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AUGMENTATION VS. AUTOMATION: THE FUTURE OF EXTERNAL AUDITING IN SRI LANKA IN THE ERA OF GENERATIVE AI

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1. ABSTRACT

The emergence of Generative Artificial Intelligence (GenAI) and Large Language Models (LLMs) presents a fundamental shift in the accounting profession, challenging traditional audit methodologies and workforce structures. This literature synthesis examines the tension between augmentation, which means enhancing human cognitive capabilities, and automation, which means replacing manual auditor tasks, within external auditing, with a specialized focus on the emerging economic and institutional landscape of Sri Lanka. By synthesizing recent empirical literature, regulatory frameworks and professional standards, this paper analyzes how GenAI transforms key audit phases, from risk profiling and contract abstraction to automated workpaper generation and disclosure verification. Furthermore, it evaluates Sri Lanka's unique market dualism between Big Four local affiliates and Non-Big Four firms, highlighting disparities in technological infrastructure, talent readiness, and regulatory oversight by bodies such as CA Sri Lanka and the Sri Lanka Accounting and Auditing Standards Monitoring Board (SLAASMB). The paper synthesizes an analytical framework demonstrating that while routine transactional verification faces high automation, high-judgment domains remain firmly augmented under a human-in-the-loop (HITL) paradigm. Strategic recommendations for firms, regulators and educators are provided to navigate algorithmic governance, hallucination risks and data sovereignty.

KEYWORDS: Generative AI, External Auditing, Augmentation, Automation, Sri Lanka, Audit Quality, Task-Technology Fit, Human-in-the-Loop (HITL), SLAASMB, CA Sri Lanka.

2. INTRODUCTION

External auditing is one of the foundational pillars of capital market integrity. It validates financial disclosures and reduces the information asymmetry that exists between corporate managers and external stakeholders, who cannot observe the affairs of a company from the inside. Investors, lenders, regulators and the general public rely on the audit to assure them that the financial statements can be trusted. Anything that changes how audits are done therefore matters far beyond the audit profession itself.

Historically, technological disruptions in auditing evolved in a fairly linear way. The work moved from manual ticking and tying of paper ledgers to Electronic Data Processing (EDP) systems, then to spreadsheet utilities, and then to generalized audit software (GAS) and Robotic Process Automation (RPA). Each of these steps made the auditor faster and more accurate at repetitive work, but none of them changed the essential nature of the audit. The auditor still read the evidence, applied the standards, and formed a judgement.

Generative AI is different. Powered by multi-modal Large Language Models (LLMs) and Retrieval-Augmented Generation (RAG), it represents a non-linear, cognitive leap rather than another incremental improvement. Deterministic systems follow pre-programmed rules and can only flag outliers that fit a defined pattern. GenAI possesses semantic reasoning capabilities. It can synthesise unstructured narratives, interpret complex accounting standards, cross-verify footnoted disclosures, and draft audit workpapers in plain language. This is not a faster version of the old tools. It is a different kind of capability altogether.

This evolution re-opens a critical professional debate. Will GenAI automate the external audit function and replace human auditors? Or will it augment cognitive performance and elevate professional scepticism and judgement? The answer matters, because the two paths lead to very different futures for the profession.

In developing economies like Sri Lanka, this question carries peculiar urgency. The audit ecosystem operates under a distinct dual structure. On one end, local member firms of international networks, the Big Four, leverage global technology stacks, RAG-grounded proprietary AI tools and enterprise cloud agreements. On the other end, small-to-medium practices (SMPs) and Non-Big Four firms manage resource constraints, legacy software, and a rapidly shifting macroeconomic environment following the recent national debt restructuring

and economic stabilisation efforts. Understanding how GenAI intersects with these systemic realities requires a careful synthesis of academic literature, professional standards and local institutional dynamics.

This paper provides that synthesis. It is organised as follows. Section 2 sets out the theoretical foundations. Section 3 examines how GenAI is applied across audit tasks, distinguishing augmentation from automation. Section 4 analyses the Sri Lankan contextual landscape. Section 5 presents a comparative analysis of audit activities across the two modes. Section 6 examines risks, ethics and algorithmic governance. Section 7 proposes a future research agenda and strategic roadmap. Section 8 concludes.

