Transforming Audit Practices in the Digital Era: Interview-Based Insights on Capability, Compliance, and Cultural Barriers in the Public Sector

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Abstract

Purpose: The current study investigated how digitalisation transformed internal auditing practices within the public sector in Malaysia by focusing on three (3) interrelated dimensions, namely, capability development, compliance and regulatory alignment, and cultural and organisational adaptation, seeking to have a deeper understanding of how the above dimensions could collectively shape the effectiveness and sustainability of digital audit implementation.

Design/ Methodology: This study employed a qualitative exploratory design using semi-structured interviews, which were conducted with a total of 27 internal auditors from Malaysian public-sector agencies, with the collected interview data analysed through a thematic analysis to identify recurring patterns and institutional challenges associated with digital audit transformation.

Findings: The findings revealed that digital auditing could improve audit efficiency, transparency, data accessibility, and fraud detection capabilities. Nonetheless, the transformation process continued to be constrained by limited digital competencies, inadequate practical training, fragmented regulatory frameworks, cybersecurity concerns, and resistance to organisational change, which necessitated leadership support, interdepartmental collaboration, and continuous organisational learning to sustain the effort of digital audit implementations

Originality/ Value: The present study contributed to the digital auditing literature by offering a qualitative socio-technical analysis of how capability development, regulatory alignment, and organisational culture would interact to shape digital audit transformation in the Malaysian public sector, while proposing an integrated framework linking technological readiness with institutional and cultural adaptation to support sustainable digital governance.

Practical Implications: The current results highlighted the requirement to introduce structured programmes for digital capability development, harmonised digital audit regulations, stronger cybersecurity governance, and leadership-driven cultural transformation to support sustainable digital auditing practices within the public sector in Malaysia.

Keywords: Digital auditing, internal audit, digital forensic framework, public sector, Malaysia

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1.0 Introduction

The digital transformation of auditing has emerged as a defining feature of contemporary governance by reshaping existing frameworks of accountability, transparency, and assurance in both public and private institutions. Specifically, the incorporation of advanced technologies, such as artificial intelligence (AI), robotic process automation, and data analytics, has revolutionised the current audit methodologies, which have enabled continuous monitoring, real-time reporting, and predictive risk assessment (Volodina & Grossi, 2024; Otia & Bracci, 2022). Moreover, the above global movement towards digital auditing has reflected a broader shift in governance paradigms by emphasising evidence-based decision-making, automation, and enhanced data integrity (Argento et al., 2025). Meanwhile, despite the potential benefits of digital transformation that have been widely acknowledged, the transition process remains uneven across regions, as it has often been shaped by the levels of institutional capacity, regulatory maturity, and cultural readiness (Betti & Sarens, 2021; Pizzi et al., 2021). Globally, public-sector institutions have begun to adopt digital tools to help improve efficiency, reduce human error, and strengthen fraud prevention, especially across developed economies, including Europe and North America, which have implemented advanced audit analytics and blockchain-embedded traceability to improve existing oversight mechanisms (Rakipi et al., 2020). Conversely, emerging economies have encountered more challenges in establishing integrated digital audit frameworks, owing to limited infrastructure and a lack of standardised policy guidance (Ahmad et al., 2023). Thus, within the above broader global evolution, Malaysia represents a profound empirical setting, owing to its ongoing efforts to modernise governance in the public sector through national digital transformation initiatives, such as the Malaysia Digital Economy Blueprint (MyDIGITAL) and the Public-Sector Digitalisation Strategic Plan, which aim to strengthen existing degrees of transparency, accountability, and administrative efficiency through technology-driven governance.

Despite increasing investments in digital infrastructure and e-governance systems, the implementation of digital auditing in the Malaysian public sector remains uneven across various public institutions, especially when numerous public-sector agencies continue to rely on fragmented legacy systems, manual audit procedures, and inconsistent digital governance practices, which have limited the effectiveness of technology-driven auditing processes and posed substantial institutional and operational challenges related to digital capability, regulatory readiness, cybersecurity governance, and organisational adaptation. Thus, Malaysia provides a relevant and timely context for examining how public-sector institutions navigate the complexities of digital audit transformation in an emerging economy. Although there have been advancements, there also remain profound challenges in developing the necessary technical capabilities and regulatory frameworks for digital auditing, as a more effective process of implementation will require a workforce proficient in data analytics, information system assurance, and cybersecurity management (Ilori, 2024; Usul & Alpay, 2025). Similar to multiple developing economies, the adoption of technology in audit practices in Malaysia has often outpaced the development of digital competencies among audit professionals. Moreover, legal frameworks governing digital evidence, data protection, and automated decision systems remain insufficiently harmonised with the latest international standard (Azizi et al., 2024), which can weaken compliance and erode confidence in digital audit outcomes, particularly when audit evidence is generated by algorithmic or AI systems (Udrescu, 2024). Therefore, capacity building and regulatory modernisation have become vital in guaranteeing that digital transformation in auditing can achieve both efficiency and accountability.

