigation strategies, and audit quality dimensions. The satisfactory model fit, combined with the strong measurement model results and significant structural relationships, confirms the robustness of the proposed conceptual framework and supports its applicability within the context of Iraqi banking auditors.

Figure 2. The structural model of study



Source: Authors' own work

5. Discussion

The primary objective of this study was to investigate the impact of time budget pressure on multiple dimensions of audit quality and to examine whether mitigation strategies can reduce the detrimental consequences of such pressure among auditors working in Iraqi banks. The findings provide strong evidence that time budget pressure represents a significant challenge to audit quality and confirm that its influence extends across planning, supervision, evidence collection, reporting quality, and compliance with professional standards. At the same time, the results demonstrate that mitigation strategies can partially alleviate these adverse effects, although their effectiveness varies across audit quality dimensions.

The findings support H1, which proposed a negative relationship between time budget pressure and meticulous planning of audit tasks and resource allocation. The substantial negative coefficient ($\beta = -0.734$) and large effect size indicate that planning is the audit quality dimension most vulnerable to time constraints. This result is consistent with the arguments of Dittenhofer (1994), Pickett (2012), and Porcuna-Enguix et al. (2021), who emphasize that effective audit planning requires adequate time for risk assessment, resource allocation, and the development of audit strategies. When auditors face excessive time pressure, they are more likely to shorten planning activities and focus on immediate

task completion rather than comprehensive engagement preparation. The finding also aligns with Johari et al. (2019), Khulsum et al. (2025), and Samagaio et al. (2025), who reported that workload pressures and constrained audit schedules reduce the effectiveness of planning activities and increase the likelihood of audit deficiencies.

The results also support H2, demonstrating that time budget pressure negatively affects audit supervision. This finding suggests that under severe time constraints, supervisors may devote less attention to reviewing working papers, mentoring junior auditors, and monitoring engagement quality. The result corroborates the assertions of PCAOB:AS1201 (2010), Yan and Xie (2016), and Xing and Wang (2026), who emphasize the importance of supervisory oversight in maintaining audit quality. It also supports previous evidence indicating that workload pressure can shift managerial attention away from quality assurance and toward deadline compliance (Balboula & Elfar, 2024; Svanström, 2016). Consequently, reduced supervisory effectiveness may increase the likelihood of errors, inconsistencies, and incomplete audit procedures.

The significant negative effect of time budget pressure on evidence collection supports H3. This result confirms that auditors experiencing high levels of time pressure may reduce testing procedures, rely on less reliable evidence, or collect insufficient supporting documentation. The finding is consistent with the work of Braun (2000), McDaniel (1990), and Hammersley and Ricci (2021), who argue that adequate evidence collection requires sufficient time and careful execution of audit procedures. Similarly, Soobaroyen and Chengabroyan (2007) found that time pressure encourages premature sign-offs and other dysfunctional behaviours that compromise evidence quality. Since evidence forms the foundation of audit conclusions, reductions in evidence sufficiency and appropriateness directly threaten audit reliability and effectiveness.

The findings further support H4, indicating that time budget pressure negatively affects auditors' ability to prepare transparent and independent reports. This result is consistent with Francis (2023) and Larmande and Lesage (2023), who argue that reporting quality depends heavily on professional judgment, critical evaluation of evidence, and objective decision-making. Under severe time constraints, auditors may devote insufficient effort to reviewing findings, considering alternative interpretations, or evaluating complex issues. Consequently, the risk of inappropriate reporting decisions increases. The result also supports the findings of Hansen and Seidel (2026), Singh et al. (2022), and Septiana et al. (2025), who reported that time pressure weakens professional skepticism and impairs reporting quality.