2. THEORETICAL FOUNDATIONS

To conceptualise how GenAI alters external audit practice, the literature draws upon two primary theoretical models: Task-Technology Fit (TTF) and Socio-Technical Systems (STS) theory.

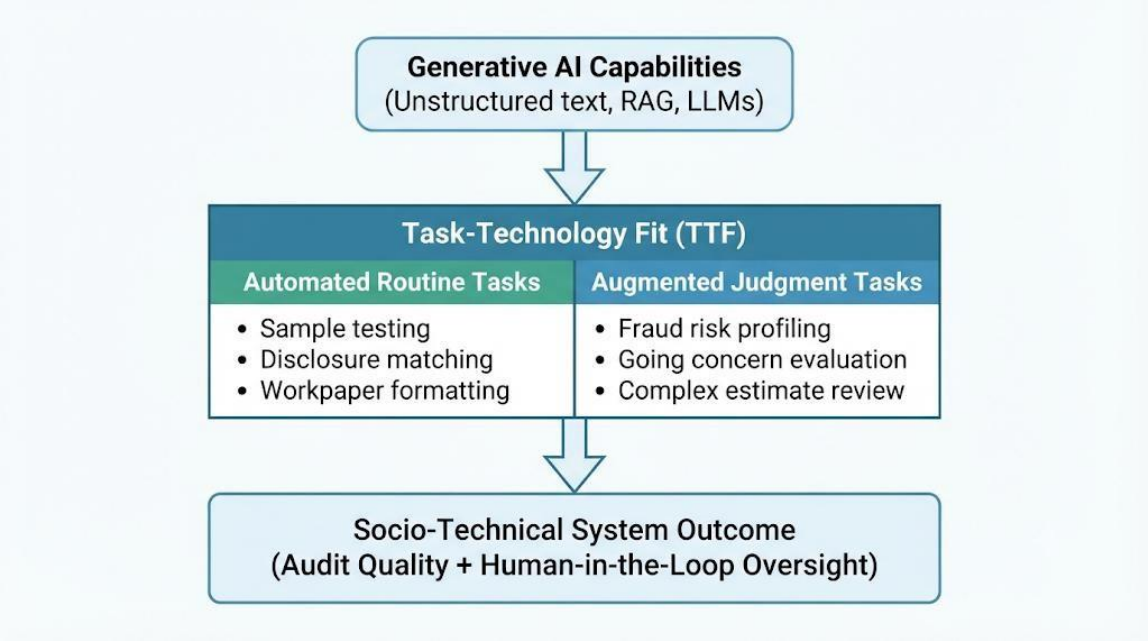

Figure 1. Theoretical framework: TTF and STS in the audit context.

2.1 Task-Technology Fit (TTF)

Task-Technology Fit asserts that information technology increases individual performance and is adopted by users only when its capabilities match the tasks the user must perform. The theory is useful here because audit tasks are not uniform. They range along a spectrum from highly structured procedural checks, such as matching purchase orders to invoices, to highly unstructured, judgement-intensive evaluations, such as estimating the impairment of goodwill

or assessing going-concern assumptions under macroeconomic volatility.

Two conclusions follow from TTF. First, there is a high automation fit for tasks that are high-volume, structured or semi-structured, and repetitive, where algorithmic verification yields immediate, rule-consistent outputs. These are the tasks where GenAI can take over with minimal human input. Second, there is a high augmentation fit for qualitative, unstructured tasks, where GenAI synthesises complex client context and presents candidate risks or draft arguments for human audit validation. The technology fits the task well, but the human remains essential to the outcome. The distinction between these two fits is the backbone of this paper.

2.2 Socio-Technical Systems (STS) Theory

STS theory posits that an organisation achieves optimal performance only through the joint optimisation of its social subsystem and its technical subsystem. The social subsystem consists of human expertise, professional scepticism and ethics. The technical subsystem consists of AI algorithms, cloud architectures and RAG pipelines. Neither subsystem can be improved at the expense of the other without harming overall performance.