Having only technological modernisation is not sufficient to guarantee a successful digital transformation, in which the current literature has increasingly highlighted the influence of cultural and organisational dynamics in shaping the effectiveness of digital audit reformations (Betti et al., 2021; Wissal et al., 2025), Particularly, key factors, such as hierarchical structures, limited leadership commitment, and resistance to change, continue to constrain innovation in public audit environments, including in Malaysia, where public-sector institutions have historically operated within a highly procedural administrative culture. As such, cultivating a digital culture, which is grounded in trust, openness, and continuous learning, is essential to support technology adoption (Ilori, 2024), as without sufficient levels of organisational readiness and cultural adaptability, technological investment may remain underutilised, thereby hindering the broader objectives of governance reformation and digital accountability (Mokhtar et al., 2024). Accordingly, in the current study, the factors influencing the transformation of audit practices in the digital era were investigated, with a particular focus on capability, compliance, and cultural barriers in the Malaysian public sector. Meanwhile, despite the growing body of literature on digital transformation in auditing, existing studies have primarily focused on technological adoption, audit efficiency, and system implementation, with comparatively limited attention offered to the interconnected influence of human capability, regulatory alignment, and organisational culture within the public sector. Furthermore, prior research predominantly relied on quantitative approaches and private-sector contexts, which rendered a substantial gap in qualitative evidence from emerging economies, including Malaysia, hence leading to an insufficient understanding of how institutional readiness, compliance structures, and cultural dynamics would collectively shape the sustainability of digital audit transformation among public-sector organisations. As a result, the current study could address the above gap by offering an integrated qualitative examination of capability development, compliance readiness, and organisational adaptation in the internal auditing landscape of the Malaysian public sector.

2.0 Literature Review

2.1 Conceptual Framework

The conceptual framework of the present study was theoretically grounded in institutional and socio-technical theories to explain how digital transformation in public-sector internal auditing was shaped by the interaction between organisational structures, technological systems, and human behaviour. In particular, the institutional theory posited that public-sector organisations are frequently influenced by regulatory pressures, governance expectations, and professional norms, which shape the adoption of digital auditing practices, wherein, in the Malaysian public sector, initiatives related to national digital governance and accountability requirements have generated profound institutional pressure for audit modernisation. Meanwhile, the socio-technical theory emphasises that successful digital transformation mainly depends on the alignment between technological capability, organisational processes, and human adaptation. Accordingly, the current study conceptualised digital audit transformation as a socio-organisational process shaped by the interrelationship between capability development, compliance and regulatory alignment, and cultural and organisational adaptation, which were supported by institutional and organisational theories to delineate how technological innovation would interact with governance structures and human behaviours to drive digital change (Argento et al., 2025; Pizzi et al., 2021). Contrary to previous studies that examined digital auditing primarily from technological or compliance perspectives, the present study proposed an integrated socio-technical framework that regarded digital audit transformation as an interaction between institutional capability, regulatory alignment, and organisational culture, thus extending the existing literature on digital audit by recognising that only technological implementation would not be adequate without cultural readiness and governance support.

Capability development represents the foundational elements of the current conceptual framework, which encompasses the technical, analytical, and managerial competencies that enable auditors to more effectively apply digital tools in respective audit functions. Prior research also emphasised that digital transformation would require auditors to possess advanced data analytics skills and sufficient technological literacy to maintain audit quality and efficiency (Betti & Sarens, 2021; Gökoğlan et al., 2025). Moreover, in the public-sector context, capability building should include institutional support, structured training programmes, and system integration to guarantee more sustainable adoption (Ilori, 2024; Usul & Alpay, 2025). Meanwhile, compliance and regulatory alignment, which is the second dimension of the conceptual framework, denote the institutional mechanisms that help safeguard accountability and integrity in digital auditing, which seek to address the need for relevant policies that recognise digital evidence, data governance, and ethical standards in audit operations. Similarly, existing studies have highlighted that although developed nations have codified standards for digital auditing, developing countries continue to be observed with several gaps in regulatory readiness and policy coordination (Volodina & Grossi, 2024; Otia & Bracci, 2022). In Malaysia, audit reformations have also begun to incorporate digital processes, yet the legal and procedural frameworks remain fragmented (Ahmad et al., 2023; Mustafa et al., 2024). Therefore, the above alignment is essential for legitimising digital audit outcomes and guaranteeing a higher degree of consistency across multiple public institutions. Comparatively, cultural and organisational adaptation serves as an enabling environment that determines whether technological and regulatory advances can be effectively sustained. Particularly, organisational culture, leadership commitment, and openness to innovation play key roles in fostering an ecosystem that is conducive to digital change (Wissal et al., 2025; Mokhtar et al., 2024). Past scholars also elucidated that cultural resistance, hierarchical structures, and limited communication continued to be among the most persistent barriers to transformation among public-sector institutions (Betti et al., 2021; Saengsith & Suntraruk, 2023), which highlighted the importance of developing a culture of collaboration and learning for embedding digital practices into the daily functions of internal auditing (Radwan et al., 2021). As illustrated in Figure 1, capability development provides the technical and operational foundation, compliance offers a regulatory structure, and culture guarantees institutional acceptance and continuity, with the interplay among the three (3) dimensions above producing a cohesive framework that can explain how the public sector in Malaysia can achieve an effective, transparent, and sustainable digital transformation in the process of internal auditing.

