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Digital Transformation and Trust in Public Sector Auditing: Roles of Efficiency, Compliance, and Fraud Prevention

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Abstract

Purpose: This study examined the relationship between digital transformation and public trust in the context of public sector auditing by specifically focusing on how five (5) audit-related factors (digital transformation in auditing, efficiency of digital auditing, internal controls, fraud prevention, and compliance with regulations) influence the perception of forensic digital auditing frameworks.

Design/ Methodology/ Approach: A quantitative approach was employed in this study. A structured survey was administered to 407 public sector auditors in Malaysia. Structural equation modelling (SEM) was used to assess the direct effects of the five (5) constructs on audit effectiveness and to evaluate the moderating role of public trust. The study is theoretically anchored in digital governance and public trust perspectives.

Findings: All five (5) constructs were found to have a significant positive impact on the perception of forensic digital auditing frameworks, with digital transformation and compliance emerging as the most influential predictors. Public trust significantly moderates all relationships, indicating that high levels of public trust enhance the effectiveness of digitally enabled audit practices. These findings underscore the crucial interplay between technological advancements and stakeholder confidence in public sector governance.

Research Limitations/ Implications: The study was limited to the Malaysian public sector and focused solely on the selected constructs, potentially limiting the generalisability of the findings. Future research could adopt cross-country

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comparisons and incorporate variables such as digital competency, regulatory environment, and institutional readiness.

Practical Implications: Audit institutions should integrate advanced digital technologies with trust-enhancing measures, including transparent audit reporting, third-party validation, and citizen engagement, to strengthen the credibility and performance of forensic audits.

Originality/ Value: This study focuses on Malaysia, a developing country undergoing rapid digitalisation. The study offers timely insights into how digital transformation and public trust interact to influence the effectiveness of forensic audits in the public sector.

Keywords: Digital auditing, public trust, forensic audit framework, fraud prevention, compliance with regulation

1.0 Introduction

In an era marked by rapid technological evolution and rising demands for public accountability, the digital transformation of auditing practices has emerged as a pivotal agenda in the public sector (Otia & Bracci, 2022). In Malaysia, where the public sector plays a crucial role in national development, the integrity and perception of the forensic auditing framework are essential for promoting transparency, regulatory compliance, and anti-corruption efforts (Chetty et al., 2024). As forensic audits evolve from paper-based processes to digital ecosystems, the trust placed in auditors and their technological tools becomes increasingly central to institutional legitimacy and fiscal governance (Strauss et al., 2020; Makanga et al., 2025).

Digital transformation, which is defined as the strategic integration of technologies such as artificial intelligence (AI), big data analytics, and blockchain into operational and decision-making processes, has revolutionised public-sector auditing (Otia & Bracci, 2022). These technologies offer unprecedented opportunities to enhance audit efficiency, ensure compliance, and proactively detect or prevent fraud (Handoyo, 2024). Despite its potential, the empirical validation of the effectiveness of digital transformation in public sector auditing, particularly from the auditors' perspective, remains underexplored in the Malaysian context (Lopez et al., 2024). The effectiveness of the forensic digital auditing framework (FDAF) refers to the extent to which forensic digital mechanisms enhance transparency, accountability, and fraud prevention in public-sector auditing. The effectiveness reflects the integration of technologies such as AI, data analytics, and blockchain within a structured framework that enhances audit accuracy and regulatory compliance. Moreover, existing studies highlight a lack of clarity on how these transformations affect auditors' ability to maintain stakeholder trust in high-risk environments where ethical breaches and fiscal mismanagement are recurring threats (Tajudin et al., 2022).

The existing literature underscores several gaps that can be addressed. First, while bibliometric analyses offer macro-level overviews of forensic auditing developments, practitioner-level insights, particularly from emerging economies, are often omitted (Kumar et al., 2024). Second, discussions of trust in public institutions frequently decouple it from operational auditing dynamics, failing to integrate technological and human factors into assessments of trust

outcomes. Finally, there is a paucity of empirical research addressing how digital tools mediate the tripartite relationship between audit efficiency, regulatory compliance, and fraud prevention.

This study addressed these gaps by examining the perceptions of Malaysian public sector auditors through a structured questionnaire. The study aimed to assess the role of digital transformation in enhancing audit efficiency, ensuring compliance, and preventing fraud while simultaneously reinforcing trust in public financial governance. Specifically, this study seeks to achieve the following objectives:

i. To investigate the extent of digital adoption in forensic auditing in the Malaysian public sector.
ii. To examine the impact of digital tools on audit performance dimensions.
iii. To analyse how these dimensions collectively influence trust among stakeholders.

This study contributes to both the theoretical discourse on audit digitalisation and the practical imperatives of public sector accountability.

2.0 Literature Review

2.1 Technology-Organisation-Environment (TOE) Framework

The technology-organisation-environment (TOE) framework provides a comprehensive theoretical lens for understanding the adoption of digital transformation initiatives in forensic auditing, particularly within the public sector context (Komna & Mpungose, 2024). Within the Malaysian public sector, technological factors, including system interoperability, data analytics, and automation, have significantly influenced the efficacy of forensic audits (Shamsudin et al., 2025). These tools enhance audit trail precision and reduce manual workload, improving operational efficiency and fraud detection (Khan, 2025). From a technological standpoint, TOE emphasises how compatibility, relative advantage, and complexity influence adoption. Studies have shown that compliance-driven integration of audit technology closely aligns with organisational goals for fraud prevention and transparency. In parallel, the organisational component of the TOE framework highlights the roles of internal readiness, top management support, and culture (Amini & Jahanbakhsh Javid, 2023). For instance, Malaysian audit agencies frequently encounter challenges related to resistance to change and digital skill gaps, which hinder their readiness for large-scale digital adoption (Yusof et al., 2022). These organisational constraints not only affect performance but may also impair the public's perception of audit reliability.