The negative relationship between time budget pressure and adherence to professional standards provides support for H5. This finding confirms that excessive time constraints can reduce auditors' ability to fully comply with auditing standards, documentation requirements, and

professional procedures. The result is consistent with Otley and Pierce (1996), Soobaroyen and Chengabroyan (2007), and Ely (2022), who found that time pressure encourages procedural shortcuts and increases the likelihood of dysfunctional audit behaviour. Similarly, Sayed Hussin et al. (2017) and Subhan (2023) reported that time pressure weakens professional skepticism and compliance with established auditing practices. The finding highlights the risk that auditors may sacrifice procedural rigor in order to satisfy budgeted time requirements.

The moderation analysis provides important additional insights. The significant moderating effect observed for H6 indicates that mitigation strategies reduce the negative impact of time budget pressure on audit planning. This finding supports the argument that realistic scheduling, improved resource allocation, and proactive workload management enable auditors to maintain planning quality despite temporal constraints. The result is consistent with Defond and Zhang (2025), Hariyani et al. (2025), and Zulhaimi et al. (2022), who emphasize the importance of structured planning systems in enhancing audit effectiveness under challenging conditions.

Similarly, the support for H7 demonstrates that mitigation strategies weaken the adverse influence of time budget pressure on supervision. This finding suggests that organizational interventions, such as clearer supervisory responsibilities, stronger review procedures, and improved communication mechanisms, can help maintain oversight effectiveness even when auditors face demanding schedules. The result aligns with Nehme et al. (2021), Khulsum et al. (2025), and PCAOB:AS1201 (2010), all of which highlight the importance of supervisory support in preserving audit quality under conditions of pressure.

The significant moderating effect found for H8 further indicates that mitigation strategies help protect the quality of evidence collection. This result suggests that structured audit programs, technological support, and effective scheduling mechanisms allow auditors to continue gathering sufficient and appropriate evidence despite time constraints. The finding supports the arguments of Hammersley and Ricci (2021), Kim et al. (2024), Alshurafat and Beattie (2025), and Lucuț Capraș et al. (2025), who emphasize that modern audit practices and digital tools can improve audit efficiency without compromising evidence quality.

In contrast, H9 and H10 were not supported. The moderating effect of mitigation strategies on the relationships between time budget pressure and both reporting quality and adherence to professional standards was statistically insignificant. These findings suggest that although mitigation strategies are effective in improving operational audit activities such as planning, supervision, and evidence collection, they may be insufficient to counteract the deeper cognitive and ethical consequences of time pressure. Reporting quality and compliance with professional standards rely heavily on professional judgment, independence, skepticism, and ethical decision-making (Francis,

2023; Quick et al., 2024; Ramadhan, 2026). These attributes are not easily enhanced through scheduling improvements, resource allocation, or technological support alone.

One possible explanation is that auditors facing severe time pressure continue to experience psychological stress even when organizational mitigation mechanisms are available. Previous research has shown that time pressure influences judgment quality, ethical reasoning, and professional skepticism through cognitive overload and work-related stress (Aoife et al., 2025; Henriques & Samagaio, 2024; Lai, 2026). Consequently, mitigation strategies may improve the execution of audit procedures while having limited influence on higher-level reporting judgments and standards compliance. Another explanation is that reporting decisions and professional standards involve individual accountability and ethical responsibility that cannot be fully delegated to organizational systems. Therefore, while mitigation strategies can support auditors operationally, they may not completely neutralize the professional consequences of sustained time pressure.

Thus, the findings reinforce the view that time budget pressure constitutes a major threat to audit quality across multiple dimensions. The study extends prior literature by demonstrating that mitigation strategies do not exert a uniform protective effect across all aspects of audit quality. Instead, their effectiveness appears strongest in operational processes such as planning, supervision, and evidence collection, while their influence on reporting quality and professional standards remains limited. These findings contribute to a more nuanced understanding of how audit firms can manage time pressure and highlight the need for additional interventions aimed at strengthening professional judgment, ethical resilience, and compliance behaviour among auditors.