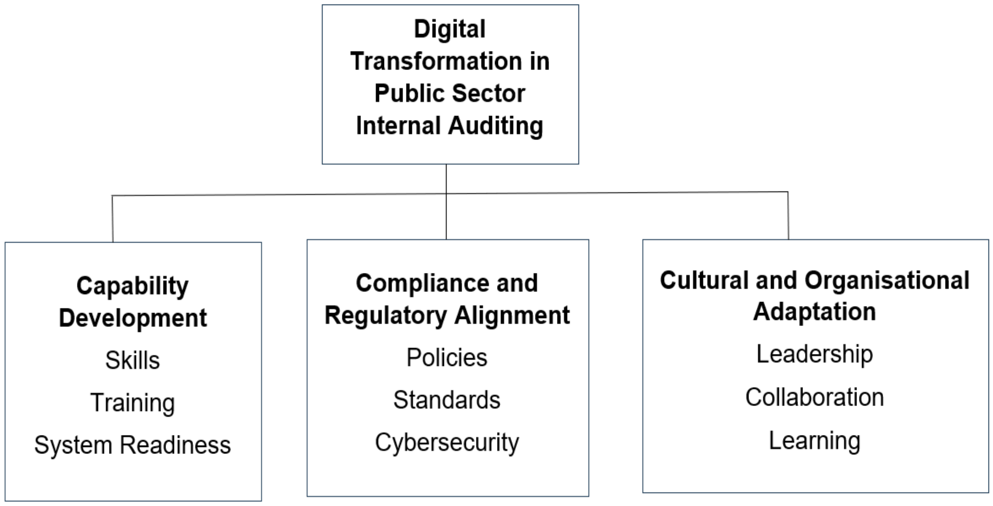

Figure 1: Conceptual Framework for Digital Transformation
Source: Authors' work

2.2 Critical Review of Digital Transformation in Public Sector Auditing

The evolution of digital auditing has led to profound academic discourses regarding whether technological advancements can genuinely improve governance accountability or merely introduce different institutional and operational risks. Specifically, existing studies have generally agreed that technologies, such as AI, robotic process automation, and data analytics, can contribute to higher levels of audit efficiency, transparency, and real-time monitoring capabilities (Volodina & Grossi, 2024; Otia & Bracci, 2022), although there remain debates on the broader implications of digital transformation for public-sector governance. For instance, certain researchers have contended that digitalisation can help strengthen audit quality and institutional accountability through predictive analytics and automated assurance systems (Argento et al., 2025; Pizzi et al., 2021), whereas other scholars have cautioned that excessive dependence on technology may create cybersecurity vulnerabilities, algorithmic opacity, and weakened professional judgement in the processes of auditing (Azizi et al., 2024; Udrescu, 2024). In addition, a majority of the existing literature has concentrated predominantly on technological opportunities rather than the critical discussion of organisational readiness, institutional resistance, and regulatory fragmentation within public-sector environments, particularly in emerging economies such as Malaysia.

A growing body of knowledge has focused on how digital transformation can reshape the competencies required of internal auditors and redefine the operational logic of existing audit systems, wherein the current researchers have consistently highlighted the importance of digital literacy, data analytics, and cybersecurity competence in supporting technology-driven auditing practices (Betti & Sarens, 2021; Gökoğlan et al., 2025). Nevertheless, disagreement remains regarding whether public-sector institutions possess sufficient organisational readiness to sustain the above transformations, as, despite the ability of digitalisation enhancing strategic risk management and audit responsiveness (Rakipi et al., 2020; Betti et al., 2021), there are persistent capability gaps owing to limited training, inadequate infrastructure, and uneven institutional support (Ilori, 2024; Usul & Alpay, 2025). Notably, prior scholars often conceptualised capability development mainly as a technical issue without offering sufficient attention to how organisational culture, leadership commitment, and institutional learning environments would influence the abilities of auditors to adapt to digital systems, particularly in emerging public-sector contexts, wherein existing bureaucratic structures and resource disparities might constrain digital readiness.

Another major debate in the current digital auditing literature concerns whether existing regulatory and governance frameworks are adequately prepared to support technology-driven audit practices. Although most scholars have widely acknowledged that digital systems can help improve audit traceability, fraud detection, and compliance monitoring (Mustafa et al., 2024; Azizi et al., 2024), there remain unresolved concerns, especially regarding the legal validity of digital evidence, cybersecurity governance, and ethical implications of algorithm-based auditing systems (Udrescu, 2024; Otia & Bracci, 2022). Similarly, despite developed economies gradually introducing standards pertinent to governing digital audit assurance and electronic evidence management, numerous developing countries continue to experience fragmented regulatory coordination and inconsistent digital governance practices (Volodina & Grossi, 2024; Ahmad et al., 2023). Additionally, past studies frequently presumed that technological implementation would automatically improve accountability, despite limited empirical evidence on how institutional regulatory weaknesses would undermine audit reliability and public trust. Therefore, further investigation is necessary to have a deeper understanding of how public-sector institutions can more effectively navigate the tension between digital innovation and regulatory readiness.

Cultural and organisational factors can complicate the process of digital audit transformation, as, despite substantial scholarly attention to technological innovation, existing studies have highlighted that cultural resistance, bureaucratic inertia, and fear of transparency are among the most persistent barriers to the implementation of digital audits (Betti et al., 2021; Wissal et al., 2025). Furthermore, the current literature has demonstrated that transformation is most successful in institutions with participative leadership, open communication, and a culture of learning (Ilori, 2024; Saengsith & Suntraruk, 2023). Nonetheless, existing research has often isolated cultural and behavioural variables from broader governance dynamics, which has led to an incomplete understanding of how institutional culture can mediate the relationship between technology adoption and audit effectiveness. Similarly, in Malaysia, hierarchical structures and risk-averse cultures have frequently been cited as the key inhibitors of innovation, with only a few empirical studies exploring how such organisational conditions can shape the trust, motivation, and engagement of auditors in digital environments (Mokhtar et al., 2024), thus restricting the explanatory power of the current digital transformation models, which remain overly technology-centric. Moreover, although the existing body of knowledge has offered valuable insights, there remain substantial conceptual and empirical deficiencies, especially when most of the existing studies have addressed digital auditing from single-dimensional perspectives, namely, either technological, regulatory, or cultural, without incorporating the above factors into a more holistic analytical framework (Argento et al., 2025; Wissal et al., 2025). In addition, existing empirical evidence from emerging economies, particularly Malaysia, remains scarce and fragmented, due to a predominant reliance on quantitative surveys rather than interpretive experience-based enquiry (Ahmad et al., 2023; Udrescu, 2024). There has also been limited theoretical engagement regarding how capability, compliance, and culture interact to shape the effectiveness of digital auditing systems. In sum, the above gaps highlight the need for qualitative and context-specific studies that focus on digital transformation not merely as a technological phenomenon but also as a socio-organisational process that is embedded within cultural and institutional realities. As such, the present study responded to the above need by exploring the interrelationships among capability development, compliance readiness, and cultural adaptation in the transformation process of audit practices within the Malaysian public sector.