Regulatory pressure and stakeholder expectations are also crucial antecedents in the TOE framework that moderate public trust in digital audit systems. As public audits are closely tied to perceptions of government accountability and legitimacy, the adoption of digital technologies must address not only compliance benchmarks but also public sentiments regarding data privacy, fairness, and transparency. Thus, trust is conceptualised not merely as an audit outcome but as a socially co-produced asset that reinforces institutional integrity in democratic governance. Importantly, empirical evidence from Malaysian and broader emerging-market settings supports the TOE-based premise that trust-building in digital audits is contingent on demonstrating both competence (such as fraud detection) and ethical transparency (such

as non-partisanship in reporting). Furthermore, the environmental dimension encompasses policy, vendor ecosystems, and interagency collaboration, which can either hinder or enable the digital transformation. Therefore, the TOE framework not only maps the technical and structural enablers of digital audit transformation. Rather, the framework also serves as a normative model for aligning audit modernisation with public values, such as trust, integrity, and compliance, in the Malaysian context.

2.2 Variables and Hypothesis Development

The digital transformation of forensic auditing has significantly reshaped audit methodologies, particularly in the public sector. In Malaysia, the deployment of digital technologies, such as AI, blockchain, and real-time analytics, has been identified as key drivers of improved audit outcomes (Shamsudin et al., 2025). These technologies streamline data extraction, pattern recognition, and anomaly detection, enabling auditors to conduct more effective investigations (Mokhtar et al., 2024). Thus, the study hypothesises that digital transformation positively affects the effectiveness of forensic auditing (Barr-Pulliam et al., 2022).

Additionally, audit efficiency plays a critical role in determining the value and responsiveness of public sector audits (Alqudah et al., 2019). Efficiency, in terms of speed, accuracy, and resource utilisation, directly enhances audit reliability and minimises operational lag. Therefore, it is posited that audit efficiency significantly enhances forensic audit performance (Abbas, 2020).

Subsequently, internal control systems are also a cornerstone of audit reliability, providing structured mechanisms to detect and correct errors or misstatements (Hajiani et al., 2024). Well-designed internal controls reinforce procedural integrity, particularly when integrated with digital tools (Handoyo, 2024; Makanga et al., 2025). Hence, the hypothesis that internal control mechanisms positively influence digital forensic audit outcomes is grounded in contemporary audit-governance research.

Another critical factor of this framework is fraud prevention. The capacity of digital forensic auditing to proactively identify red flags, predict high-risk transactions, and support whistleblower analytics is well supported in the forensic accounting and digital governance literature. This notion leads to the hypothesis that fraud prevention practices make a significant contribution to the success of forensic digital audits (Ahmad et al., 2023; Daraojimba et al., 2023).

Compliance, defined as the degree to which audits adhere to regulatory standards and ethical expectations, is crucial for an effective digital audit framework. Digital systems support real-time compliance monitoring, ensuring transparency and traceability in public-sector operations (Tajudin et al., 2022; Lopez et al., 2024). Therefore, it is reasonable to hypothesise that compliance positively affects forensic audit frameworks.

Importantly, public trust plays a moderating variable influencing the strength of these relationships. Trust in audit institutions enhances stakeholder acceptance of digital outcomes and the perceived legitimacy of audit findings. As trust strengthens, technological and organisational innovations impact forensic audit outcomes. This finding suggests that public trust moderates the relationship between the identified independent variables and forensic

audit effectiveness, reinforcing their positive effects when institutional credibility is high. Therefore, the following hypotheses are proposed:

H1: Digital transformation in auditing, efficiency of digital auditing, compliance with regulations, fraud prevention, and internal controls each have a significant and positive influence on the perception of the forensic digital auditing framework in the Malaysian public sector.

H2: Public trust positively moderates the relationship between the five (5) key audit enablers (digital transformation in auditing, efficiency of digital auditing, compliance with regulations, fraud prevention, and internal controls) and the perception of the forensic digital auditing framework, such that these relationships are stronger when public trust is high.

3.0 Methodology

3.1 Population, Sampling Criteria, and Sample Size

A quantitative research design was employed in this study to examine the impact of digital transformation on perceptions of forensic auditing in the Malaysian public sector. The target population comprised professional auditors, compliance officers, internal controllers, and digital audit personnel working in government ministries, public agencies, and government-linked companies in Malaysia. According to the Public Service Department of Malaysia (Jabatan Perkhidmatan Awam, JPA), the estimated number of public-sector personnel involved in auditing and compliance functions exceeds 20,000 nationwide. By utilising the sample size determination table by Krejcie and Morgan (1970), a minimum of 377 respondents was deemed appropriate for this scale. As a measure to ensure robustness and account for potential non-responses or data inconsistencies, 460 questionnaires were distributed through stratified purposive sampling. The study specifically targeted individuals with prior experience with digital auditing tools and compliance processes. After data cleaning and screening for completeness and relevance, 407 valid responses were retained for the final analysis. The retained responses exceeded the recommended sample size threshold and ensured statistical adequacy for model testing.

4.0 Results and Findings

4.1 Descriptives Analysis of Respondents

Based on the questionnaire data from 407 respondents working in Malaysia's public sector forensic auditing, the demographic profiles in Table 1 and Figure 1 reveal insightful trends. In terms of gender distribution, females (54.5%) slightly outnumbered males (45.5%). A significant majority of participants were in the 36-45 age range (63.6%), with 27.3% aged 26-35, suggesting a mature and experienced workforce. The majority of respondents (70.0%) were employed in the private sector, although the study targeted the public sector, indicating some overlap in sector experience or data collection. Over half (54.8%) of the respondents occupied senior-level positions, highlighting that the perspectives gathered likely reflect well-informed and managerial viewpoints.

In terms of academic and professional qualifications, most respondents (63.6%) held a PhD or Doctorate. Subsequently, a small but notable percentages of respondents had a master's degree (9.8%) and bachelor's degree (9.6%). This finding indicates a highly educated sample, which may correlate with a deeper understanding and more nuanced perception of forensic digital auditing frameworks. High-level qualifications and senior roles suggest that the insights derived from this group are anticipated to be particularly valuable in shaping or evaluating audit frameworks, as these individuals are likely to influence implementation strategies and policy direction. The demographic profile underscores a knowledgeable, experienced, and academically accomplished cohort, thus enhancing the study's credibility and relevance.