6. Conclusion

This study examined the impact of time budget pressure on audit quality and investigated the moderating role of mitigation strategies among auditors working in Iraqi banks. The findings demonstrate that time budget pressure significantly and negatively affects all dimensions of audit quality, including planning, supervision, evidence collection, reporting quality, and adherence to professional standards. The strongest effect was observed on audit planning, highlighting the vulnerability of early-stage audit activities to temporal constraints. Furthermore, the results revealed that mitigation strategies partially alleviate the negative effects of time budget pressure on planning, supervision, and evidence collection. However, these strategies were not effective in moderating the relationships between time budget pressure and reporting quality or compliance with professional standards. Overall, the study confirms that time budget pressure remains a major obstacle to achieving high-quality audits and that organizational interventions can only partially offset its adverse consequences.

6.1 Theoretical Implications

This study contributes to the auditing literature by extending current understanding of how time budget pressure influences multiple dimensions of audit quality rather than treating audit quality as a single aggregate construct. By simultaneously examining planning, supervision, evidence collection, reporting quality, and standards compliance, the study provides a more comprehensive explanation of the mechanisms through which time pressure affects audit performance. In addition, the findings enrich auditor behaviour and occupational stress perspectives by demonstrating that the consequences of time budget pressure vary across different audit activities. The study also advances theory by identifying the boundary conditions of mitigation strategies. While mitigation mechanisms successfully reduce the negative effects of time pressure on operational audit processes, they do not significantly protect reporting judgments and compliance with professional standards. This finding suggests that organizational interventions alone may be insufficient to address the cognitive and ethical consequences of time pressure, thereby opening new avenues for future theoretical development regarding auditor judgment, professional skepticism, and audit quality under constrained working conditions.

6.2 Practical and Managerial Implications

The findings provide several important implications for audit firms, bank management, professional accounting bodies, and regulators. First, audit firms should adopt realistic audit schedules and workload allocation practices to minimize excessive time budget pressure and improve planning quality. Second, firms should strengthen supervisory systems and review procedures to ensure that auditors receive adequate guidance during high-pressure engagements. Third, investment in digital audit technologies, automated documentation systems, and data analytics tools can enhance efficiency and support evidence collection without compromising audit quality. Fourth, professional bodies and regulators should encourage quality-oriented performance evaluation systems that prioritize audit quality over strict compliance with budgeted hours. The findings also indicate that mitigation strategies alone may not be sufficient to preserve reporting quality and adherence to professional standards. Consequently, audit firms should complement operational mitigation mechanisms with continuous professional training, ethical awareness programs, and initiatives aimed at strengthening professional skepticism and independent judgment. Such measures can help auditors maintain high-quality reporting and standards compliance even under demanding time constraints.

7. Limitations and Future Research Directions

Despite its theoretical and practical contributions, this study is subject to several limitations that should be considered when interpreting the findings. First, the study employed a cross-sectional research design, which captures respondents' perceptions at a single point in time. Although this approach is appropriate for examining associations among variables, it limits the ability to establish causal relationships between time budget pressure, mitigation strategies, and audit quality dimensions. Future studies could adopt longitudinal designs to investigate how the effects of time pressure evolve across different audit engagements and over time.

Second, the study relied on self-reported data collected through questionnaires, which may be susceptible to common method bias, social desirability bias, and subjective interpretation. Although the measurement model demonstrated satisfactory reliability and validity, auditors may have underestimated or overestimated the extent of time pressure and audit quality practices within their organizations. Future research could complement survey data with objective audit performance indicators, archival records, supervisor evaluations, or qualitative interviews to provide a more comprehensive assessment.

Third, the study focused exclusively on auditors working in Iraqi banks, which may limit the generalizability of the findings to other sectors, industries, and national contexts. Banking institutions operate within highly regulated environments that may differ substantially from manufacturing, public-sector, insurance, telecommunications, or external audit firm settings. Future studies should examine the proposed model across different industries and countries to determine the extent to which contextual factors influence the observed relationships.