3.0 Methodology

3.1 Research Design and Context

The present study employed a qualitative exploratory design to appraise how digital transformation would reshape existing audit practices in the Malaysian public sector. Specifically, a qualitative approach was deemed appropriate, owing to its ability to offer a deeper understanding of perceptions, experiences, and institutional realities that could not be captured by quantitative methodologies, particularly when a majority of previous studies concentrated on technological adoption and audit efficiency (Betti & Sarens, 2021; Rakipi et al., 2020), instead of the behavioural and cultural dimensions of digital transformations. Hence, the evolving landscape of digital governance initiatives in Malaysia offered a pertinent setting for the current enquiry, which would garner key perspectives on how developing economies could adapt existing auditing functions to fulfil the demands of a data-driven environment.

3.2 Sampling and Participants

Purposive sampling was employed to identify participants with direct professional involvement in internal auditing, governance, compliance, or digital system implementation among public-sector institutions in Malaysia. Particularly, the inclusion criteria required participants to (1) hold a position related to internal audit, financial governance, or compliance management, (2) possess at least three (3) years of working experience in the public sector, and (3) have direct exposure to digital auditing systems, digital governance initiatives, or technology-assisted audit processes within the current institutions. As a result, a total of 27 participants were recruited from various public-sector agencies, including federal departments, statutory bodies, local authorities, and government-linked administrative institutions, which could help capture a broader range of institutional experiences and perspectives on digital audit transformation. The participants consisted of operational auditors, middle-level audit officers, senior audit managers, and governance personnel with responsibilities related to audit oversight and compliance functions, and they were recruited through professional networks and formal institutional communication channels. Accordingly, initial invitations explaining the purpose of the study were distributed via email and professional contacts, followed by voluntary participation confirmation from interested parties, with the process of sampling continuing until thematic saturation was achieved, namely, no substantially different themes or insights emerged from subsequent interviews.

3.3 Data Collection Procedure

The data were collected through semi-structured interviews conducted between January 2025 and March 2025, which aimed to explore the experiences, perceptions, and institutional challenges of the participants related to digital transformation in public-sector internal auditing. Accordingly, an interview protocol was developed based on the conceptual framework of the present study by focusing on three (3) key dimensions, namely, capability development, compliance and regulatory alignment, and cultural and organisational adaptation. All interviews were conducted in either English or Bahasa Malaysia, depending on the language preference of the participants, to guarantee adequate degrees of clarity and comfort during the discussion. Each interview lasted approximately 30 to 60 minutes and was conducted either face-to-face or through secure online meeting platforms based on the availability and organisational requirements of the participants. Due to the sensitivity of governance-related discussions within public-sector institutions, several participants expressed discomfort with audio recordings, especially when discussing organisational weaknesses, digital governance limitations, and internal audit practices. To encourage a higher level of openness and minimise participant hesitation, the current researcher adopted a non-recording interview approach, in which, although the interviews were not audio-recorded, several measures were implemented to guarantee satisfactory levels of data reliability, accuracy, and auditability. During each interview, detailed written notes were systematically taken to capture the responses, key statements, and contextual observations of the participants. Immediately after each session, the current researcher would review and expand the notes into holistic interview summaries, with the discussions remaining salient in their memory. Reflective researcher memos were also prepared after each interview to document the emerging interpretations, contextual insights, and nonverbal observations relevant to the analytical process.

3.4 Data Analysis and Trustworthiness

The interview data were analysed using thematic analysis by adhering to a six-step analytical procedure developed by Braun and Clarke (2006), which included familiarisation with the data, initial coding, theme generation, theme review, theme definition, and report development. In particular, the current researcher repeatedly reviewed the interview notes to identify recurring patterns, institutional concerns, and shared experiences related to digital audit transformation. Subsequently, manual coding was employed to categorise profound statements and concepts into preliminary codes, which were refined and grouped into broader thematic categories that aligned with the conceptual framework of the present study. As a result, through iterative comparison and interpretation, three (3) major themes emerged, namely, capability development, compliance and regulatory alignment, and cultural and organisational adaptation. Concurrently, several measures were implemented to increase the trustworthiness and methodological rigour of the current study, wherein credibility was strengthened through repeated reviews and cross-checking of the interview notes to guarantee sufficient consistency between the participants' responses and thematic interpretation, whereas dependability was maintained by systematically documenting the coding and analytical procedures throughout the research process. Meanwhile, confirmability was enhanced through reflexive note-taking and transparent documentation of analytical decisions to minimise researcher bias, whereas transferability was supported by providing detailed contextual descriptions of the participants, institutional settings, and public sector environment, thereby allowing readers to assess the applicability of the current study results to similar contexts.