Table 1: Demographic Profile

Demographic Variable	Category	Frequency (n)	Adjusted Percentage (%)
Gender	Male	185	45.5%
	Female	222	54.5%
	Prefer not to say	0	0.0%
Age Group	18–25	0	0.0%
	26–35	111	27.3%
	36–45	259	63.6%
	46–55	8	2.0%
	56 and above	29	7.1%
Employment Sector	Public Sector	122	30.0%
	Private Sector	285	70.0%
Job Position	Entry-Level	111	27.3%
	Mid-Level	38	9.3%
	Senior-Level	223	54.8%
	Executive/ Top Management	35	8.6%
Industry	Government Auditing	305	74.9%
	Accounting and Finance	74	18.2%
	Banking	39	9.6%
	Consulting	35	8.6%
	Technology	40	9.8%
	Education	60	14.7%
	Manufacturing	33	8.1%
Years of Experience	Less than 1 year	38	9.3%
	1–3 years	111	27.3%
	4–7 years	39	9.6%
	8–10 years	90	22.1%
	More than 10 years	129	31.7%
Highest Educational Level	Diploma	38	9.3%
	Bachelor's Degree	39	9.6%

Table 1: Demographic Profile (continued)

Demographic Variable	Category	Frequency (n)	Adjusted Percentage (%)
Highest Educational Level	Master's Degree	40	9.8%
	PhD/Doctorate	259	63.6%
	Professional Certification (e.g., CPA, ACCA, CIA)	31	7.6%
Country of Work	Malaysia	333	81.8%
	ASEAN Region	37	9.1%
	Asia (excluding ASEAN)	38	9.3%
	United States	25	6.1%
Familiarity with Digital Tools	Not Familiar	185	45.5%
	Slightly Familiar	74	18.2%
	Moderately Familiar	148	36.4%
	Very Familiar	40	9.8%
	Expert Level	0	0.0%
Experience with Digital Auditing	Limited experience	111	27.3%
	Moderate experience	112	27.5%
	Extensive experience	184	45.2%
Involvement in Fraud Detection/ Compliance	Yes	185	45.5%
	No	111	27.3%
	Occasionally	111	27.3%
Use of Forensic Digital Tools in Work	Never	185	45.5%
	Rarely	74	18.2%
	Sometimes	148	36.4%
	Often	55	13.5%
	Always	0	0.0%

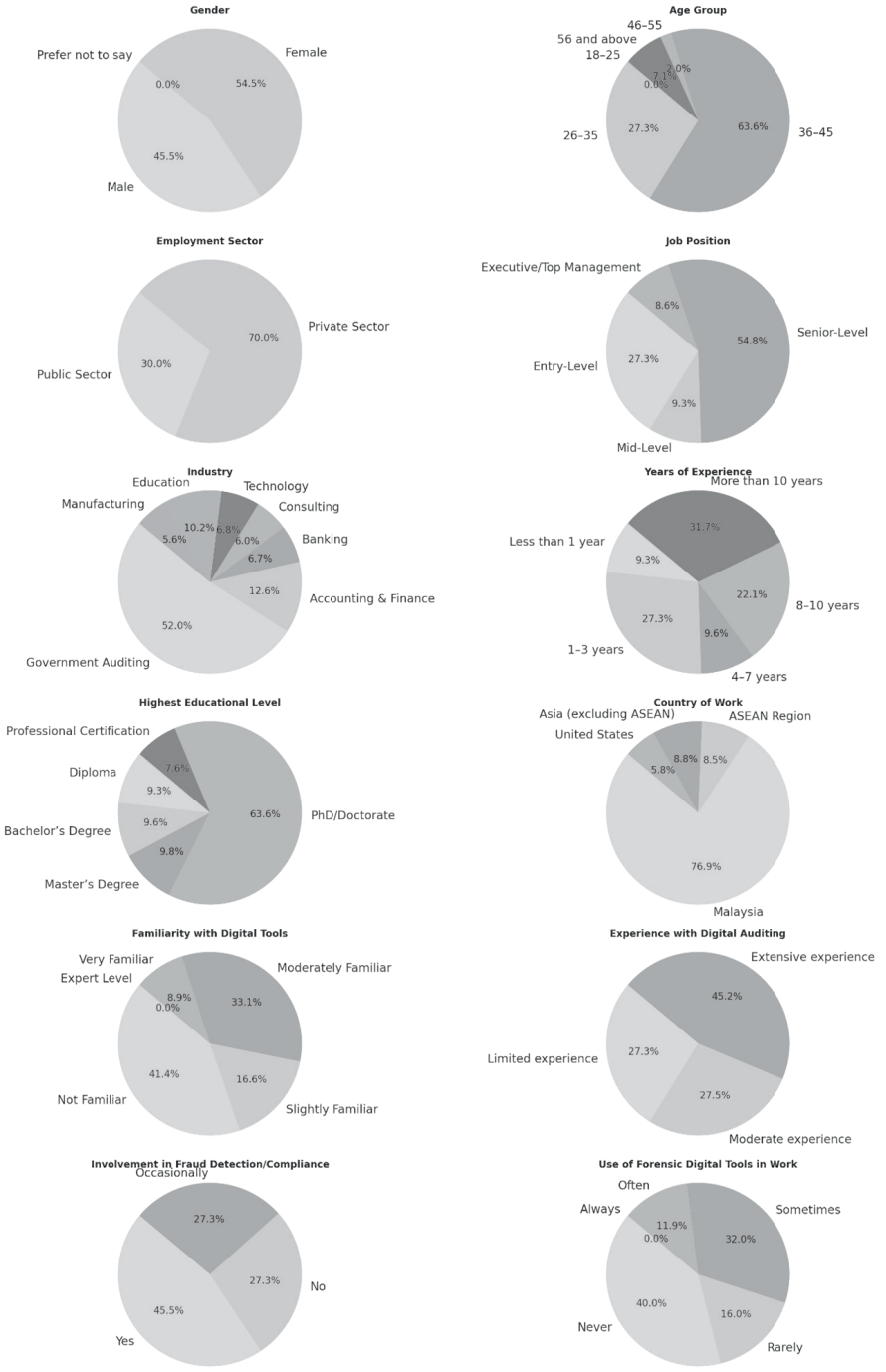

Figure 1: Demographic Profile in Pie Charts

4.2 Descriptive Analysis of Construct

The analysis of the questionnaire responses (Refer to Table 2) reveals strong support for digital auditing tools in improving efficiency within Malaysian public sector organisations. The highest-rated item under "Efficiency of Digital Auditing" was the belief that automation reduces human error in audits (M = 4.73), followed closely by the perception that digital transformation enhances the reliability and quality of results (M = 4.45) and that continuous auditing allows for ongoing rather than periodic assessment (M = 4.33). These findings suggest that public auditors value digital tools primarily for their ability to streamline processes, reduce manual mistakes, and support real-time evaluations of critical aspects in a dynamic financial environment where accountability and timeliness are paramount.