Fourth, although mitigation strategies were examined as a moderating construct, the study treated them as a unified organizational mechanism. In practice, mitigation strategies may consist of multiple dimensions, including technological support, supervisory practices, workload management, staffing policies, training initiatives, and quality control systems. Future research could investigate these dimensions separately to identify which specific strategies are most effective in reducing the negative effects of time budget pressure.

The findings also revealed that mitigation strategies significantly moderated the relationships between time budget pressure and planning, supervision, and evidence collection, but failed to moderate the relationships involving reporting quality and adherence to professional standards. This result suggests that additional variables may influence auditors' reporting judgments and compliance behaviour. Therefore, future studies could examine the mediating or moderating roles of factors such as professional skepticism, auditor resilience, ethical climate, organizational culture, audit experience, emotional exhaustion, psychological stress, leadership style, and auditor independence. These

variables may provide deeper insights into the mechanisms through which time pressure affects higher-order professional judgments.

Finally, future research may employ advanced analytical approaches, such as multilevel modelling, longitudinal SEM, mixed-methods designs, experimental studies, or comparative cross-country investigations, to further explore the complex relationship between time budget pressure and audit quality. Such efforts would contribute to a more comprehensive understanding of how audit firms can effectively manage time constraints while maintaining high standards of audit quality and professional performance.

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Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this manuscript.

Authors' contributions

All authors contributed equally to the conception and design of the study. All authors have read and agreed to the published this version of the manuscript.

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Data availability

The datasets analysed during the current study are available from the corresponding author on reasonable request.

Appendix A. Study's Questionnaire Items

A. Reasons for Time Budget Pressure (TBP)

TBP_item1: Our audit engagements are frequently constrained by unrealistic audit deadlines. TBP_item2: The workload assigned to auditors often exceeds the time available for completing audit tasks. TBP_item3: Insufficient staffing in audit teams increases time pressure during audit engagements. TBP_item4: Unexpected client requests and changes create significant pressure on audit schedules. TBP_item5: Regulatory reporting requirements force auditors to complete work within very limited timeframes.

B. Meticulous Planning of Audit Tasks and Resource Allocation (Planning)

P_item1: Audit engagements are supported by comprehensive planning before audit fieldwork begins. P_item2: Audit resources are allocated effectively according to engagement risks and priorities. P_item3: Audit schedules provide sufficient time for completing planned audit procedures.

C. Effective Supervision of the Audit Team (Supervision)

Su_item1: Senior auditors closely monitor the progress of audit activities throughout the engagement. Su_item2: Audit team members receive timely guidance and feedback from supervisors. Su_item3: Audit working papers are thoroughly reviewed before the completion of audit engagements.

D. Gathering Sufficient and Appropriate Audit Evidence (Evidence)

E_item1: Auditors obtain sufficient evidence to support audit conclusions. E_item2: Audit evidence is collected from reliable and relevant sources. E_item3: Audit procedures are performed thoroughly to ensure the adequacy of collected evidence.

E. Preparing Transparent and Independent Reports (Opinion)

O_item1: Audit reports are prepared objectively without undue influence from clients. O_item2: Audit opinions accurately reflect the results of audit examinations. O_item3: Audit reports provide transparent and reliable information to stakeholders.

F. Strict Adherence to Professional Standards (Standards)

St_item1: Auditors consistently comply with applicable auditing standards during engagements. St_item2: Professional skepticism is maintained throughout the audit process. St_item3: Audit documentation fully complies with professional and regulatory requirements.

G. Time Budget Pressure Mitigation Strategies (MS)

MS_item1: Our audit firm develops realistic audit schedules before engagements begin. MS_item2: Additional resources are allocated when audit engagements experience excessive time pressure. MS_item3: Supervisors actively assist audit teams in managing workload and deadlines. MS_item4: Digital audit tools are used to improve audit efficiency and reduce time constraints. MS_item5: Audit quality is prioritized over merely completing engagements within budgeted time.

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