3.5 Ethical Considerations

The present study was conducted in accordance with the established ethical standards, in which all participants were briefed on the main purpose of the study, participation rights, and the voluntary nature of participation, with written consent obtained before each interview. No personal or organisational identifiers were collected, and all information was kept confidential. Moreover, the current researcher securely stored all written notes that were used solely for academic purposes. In essence, the above measures ensured that participant anonymity, data integrity, and ethical compliance were maintained throughout the entire study.

4.0 Findings and Discussion

4.1 Demographic Profile of Participants

A total of 27 participants were interviewed, and all served within the public sector in Malaysia. Particularly, each participant had direct responsibility for auditing, compliance, or governance functions and was familiar with the digital initiatives undertaken by their respective institutions. In addition, the participants represented a wide range of organisational levels, namely, from operational auditors to senior managers who would oversee audit functions. A majority of them were between 36 and 55 years old and possessed more than five (5) years of professional experience, which indicated a mature and experienced group that was capable of providing informed perspectives on digital audit transformation. Table 1 presents a summary of the key demographic characteristics of the participants in terms of gender, age, position level, and years of experience, wherein the majority of the participants were female and aged between 36 and 45 years old, holding middle- or senior-level management positions and having above 10 years of professional experience. Thus, the above diverse composition guaranteed that the current results were grounded in practical knowledge and informed by substantial experience in audit management and governance issues.

Table 1: Demographic Profile of the Participants

Demographic Category	Frequency (n = 27)	Percentage (%)
Gender		
Male	12	44.4
Female	15	55.6
Age Group		
25 to 35 years old	5	18.5
36 to 45 years old	13	48.1
46 to 55 years old	9	33.4
Position Level		
Operational Auditor	6	22.2
Middle-Level Auditor	10	37.0
Senior or Top-Level Auditor	11	40.8
Years of Experience		
Below 5 years	3	11.1
5 to 10 years	10	37.0
Above 10 years	14	51.9
Sector		
Public Sector	27	100

Source: Authors' own work

4.2 Thematic Analysis

Thematic analysis was employed to interpret the qualitative data collected from the 27 interviews, owing to its flexibility and capacity to identify, analyse, and report patterns within textual data, hence providing both descriptive and interpretive depth. Accordingly, the analysis followed the systematic process of familiarisation, coding, theme development, and refinement of Braun and Clarke (2006), with each interview note perused multiple times to ensure a deeper understanding of the participants' viewpoints, after which the key statements and recurring concepts were manually coded. The coding process was iterative and interpretive, which allowed relevant patterns to emerge naturally from the data rather than being imposed by predetermined categories. Subsequently, the initial codes were grouped by conceptual similarity before being refined into three (3) major themes that represented the central dimensions of digital audit transformation, namely, capability development, compliance and regulatory alignment, and cultural and organisational adaptation, which collectively encapsulated the experiences, challenges, and perspectives of the participants on the adoption of digital auditing practices in the Malaysian public sector. Table 2 summarises the thematic structure that emerged from the analysis, in which capability development emerged as a key foundation for effective digital auditing, as participants consistently emphasised the importance of technical training and organisational investment in digital skills. Additionally, compliance and regulatory alignment captured the challenges encountered by auditors in adapting existing governance frameworks to accommodate relevant digital evidence, data analytics, and automated processes, whereas cultural and organisational adaptation reflected the human and institutional dimensions of digital transformation, including the willingness to embrace innovation, leadership support, and internal collaboration.

Table 2: Summary of Themes and Sub-Themes from the Thematic Analysis

Main Theme	Description	Key Sub-Theme Identified
Theme 1: Capability Development	Reflects auditors' readiness and competence to utilise digital tools and analytics effectively	1. Technological proficiency and digital literacy 2. Training and skill enhancement 3. Institutional support and resources
Theme 2: Compliance and Regulatory Alignment	Addresses the adequacy of regulatory frameworks and governance mechanisms that support digital audits	1. Digital evidence and audit standards 2. Policy alignment and implementation gaps 3. Ethical and data security concerns
Theme 3: Cultural and Organisational Adaptation	Examines attitudes, leadership, and institutional culture that shape digital audit acceptance	1. Resistance to change and trust issues 2. Leadership commitment and communication 3. Organisational learning and collaboration

Source: Authors' work

4.3 Theme One: Capability Development in Digital Auditing

Capability development emerged as a central theme in understanding how internal auditors in the Malaysian public sector would adapt to digital transformation, in which the findings indicated that the effectiveness of digital auditing depended not only on technological advancement but also on the capacity of auditors to be equipped with, apply, and sustain digital skills within complex bureaucratic structures. Specifically, the participants consistently described a widening gap between the digital transformation agenda of the government and the readiness of internal audit units to implement technology-driven audit practices, which suggested that most public-sector internal auditors recognised the requirement to develop digital competencies, particularly in the aspects of data analytics, automation, and continuous auditing. Meanwhile, multiple participants expressed that existing training opportunities were irregular, theoretical, and insufficient for practical applications:

> "We are expected to apply data analytics in our audits, but most of us have not received formal training on the software tools" (Auditor 6).

> "Our digital training is often limited to basic awareness sessions. There is little guidance on how to integrate these tools into actual audit procedures" (Auditor 14).

Participants further noted that internal audit units often experienced constraints in terms of institutional support, particularly regarding infrastructure and system accessibility, which corresponded to several past studies that also highlighted that legacy systems and limited access to real-time financial data substantially impeded the digitalisation of audit processes:

> "Most of our systems are still standalone. Without integration, it is difficult to perform digital audits efficiently" (Auditor 11).
>
> "We lack proper technical assistance. Even if we want to use analytics, the necessary support is not always available" (Auditor 22).