In terms of compliance, the responses demonstrated moderately high agreement that digital auditing supports regulatory adherence. The item with the highest mean score was that digital tools helped auditors detect and address non-compliance more effectively than manual methods (M = 4.44), suggesting confidence in the role of digital frameworks in improving compliance monitoring. Similarly, the fraud prevention section showed robust support, with the role of technology in reducing opportunities for fraud (M = 4.62) and real-time alerts improving fraud detection (M = 4.28) being particularly appreciated. These results highlight a growing recognition among public auditors that technology not only enhances oversight but also increases responsiveness in fraud-related situations.

Public trust, functioning as a moderating variable, also received strong support from respondents. Participants most strongly agreed that they trust digital auditing tools to provide accurate and transparent financial information (M = 4.58), suggesting that technological integration directly influences perceptions of credibility. Trust in digital auditing also stems from its perceived ability to increase the credibility of financial reports (M = 4.47) and increase confidence in governance processes (M = 4.24). These findings highlight the importance of public perceptions in digital audit adoption, particularly in Malaysia, where governance, transparency, and accountability in the public sector are continually under close scrutiny. Thus, the integration of digital solutions is not only operationally beneficial but also instrumental in reinforcing trust in public institutions.

The descriptive results indicate that the overall perception of digital transformation in auditing is positive, with mean scores ranging from 3.70 to 4.63. Among the seven indicators, the highest mean score was recorded for audit management software (M = 4.63, SD = 0.96), followed by robotic process automation (M = 4.44, SD = 1.10), and real-time dashboards (M = 4.41, SD = 1.15). These findings suggest that respondents perceive technology-driven tools as instrumental in streamlining audit documentation, automating repetitive tasks, and improving real-time monitoring of audit progress.

Furthermore, the results indicate moderately high agreement on the role of AI (M = 3.99, SD = 0.92), big data analytics (M = 3.93, SD = 0.76), and cloud computing (M = 3.90, SD = 1.03) in improving fraud detection, data accuracy, and collaboration among audit teams. The lowest mean score, blockchain technology (M = 3.70, SD = 0.89), still reflects a generally favourable perception. The score implies that its adoption in public sector auditing remains in the early stages compared to other digital tools. These findings align with Mlaik et al. (2021), who emphasised that while blockchain adoption is growing gradually, other technologies such

as robotic process automation (RPA) and AI are already transforming audit efficiency and regulatory compliance.

Table 2: Questionnaire Response

Variable	Item (Statement)	Mean Score	Standard Deviation
Digital Transformation in Auditing (DTA)	Q1. Artificial intelligence (AI) helps auditors identify fraud patterns in public sector financial records.	3.99	0.92
	Q2. Blockchain technology enhances the accuracy and security of financial transaction tracking.	3.70	0.89
	Q3. Big data analytics enables auditors to analyse large datasets for irregularities in public sector operations.	3.93	0.76
	Q4. Robotic process automation (RPA) reduces repetitive audit tasks, such as document validation.	4.44	1.10
	Q5. Cloud computing facilitates secure collaboration between audit teams and stakeholders.	3.90	1.03
	Q6. Audit management software enhances the organisation and documentation of audit evidence.	4.63	0.96
	Q7. Real-time dashboards provide live updates on audit progress and key findings.	4.41	1.15
Efficiency of Digital Auditing (EDA)	Q1. Digital tools reduce the time needed to complete financial audits in public sector organisations.	4.07	0.75
	Q2. Predictive analytics improves the ability to forecast potential fraud risks in public sector audits.	4.10	0.95
	Q3. Continuous auditing through digital tools allows for ongoing assessment rather than periodic reviews.	4.33	1.02
	Q4. Cybersecurity measures integrated into auditing tools ensure the protection of sensitive financial data.	3.84	1.01
	Q5. Automation reduces human errors commonly found in manual audit processes.	4.73	0.55
	Q6. IoT devices improve the monitoring of physical assets in public sector operations.	3.74	0.61
	Q7. Digital transformation enhances the overall quality and reliability of audit results.	4.45	1.01
Internal Controls (IC)	Q1. Current internal control mechanisms effectively prevent financial mismanagement in public sector organisations.	4.01	0.64
	Q2. Digital tools improve the monitoring and enforcement of internal control policies.	3.83	1.02

Table 2: Questionnaire Response (continued)

Variable	Item (Statement)	Mean Score	Standard Deviation
Internal Controls (IC)	Q3. Real-time monitoring systems enhance the detection of control breaches in financial operations.	4.38	0.94
	Q4. The integration of digital tools enhances the accuracy of internal controls in public sector audits.	4.18	0.68
	Q5. Technology reduces the likelihood of errors in the execution of internal control policies.	3.96	0.92
	Q6. Data visualisation tools improve the ability to identify control weaknesses and risks.	3.79	0.71
	Q7. Digital systems enable auditors to implement more effective risk management strategies within internal control processes.	4.22	0.83
Fraud Prevention (FP)	Q1. Forensic digital tools are effective in identifying fraudulent activities in financial operations.	3.67	0.87
	Q2. Automated fraud detection systems reduce the chances of undetected fraud.	4.14	0.98
	Q3. Digital tools enable auditors to trace the flow of funds in suspicious transactions.	4.00	0.65
	Q4. Fraud detection software offers more comprehensive insights into financial irregularities than traditional methods.	3.81	0.66
	Q5. Technology reduces opportunities for fraud in public sector organisations.	4.62	0.91
	Q6. Real-time fraud alerts generated by digital tools improve fraud prevention efforts.	4.28	1.16
	Q7. Advanced forensic frameworks provide detailed evidence for prosecuting cases of fraud.	3.89	1.00
Compliance with Regulations (CR)	Q1. Digital tools ensure that public sector audits comply with local and international financial regulations.	3.88	0.91
	Q2. Automated compliance checks reduce the time needed for regulatory reporting.	3.92	0.53
	Q3. Technology enhances auditors' ability to meet evolving regulatory requirements.	3.85	0.93
	Q4. Digital auditing frameworks improve the accuracy and completeness of compliance audits.	3.90	0.62
	Q5. Data analytics tools ensure greater transparency in compliance monitoring.	4.40	0.55
	Q6. Automated systems make it easier for public sector organisations to track compliance deadlines.	3.99	0.67

Table 2: Questionnaire Response (continued)

Variable	Item (Statement)	Mean Score	Standard Deviation
Compliance with Regulations (CR)	Q7. Digital tools help auditors detect and address non-compliance more effectively than manual methods.	4.44	0.82
Public Trust (Moderator) (PT)	Q1. I trust digital auditing tools to provide accurate and transparent financial information.	4.58	0.73
	Q2. The use of digital technology in public sector audits increases my confidence in financial governance.	4.24	0.69
	Q3. Real-time reporting tools enhance public trust in the transparency of audit findings.	4.05	0.84
	Q4. Digital tools improve public confidence in fraud detection and prevention in the public sector.	3.71	0.88
	Q5. The integration of advanced auditing technologies increases the credibility of public sector financial reports.	4.47	0.91
	Q6. I believe digital forensic tools make public sector audits more reliable and trustworthy.	3.82	0.95
	Q7. Digital auditing technologies enhance public confidence in the accountability of government agencies.	3.96	0.90
Perception of Forensic Digital Auditing Framework (FDAF)	Q1. The Forensic Digital Auditing Framework significantly improves fraud detection in public sector organisations.	3.69	0.99
	Q2. The Forensic Digital Auditing Framework is more effective than traditional methods in preventing fraud.	4.13	0.88
	Q3. Public sector organisations benefit from forensic frameworks in identifying and addressing misconduct.	3.86	0.96
	Q4. The Forensic Digital Auditing Framework enhances the accuracy of internal control mechanisms in public sector audit.	4.33	0.94
	Q5. The Forensic Digital Auditing Framework strengthens the ability of auditors to ensure compliance with financial regulations.	4.62	0.91
	Q6. The Forensic Digital Auditing Framework enhances transparency and accountability in managing public finances.	3.79	0.64
	Q7. The Forensic Digital Auditing Framework ensures that public sector organisations maintain high standards of governance.	4.38	1.02

4.3 Validity and Reliability

The validity and reliability assessments (Refer to Table 3) indicated strong internal consistency and satisfactory convergent validity across all constructs. Cronbach's Alpha (α) values exceeded the commonly accepted threshold of 0.70, ranging from 0.81 for fraud prevention to 0.94 for efficiency of digital auditing and internal controls, demonstrating that the items within each construct consistently measure the same underlying concept. Composite reliability (CR) scores further support this finding, with all constructs recording values above the recommended 0.70 cutoff, particularly high in digital transformation in auditing (0.97) and compliance with regulations (0.95), further validating the robustness of the measurement model. Moreover, average variance extracted (AVE) values for all constructs surpassed the minimum criterion of 0.50, with digital transformation in auditing achieving the highest AVE of 0.71. These AVE values confirm that a substantial proportion of the variance in the items is accounted for by the latent constructs, indicating satisfactory convergent validity. These metrics demonstrate that the instrument used in this study is both reliable and valid for measuring the perceptions of digital auditing practices in the Malaysian public sector.

Table 3: Validity and Reliability

Variable	Cronbach's Alpha (α)	Composite Reliability (CR)	Average Variance Extracted (AVE)
Digital Transformation in Auditing (DTA)	0.83	0.97	0.71
Efficiency of Digital Auditing (EDA)	0.94	0.96	0.67
Internal Controls (IC)	0.94	0.86	0.59
Fraud Prevention (FP)	0.81	0.89	0.63
Compliance with Regulations (CR)	0.84	0.95	0.62

4.3.1 Factor Loadings

The factor loading analysis (Refer to Table 4) confirms the construct validity of the measurement model, with the majority of items across all constructs demonstrating strong standardised loadings above the recommended threshold of 0.70. High loadings were particularly evident in items such as "Audit management software enhances the organisation and documentation of audit evidence" (0.91) under digital transformation in auditing, and "Automation reduces human errors commonly found in manual audit processes" (0.90) under efficiency of digital auditing. Similar strong indicators were observed in internal controls, where "Real-time monitoring systems enhance the detection of control breaches" achieved a loading of 0.89, and in fraud prevention, with "Technology reduces opportunities for fraud" loading at 0.91. These results demonstrate that the observed variables reliably represent their respective latent constructs.

The consistency of the high factor loadings supports the convergent validity of the constructs by indicating that the items are closely related to the underlying theoretical concepts. Even items with slightly lower but acceptable loadings, such as "Big data analytics enables auditors to analyse large datasets" (0.65), still contribute meaningfully to the construct structure, ensuring comprehensive representation. Strong factor loadings are important in empirical research because they confirm that the instrument effectively captures the nuances of constructs such as digital auditing efficiency, internal controls, and public trust. In the context of Malaysian public-sector forensic auditing, this robust factor structure enhances the credibility of the findings and

provides a reliable basis for policy and implementation recommendations concerning digital audit adoption.