Hence, capability development was not merely an individual responsibility but also an institutional requirement that was contingent upon sustained managerial and technological support. Another related issue identified in the interviews was the generational and experiential differences among auditors, wherein younger officers were generally perceived as more comfortable using digital platforms, whereas senior auditors expressed the need for targeted assistance, which was in line with prior studies that digital readiness in public-sector auditing was uneven and influenced by demographic factors, institutional learning cultures and access to structured development programmes (Betti & Sarens, 2021; Ilori, 2024):

> "Younger staff can pick up new systems quickly, but many senior auditors struggle because they were trained in traditional audit methods" (Auditor 9).

Table 3 summarises the main sub-themes identified under the first theme, namely, capability development in public-sector internal auditing. Beyond the technical limitations, the current results revealed deeper challenges related to institutional readiness within the current public-sector auditing environment in Malaysia, in which participants' concerns regarding insufficient training, fragmented systems, and uneven technological proficiency implied that digital transformation continued to be at a transitional rather than fully institutionalised stage. The dependence on traditional audit routines indicated that numerous public-sector institutions continued to operate within legacy administrative structures that were not fully aligned with data-driven governance practices. In addition, generational differences in digital adaptability reflected broader issues of professional identity and institutional learning, wherein experienced auditors trained under conventional compliance-oriented systems might perceive digital auditing as a disruption to established professional practices, thereby suggesting that digital audit transformation was not solely a technological process but also a structural and behavioural transition that necessitated longer-term organisational capability development. In sum, the process of capability development among public-sector internal auditors in Malaysia remains in its formative stage, in which, despite the strong policy direction and awareness of digital transformation, the operational capacity to translate existing initiatives into practice remains limited, thus suggesting that capability building should be institutionalised through structured training programmes, system integration, and supportive leadership, rather than only individual efforts. The results corresponded to the argument of Usul and Alpay (2025) that digital audit transformation requires coordinated investment in both human and technological resources.

Table 3: Sub-Themes and Selected Participant Quotations for Theme One - Capability Development in Public-Sector Internal Auditing

Sub-Theme	Description	Selected Participant Quotation
Technological Proficiency and Digital Literacy	Reflects auditors' technical competence and familiarity with digital audit tools and analytical systems.	"We are aware of digital tools, but applying them in real audit work is still a challenge" (Auditor 3). "Younger auditors adapt faster, but many experienced staff are less confident using digital systems" (Auditor 9).
Training and Skill Enhancement	Relates to professional development opportunities and the adequacy of structured digital audit training.	"Training tends to focus on concepts rather than real applications. We need more case-based exercises" (Auditor 7). "We are expected to use analytics, but there are not enough hands-on workshops to build that skill" (Auditor 14).

Table 3: Sub-Themes and Selected Participant Quotations for Theme One - Capability Development in Public-Sector Internal Auditing (continued)

Sub-Theme	Description	Selected Participant Quotation
Institutional Support and Resources	Concerns organisational readiness, infrastructure, and managerial support for digital capability development.	"We lack integrated systems that allow auditors to access data in real time" (Auditor 11). "Even when we try to apply digital tools, the technical support is insufficient" (Auditor 22).

Source: Authors' compilation

4.4 Theme Two: Compliance and Regulatory Alignment

Compliance and regulatory alignment emerged as the second critical theme in assessing the digital transformation of public sector internal auditing, in which the participants delineated that although digital tools could contribute to higher efficiency and transparency, their effectiveness depended on clearer regulatory frameworks that would define the key standards for digital evidence, data governance, and audit accountability. Numerous auditors also acknowledged that the ongoing public-sector reformation in Malaysia could support digitisation, yet the regulatory environment had not evolved at the same pace as technological adoption:

> "We are moving towards digital audits, but the regulations and guidelines are still designed for traditional audit methods" (Auditor 2).

Several participants highlighted the lack of detailed national or institutional frameworks governing digital audit procedures, which led to uncertainty regarding the acceptability of electronic evidence and the authentication of digitally stored data:

> "There are still grey areas about what counts as valid digital evidence in audit reports" (Auditor 8).

Other participants also expressed concerns about data security and the risk of information breaches, particularly when sensitive financial information was managed via shared platforms:

> "Confidentiality and data protection are our biggest concerns because our systems are interconnected" (Auditor 10).

The results suggested that internal auditors were increasingly aware of the compliance risks associated with digitalisation, particularly in public accountability, as existing auditing standards often lacked specific provisions for digital procedures, resulting in inconsistent practices across different governmental agencies:

> "Each department interprets the digital audit process differently because there is no unified guideline" (Auditor 17).

The above regulatory gap led to practical implications for audit integrity, which could impact the uniformity and reliability of audit findings in the public sector. Table 4 summarises the subthemes identified under the second theme, namely, compliance and regulatory alignment, wherein there was regulatory uncertainty, which indicated broader governance and institutional coordination challenges in the Malaysian public sector. In particular, participants' concerns regarding inconsistent standards, digital evidence validity, and cybersecurity governance suggested that digital audit transformation progressed more swiftly compared to the regulatory structures intended to support the transformation, which indicated a relatively moderate level of digital audit maturity, wherein technological implementation had begun, whereas institutional frameworks remained fragmented and reactive. Additionally, the absence of unified digital audit guidelines across different governmental agencies indicated how bureaucratic decentralisation and administrative silos might weaken policy consistency and institutional trust in digital auditing processes. In sum, the above issues demonstrated that regulatory readiness was not merely a technical compliance issue but also a governance challenge that was closely linked to public-sector accountability and institutional legitimacy, especially when regulatory readiness continued to be a key obstacle to fully digitising internal auditing in the Malaysian public sector. Although digital tools have been introduced, regulatory structures and compliance mechanisms remain in the process of being adapted to accommodate alternative forms of audit evidence and digital reporting, similar to previous research suggesting that governance frameworks in developing economies would often lag behind technological innovations (Otia & Bracci, 2022; Volodina & Grossi, 2024). The results also revealed that auditors were aware of the above constraints and perceived the need for a higher degree of harmonisation between audit regulations, digital standards, and cybersecurity policies.

Table 4: Sub-Themes and Selected Participant Quotations for Theme Two - Compliance and Regulatory Alignment in Public Sector Internal Auditing

Sub-Theme	Description	Selected Participant Quotation
Digital Evidence and Audit Standards	Addresses auditors' concerns regarding the adequacy of existing audit standards in accommodating digital procedures.	"Audit standards were written for manual audits, not for automated systems" (Auditor 2). "There is still confusion about how to verify and archive electronic records" (Auditor 8).
Policy Alignment and Implementation Gaps	Reflects inconsistencies between national audit policies and the practical implementation of digital processes.	"Departments adopt digital tools differently, so there is no common policy framework" (Auditor 17). "We need clearer regulations that match the government's digital agenda" (Auditor 12).
Ethical and Data Security Concerns	Highlights issues related to privacy, cybersecurity, and the ethical management of digital data.	"Our systems handle sensitive information, so cybersecurity is a major issue" (Auditor 10). "The challenge is balancing transparency with data protection" (Auditor 5).

Source: Authors' compilation

4.5 Theme Three: Cultural and Organisational Adaptation

The third major theme, namely, cultural and organisational adaptation, highlighted the human and institutional factors that would influence the levels of acceptance and sustainability of digital auditing practices in the public sector. Particularly, the participants acknowledged that only technological advancement would be insufficient without a supportive organisational culture and leadership that encourages change, as cultural resistance, hierarchical rigidity, and limited internal communication could hinder the full integration of digital auditing:

> "Technology is available, but the mindset in some departments is still traditional" (Accountant 4).

Resistance to change originated from both fear of technological complexity and uncertainty regarding how digital tools might alter existing roles and responsibilities, in which certain participants admitted that their colleagues hesitated to adopt alternative systems due to the perceived loss of control or increased accountability:

> "Many senior auditors prefer the old way because it feels safer and more familiar" (Accountant 16).

> "There is still a belief that manual checking is more reliable than automated processes" (Accountant 23).

As such, the above perceptions illustrated that successful digital transformation required not only technical readiness but also deliberate cultural management. Additionally, leadership commitment emerged as a decisive factor in shaping organisational attitudes towards digital change, in which participants noted that when top management demonstrated support for innovation, the staff would be more willing to engage in learning and experimentation:

> "When leaders show confidence in digital systems, it motivates everyone to follow" (Accountant 13).

Conversely, limited leadership engagement was discovered to be associated with fragmented implementation efforts and a lower degree of staff motivation:

> “Sometimes the leaders talk about digitalisation, but we do not see follow-up actions” (Accountant 19).

Organisational learning and collaboration were also regarded as the critical enablers of adaptation, especially among participants who experienced collaborative training and knowledge sharing across departments, and reported higher confidence in using digital tools:

> “We learn best when departments work together to solve digital audit issues” (Accountant 25).

The above experiences affirmed the argument that organisational culture, communication, and trust would be essential for sustaining technological reformations in public-sector environments (Wissal et al., 2025; Mokhtar et al., 2024). Table 5 depicts the sub-themes and selected participant quotations that reflected the dimensions of cultural and organisational adaptation identified in the current study. The quotations also revealed that digital transformation in public-sector auditing was strongly influenced by organisational power structures and deeply institutionalised professional norms, wherein resistance towards automated systems reflected not only technological discomfort but also concerns regarding control, accountability, and changing professional authority within the audit processes. Additionally, in hierarchical public-sector environments, traditional audit procedures might provide a sense of procedural certainty and professional legitimacy, which led certain auditors to perceive digital systems as reducing human judgment and oversight and further suggested that leadership behaviour played a symbolic role in shaping the organisational acceptance of digital reformation. In particular, when management demonstrated visible commitment to digitalisation, auditors would appear more willing to experiment, collaborate, and engage in organisational learning. Consequently, cultural adaptation emerged as a critical determinant of digital audit maturity, thereby influencing whether technological and regulatory reformations could be sustainably embedded within existing institutional practices.

Table 5: Sub-Themes and Selected Participant Quotations for Theme Three - Cultural and Organisational Adaptation in Public Sector Internal Auditing

Sub-Theme	Description	Selected Participant Quotation
Resistance to Change and Trust Issues	Captures reluctance to adopt new technologies due to fear, uncertainty, or lack of confidence	“Many auditors still prefer traditional methods because they are more comfortable with them” (Auditor 16). “There is a trust issue with automated systems; people are afraid of making errors they cannot control” (Auditor 23).
Leadership Commitment and Communication	Reflects the role of management in promoting digital initiatives and maintaining clear communication	“When top management supports digital change, it sets the tone for the entire department” (Auditor 13). “Digital transformation cannot happen without strong and consistent leadership support” (Auditor 19).
Organisational Learning and Collaboration	Emphasises shared learning, teamwork, and interdepartmental cooperation in supporting digital adaptation	“Cross-department training helps us understand the system better and reduces fear” (Auditor 25). “We need a culture of continuous learning, not just one-off training sessions” (Auditor 21).