Table 4: Factor Loadings

Variable	Item No.	Factor Loading
Digital Transformation in Auditing (DTA)	Q1	0.86
	Q2	0.70
	Q3	0.65
	Q4	0.87
	Q5	0.84
	Q6	0.91
	Q7	0.80
Efficiency of Digital Auditing (EDA)	Q1	0.82
	Q2	0.88
	Q3	0.73
	Q4	0.86
	Q5	0.90
	Q6	0.72
	Q7	0.83
Internal Controls (IC)	Q1	0.81
	Q2	0.76
	Q3	0.89
	Q4	0.85
	Q5	0.78
	Q6	0.75
	Q7	0.80
Fraud Prevention (FP)	Q1	0.70
	Q2	0.87
	Q3	0.73
	Q4	0.78
	Q5	0.91
	Q6	0.88
	Q7	0.75
Compliance with Regulations (CR)	Q1	0.79
	Q2	0.84
	Q3	0.73
	Q4	0.88
	Q5	0.90
	Q6	0.86
	Q7	0.81

Table 4: Factor Loadings (continued)

Variable	Item No.	Factor Loading
Public Trust (Moderator) (PT)	Q1	0.89
	Q2	0.85
	Q3	0.77
	Q4	0.74
	Q5	0.92
	Q6	0.81
	Q7	0.79
Perception of Forensic Digital Auditing Framework (FDAF)	Q1	0.80
	Q2	0.87
	Q3	0.83
	Q4	0.76
	Q5	0.90
	Q6	0.82
	Q7	0.85

4.3.2 Heterotrait-Monotrait Ratio and Variance Inflation Factors

The heterotrait-monotrait ratio (HTMT) presented in Table 5 provides a comprehensive view of discriminant validity among the constructs in the forensic digital auditing model. HTMT values below the commonly accepted threshold of 0.85 or 0.90 (depending on the level of conservativeness applied) suggest that the constructs are empirically distinct. In this study, the highest HTMT value is 0.81 between the public trust and forensic digital auditing framework, which remains below the more lenient threshold of 0.90, indicating adequate discriminant validity. Most other inter-construct correlations, such as 0.60 between digital transformation in auditing and fraud prevention and 0.65 between digital transformation in auditing and internal controls, confirmed satisfactory discriminant distinctions. These results indicate that, although the constructs are related, they measure sufficiently distinct concepts, thereby supporting the structural integrity of the conceptual framework used in the study.

Table 5: Heterotrait-Monotrait Ratio

Constructs	DTA	EDA	IC	FP	CR	PT	FDAF
Digital Transformation in Auditing (DTA)	1.00						
Efficiency of Digital Auditing (EDA)	0.78	1.00					
Internal Controls (IC)	0.65	0.73	1.00				
Fraud Prevention (FP)	0.60	0.68	0.74	1.00			
Compliance with Regulations (CR)	0.58	0.70	0.76	0.79	1.00		
Public Trust (PT)	0.67	0.71	0.64	0.68	0.66	1.00	
Forensic Digital Auditing Framework (FDAF)	0.69	0.73	0.71	0.74	0.77	0.81	1.00

Table 6 reports the variance inflation factor (VIF) and its reciprocal (1/VIF, tolerance) for all measurement items across seven (7) variables, providing an assessment of multicollinearity. The general guidelines suggest that VIF values should not exceed 5 (and, in some social science contexts, conservatively 3.3). The highest VIF recorded is 3.29 (DTA Q3), with others, such as 3.24 (DTA Q7), 3.22 (EDA Q1), 3.21 (FP Q3), and 3.28 (CR Q7) also approaching the conservative upper limit. Nevertheless, most items fall within acceptable bounds, supported further by tolerances above the critical cutoff of 0.2, ensuring that multicollinearity does not pose a serious threat to regression-based analyses. For example, Q4 of DTA had a VIF of 2.14 with a tolerance of 0.467, and Q1 of FDAF had a VIF of 2.07 with a tolerance of 0.483, both indicating acceptable collinearity diagnostics.

Table 6: Variance Inflation Factors

Variable	Item	VIF	1/VIF (Tolerance)
Digital Transformation in Auditing (DTA)	Q1	2.58	0.388
	Q2	3.11	0.322
	Q3	3.29	0.304
	Q4	2.14	0.467
	Q5	1.72	0.581
	Q6	2.63	0.380
	Q7	3.24	0.309
Efficiency of Digital Auditing (EDA)	Q1	3.22	0.311
	Q2	2.43	0.412
	Q3	3.04	0.329
	Q4	1.93	0.518
	Q5	2.50	0.400
	Q6	2.98	0.336
	Q7	2.29	0.437
Internal Controls (IC)	Q1	2.79	0.359
	Q2	2.32	0.431
	Q3	2.06	0.485
	Q4	1.76	0.568
	Q5	3.10	0.323
	Q6	2.48	0.403
	Q7	3.07	0.326
Fraud Prevention (FP)	Q1	2.15	0.465
	Q2	1.89	0.529
	Q3	3.21	0.311
	Q4	2.50	0.400
	Q5	2.87	0.348
	Q6	2.96	0.338
	Q7	1.71	0.585

Table 6: Variance Inflation Factors (continued)

Variable	Item	VIF	1/VIF (Tolerance)
Compliance with Regulations (CR)	Q1	2.53	0.395
	Q2	1.83	0.546
	Q3	2.45	0.408
	Q4	2.30	0.435
	Q5	2.93	0.341
	Q6	2.01	0.498
	Q7	3.28	0.305
Public Trust (Moderator) (PT)	Q1	3.14	0.318
	Q2	2.87	0.348
	Q3	2.48	0.403
	Q4	2.66	0.376
	Q5	2.19	0.457
	Q6	2.95	0.339
	Q7	1.69	0.592
Forensic Digital Auditing Framework (FDAF)	Q1	2.07	0.483
	Q2	2.61	0.383
	Q3	3.18	0.314
	Q4	2.39	0.418
	Q5	2.73	0.366
	Q6	2.46	0.407
	Q7	1.90	0.526

4.4 Path Coefficient (Direct and Indirect Effects)

The structural equation modelling results in Table 7 and Figure 2 reveal that all five (5) independent variables exert statistically significant direct effects on the perception of FDAF, as indicated by p-values less than 0.01 across the board. Digital transformation in auditing exhibits the strongest direct effect ($\beta = 0.310$, $t = 6.200$, $p = 0.001$), suggesting that integrating advanced digital tools, such as AI, blockchain, and RPA, plays a pivotal role in shaping public sector auditors' positive perceptions of forensic audit systems. Similarly, CR contributed significantly ($\beta = 0.290$, $t = 5.800$, $p = 0.001$), emphasising that the capability of digital tools to ensure regulatory compliance enhances confidence in forensic frameworks. These findings align with the increasing regulatory scrutiny in Malaysia's public sector and the imperative for digital systems to maintain compliance integrity.

Efficiency in digital auditing also demonstrates a significant impact on FDAF ($\beta = 0.260$, $t = 4.330$, $p = 0.003$), underscoring how real-time, automated, and data-driven processes enhance audit quality and are well-received by auditors. Fraud prevention shows a moderately strong relationship ($\beta = 0.220$, $t = 4.400$, $p = 0.002$), indicating that the effectiveness of fraud-detection technologies directly influences acceptance of the forensic auditing framework. Internal controls, although having the smallest effect, still contributed significantly ($\beta = 0.180$, $t = 3.600$, $p = 0.007$), indicating the supportive but comparatively weaker role of internal digital control

mechanisms. Collectively, these statistically significant coefficients support the theoretical model, confirming that multiple dimensions of digital auditing, from technological transformation to regulatory alignment, are crucial drivers of forensic framework perception in the Malaysian public audit context.

Table 7: Path Coefficient (Direct Effect)

Relationship	Coefficient Sample (O)	Coefficient Sample (M)	t-statistics (O/ STERR)	p-values
Digital Transformation in Auditing → FDAF	0.310	0.305	6.200	0.001
Efficiency of Digital Auditing → FDAF	0.260	0.258	4.330	0.003
Internal Controls → FDAF	0.180	0.177	3.600	0.007
Fraud Prevention → FDAF	0.220	0.225	4.400	0.002
Compliance with Regulations → FDAF	0.290	0.295	5.800	0.001

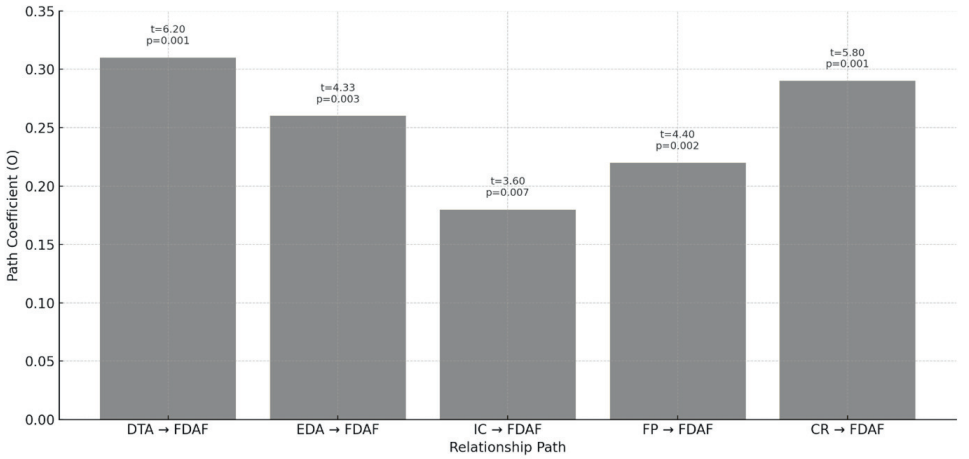

Figure 2: Path Coefficient (Direct Effect)

The analysis of moderating effects in Table 8 and Figure 3 reveals that public trust significantly improves the relationship between all five predictor variables and the perception of the FDAF, with all interaction terms demonstrating statistically significant p-values ($p < 0.05$). Among the interaction terms, the moderating effect of public trust was most pronounced in the relationship between internal controls and FDAF ($\beta = 0.091$, $t = 2.64$, $p = 0.009$), followed closely by fraud prevention ($\beta = 0.088$, $t = 2.33$, $p = 0.020$). These results suggest that the perceived contribution of internal controls and fraud-prevention efforts to the forensic framework is amplified significantly when public trust in digital auditing systems is high. The trust serves as a psychological enabler, heightening stakeholder confidence in the reliability of digitally enforced auditing measures.

Similarly, the interaction effects between public trust and other predictors of digital transformation in auditing ($\beta = 0.072$, $t = 2.21$, $p = 0.028$), compliance with regulations ($\beta = 0.063$, $t = 2.01$, $p = 0.042$), and the efficiency of digital auditing ($\beta = 0.054$, $t = 1.89$, $p = 0.049$) were also statistically

significant, albeit with slightly lower effect sizes. These findings indicate that, although these constructs already exert a direct positive impact on FDAF, their influence is amplified in contexts where the public perceives auditing technologies as credible and transparent. Essentially, trust serves as a reinforcing mechanism that strengthens the link between digital audit strategies and their acceptance and perception in public-sector governance. These findings underscore the importance of cultivating public confidence to maximise the institutional value derived from forensic digital auditing technologies in Malaysia's public sector.

Table 8: Path Coefficient (Moderator)

Relationship	Coefficient Sample (O)	Coefficient Sample (M)	t-statistics (O/ STERR)	p-values
Digital Transformation × Public Trust → FDAF	0.072	0.070	2.21	0.028
Efficiency of Digital Auditing × Public Trust → FDAF	0.054	0.052	1.89	0.049
Internal Controls × Public Trust → FDAF	0.091	0.089	2.64	0.009
Fraud Prevention × Public Trust → FDAF	0.088	0.086	2.33	0.020
Compliance with Regulations × Public Trust → FDAF	0.063	0.062	2.01	0.042