Source: Authors’ compilation

The current analysis demonstrated that cultural and organisational readiness were indispensable for the success of digital auditing in the public sector, wherein, despite being the necessary conditions, technological capability and regulatory alignment would not be sufficient without a cultural transformation that could encourage openness, collaboration, and innovation, consistent with the results of Betti et al. (2021) and Wissal et al. (2025), who asserted that leadership behaviour and institutional culture would determine the extent to which digital reformations would be embraced within public-sector institutions. Collectively, the current results demonstrated that digital transformation in the Malaysian public-sector auditing environment was a multidimensional institutional process, which involved the interaction between technological readiness, regulatory governance, and organisational culture. Consistent with the institutional theory, the present study discovered that digital auditing was profoundly influenced by external governance pressures, regulatory expectations, and accountability requirements that shaped institutional behaviour. Concurrently, the socio-technical theory helped explain how technological systems, human capability, and organisational adaptation should operate in alignment to support sustainable digital transformation. Compared with previous studies that focused primarily on technological adoption or audit efficiency (Pizzi et al., 2021; Rakipi et al., 2020), the current study provided a more integrated qualitative understanding of how institutional fragmentation, leadership behaviour, professional identity, and organisational learning would jointly influence digital audit maturity in public-sector governance systems. The findings further suggested that emerging economies, such as Malaysia, encountered unique challenges, as digital governance reformations often progressed more rapidly relative to institutional and cultural adaptation mechanisms. Hence, digital audit transformation should not be understood merely as a technological upgrade, but rather as a broader institutional restructuring process requiring alignment between capability development, regulatory coherence, and organisational trust.

5.0 Conclusion

The present study assessed the transformation process of internal auditing practices within the public sector in the context of digitalisation by referring to the perspectives gathered from a total of 27 internal auditors across various governmental agencies in Malaysia. By performing a thematic analysis, three (3) major themes were identified, namely, capability development, compliance and regulatory alignment, and cultural and organisational adaptation, which collectively revealed that digital transformation in internal auditing continued to be an evolving process that combined both progress and constraints. Furthermore, internal auditors in the Malaysian public sector were increasingly aware of the importance of digital tools in contributing to higher levels of audit quality, transparency, and efficiency. Meanwhile, several limitations persist in terms of technical proficiency, institutional readiness, and system integration, as the current regulatory environment has yet to fully accommodate the evidentiary requirements of digital audits, and the absence of harmonised standards continues to hinder their consistency. Moreover, existing cultural and organisational factors, particularly resistance to change and varying levels of leadership commitment, have further restricted the pace of digital transformation. Therefore, the present study concluded that achieving sustainable digital reform in internal auditing would require the incorporation of human capability, regulatory adaptability, and institutional culture within a coherent digital forensic framework. Beyond the Malaysian context, the current study could also contribute to broader discussions on digital governance by demonstrating that digital audit transformation would not be solely a technological process but also an institutional and behavioural transition, thereby highlighting the importance of aligning digital capabilities, regulatory frameworks, and organisational culture to achieve more sustainable public-sector accountability in the current digital era.

5.1 Theoretical, Managerial, and Policy Implications

Theoretically, this study contributed to the growing discourse on digital transformation in public governance by incorporating compliance, capability, and cultural factors into a unified framework for digital auditing, which extended the institutional and digital forensic theory by revealing how the interaction between technological infrastructure, regulatory mechanisms, and organisational behaviour could shape audit innovation in the public sector. Concurrently, the current results supported the conceptualisation of a digital forensic internal audit framework, which incorporated traditional audit principles with data analytics, digital evidence validation, and cyber-forensic procedures to help improve accountability and traceability. From a managerial perspective, the results also indicated that internal audit leaders should adopt a strategic approach to capacity building through structured digital training, simulation-based workshops, and system-integrated learning environments, wherein managers should emphasise the practical application of digital forensic tools for fraud detection, data validation, and continuous monitoring. In addition, leadership engagement and knowledge sharing would be essential for fostering a learning culture that could support the inclusion of forensic technology in daily audit functions. At the policy level, the findings also highlighted the requirement for the Malaysian public sector to institutionalise a national internal audit digital forensic framework, which should define clear standards for handling digital evidence, cybersecurity governance, and the admissibility of forensic audit findings. Hence, policymakers should guarantee constant cross-agency collaboration between audit institutions, digital security authorities, and professional bodies to align compliance requirements with the digital forensic procedures. As a result, there will be higher levels of audit integrity, which will reinforce transparency and public confidence in digital governance.

5.2 Limitations and Recommendations for Future Studies

Although the current study provided valuable insights, certain limitations should be acknowledged. Specifically, the qualitative design, based on the semi-structured interviews with a total of 27 internal auditors, offered analytical depth, yet limited generalisation to the wider public sector. Thus, future researchers can consider incorporating larger and more diverse samples to validate the current study results in different institutional settings. As this study also relied on self-reported perceptions, it might not fully capture the operational effectiveness of the digital audit tools, which future scholars can adopt mixed methods or longitudinal approaches to investigate the measurable impact of digital forensic auditing on audit performance and fraud detection outcomes. Furthermore, comparative studies between the Malaysian and international public sectors can assist in providing a broader understanding of how institutional capacity and policy maturity will influence the adoption of digital forensics frameworks. Future studies can also focus on developing and empirically testing a holistic internal audit digital forensic framework tailored to the Malaysian context, which will provide a practical model for incorporating digital tools, forensic analytics, and governance standards into the internal audit process, thereby advancing both academic theory and policy implementation in the era of digital accountability.

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