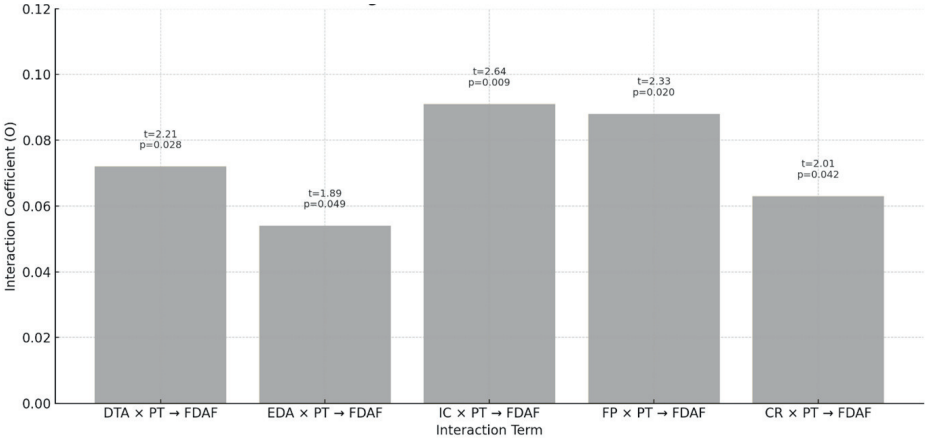

Figure 3: Path Coefficient (Moderator)

The results of this study highlight the central roles of compliance, audit efficiency, internal controls, and fraud prevention in reinforcing the perception of forensic digital auditing within the Malaysian public sector. Respondents expressed strong confidence in compliance mechanisms supported by digital systems, particularly in promoting transparency and ensuring adherence to both local and international regulations. These findings support Strauss et al. (2020), who argued that regulatory frameworks embedded within digital audit systems are essential for enhancing credibility in public financial management. The present study also aligns with Shamsudin et al. (2025), who identified the utilisation of predictive analytics, real-time monitoring, and automation as key contributors to increased audit efficiency, especially within large-scale public institutions. Internal controls, when digitally enabled, were viewed

as necessary safeguards for mitigating financial mismanagement. Handoyo (2024) similarly emphasised that integrating audit technologies significantly improves internal control procedures by enabling error detection, enforcement of controls, and risk mitigation.

Beyond operational functions, this study confirms the vital role of public trust in strengthening internal controls and fraud-prevention strategies. Trust was found to enhance the perception of audit processes, reflecting a broader shift in audit governance towards a trust-centric model. As Makanga et al. (2025) asserted, the success of fraud prevention systems depends not only on technological design but also on their public legitimacy. This finding is further corroborated by Khan (2025), who noted that citizens' perceptions of fairness, ethical practice, and auditor independence strongly influence trust in digital auditing outcomes. These comparisons demonstrate that digital capabilities must be matched with trust-building measures to ensure that compliance, internal control, and fraud-prevention initiatives are both effective and sustainable in the public sector.

5.0 Conclusion

The findings of this study reinforce the pivotal role of digital transformation in shaping the perception of forensic digital auditing in the Malaysian public sector. The results clearly demonstrate that variables such as digital transformation in auditing, efficiency of digital auditing, internal controls, fraud prevention, and compliance with regulations all significantly and positively influence the perception of the FDAF. Among these, digital transformation and regulatory compliance have emerged as the most influential predictors, indicating that modernising audit practices and adhering to evolving regulatory requirements are key drivers of audit credibility, transparency, and reliability. These relationships are substantiated by strong path coefficients and statistical significance in the structural model, indicating the readiness of the public sector to adopt advanced audit tools, such as AI, RPA, and real-time dashboards.

Additionally, this study highlights the moderating effect of public trust as an essential component that amplifies the strength of these relationships. Public trust was shown to moderate all five independent variables significantly, with the strongest interaction observed between internal controls and FDAF. These results indicate that when the public perceives digital auditing systems as trustworthy, transparent, and tamper-proof, the effects of internal controls, fraud-prevention mechanisms, and regulatory compliance become even more pronounced. Thus, trust serves as both a catalyst and stabiliser that enhances the acceptance of digital practices while reducing scepticism about technological surveillance or misuse. This dynamic is especially critical in Malaysia, where concerns about governance, accountability, and digital literacy remain prominent.

5.1 Theoretical, Managerial, and Policy Implications

Theoretically, this study advances the discourse on forensic digital auditing by empirically validating a multidimensional framework integrating digital transformation, internal controls, fraud prevention, compliance, and public trust. By demonstrating the significant direct effects of these constructs and the moderating influence of trust on perceptions of forensic digital auditing frameworks, this study extends the application of technology acceptance and institutional trust theories to a specialised public sector context. The findings highlight that technological innovation alone is insufficient without institutional and societal acceptance, particularly in

governance-intensive environments such as Malaysia's public audit system. The study also contributes to auditing theory by providing empirical evidence that aligns digital capabilities to governance objectives such as transparency, accountability, and regulatory compliance.

From managerial and policy perspectives, the findings provide critical insights for audit institutions, public service leaders, and national policymakers. Managers in public sector audit units should prioritise investments in digital tools that improve efficiency, internal control, and fraud detection while also initiating cultural change programmes to build digital confidence among staff. At the policy level, this study highlights the importance of establishing a unified national digital audit framework with clear standards for the interoperability, cybersecurity, and legal admissibility of digital evidence. Furthermore, policymakers must update outdated regulatory frameworks to accommodate emerging technologies and incorporate trust-building measures, including transparent reporting, audit trail integrity, and stakeholder engagement, into governance reforms. Collectively, these implications signal a paradigm shift towards a digitally empowered, trust-driven public audit ecosystem in Malaysia.

5.2 Limitations and Recommendations

Despite its valuable contributions, this study has several limitations that warrant consideration and provide direction for future research. First, the cross-sectional design limits the ability to draw causal inferences about the relationships between digital transformation, audit performance variables, and public trust. Longitudinal studies would enable future researchers to investigate how these relationships evolve over time, particularly in response to rapid technological advancements and evolving governance landscapes. Second, although the study achieved a substantial sample size of 407 respondents, it was confined to the Malaysian public sector, which may limit the generalisability of the findings to other geopolitical or institutional contexts. Future research could adopt comparative designs across different countries or regions to explore cultural and institutional variations in digital audit implementation. Additionally, this study relied on self-reported data, which may be subject to social desirability bias. Future studies could integrate observational or secondary data to triangulate findings and enhance validity.

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