The theory has a direct warning for the audit profession. Replacing human agency with unmonitored automation degrades the social subsystem and invites what the literature calls automation bias, where auditors passively accept algorithmic outputs without independent verification. The auditor stops questioning the machine, and the audit loses the scepticism that gives it its value. Conversely, effective augmentation embeds the Human-in-the-Loop (HITL) architecture, which ensures that professional scepticism remains the primary governance filter over everything the machine produces. STS theory, in short, explains both why automation is attractive and why it must be contained.

3. GENERATIVE AI IN EXTERNAL AUDIT: AUGMENTATION VS. AUTOMATION

The literature clearly delineates audit tasks into two distinct trajectories: cognitive augmentation and task-level automation.

3.1 Cognitive Augmentation: The Human-in-the-Loop Paradigm

Augmentation occurs when GenAI acts as an intelligent co-pilot, enhancing an auditor's cognitive scope, speed and depth of analysis without stripping away ultimate decision-making authority.

Unstructured Evidence Synthesis. Traditional audit tools struggle with non-standardised documents, such as complex debt restructuring agreements, lease contracts and legal correspondence. GenAI tools extract, summarise and flag unusual clauses or covenant breaches across thousands of pages in seconds, presenting targeted summaries to auditors.

Dynamic Risk Profiling. By analysing industry trends, news feeds, board meeting minutes and financial ratios simultaneously, GenAI assists teams during audit planning by highlighting emerging tail-risks and proposing tailored audit procedures.

Technical Accounting Research. Enterprise RAG systems allow practitioners to query authoritative literature, such as the Sri Lanka Accounting Standards (SLFRS/LKAS) or International Financial Reporting Standards (IFRS), in natural language, generating precise citations and comparative disclosure examples.

In these scenarios, GenAI does not render an opinion. It reduces information search costs, allowing human auditors to focus their time on evaluating qualitative nuances and challenging management assertions.

3.2 Task-Level Automation: Transactional and Procedural Auditing

Automation, by contrast, involves end-to-end execution of specific audit procedures with minimal human intervention.

Full-Population Disclosure Verification. Rather than testing disclosures through limited sampling, GenAI algorithms scan complete draft financial statements against required disclosure checklists, such as the LKAS 1 presentation requirements or SLFRS 16 lease disclosures, automatically flagging missing notes or cross-referencing errors.

Automated Workpaper Generation. GenAI can ingest raw client data and walkthrough audio transcriptions to draft structured control narratives, process flowcharts and standardised audit workpapers automatically.

Routine Compliance and Sampling Analysis. Integrating GenAI with transactional anomaly detection algorithms allows 100 per cent population analysis of general ledger entries, automatically generating documentation for non-anomalous items while routing complex outliers to human specialists.

4. THE SRI LANKAN CONTEXTUAL LANDSCAPE

Applying global GenAI frameworks to Sri Lanka necessitates evaluating local institutional, market and technological realities.

4.1 Market Dualism: Big Four vs. Non-Big Four Dynamics

Empirical findings in the Sri Lankan context indicate that while auditors across both Big Four and Non-Big Four firms recognise AI's potential to significantly enhance audit quality, key structural differences dictate adoption speeds.

Big Four Member Firms. These firms capitalise on multi-million dollar global parent investments in localised GenAI environments, such as firm-specific closed GPT instances. These tools operate within secure client data boundaries, mitigating confidentiality risks under the Code of Ethics issued by the Institute of Chartered Accountants of Sri Lanka (CA Sri Lanka).

Non-Big Four and Small-to-Medium Practices (SMPs). These firms face financial barriers to licensing enterprise-grade secure LLMs. Consequently, SMPs rely more heavily on off-the-shelf software or basic vendor integrations, elevating risks related to client data privacy, unauthorised cloud ingestion and hallucinated accounting interpretations.

4.2 Regulatory and Capacity Constraints

The Sri Lankan audit environment is governed by CA Sri Lanka, which adopts Sri Lanka Auditing Standards (SLAuSs) mirrored from IAASB standards, and by oversight from the Sri Lanka Accounting and Auditing Standards Monitoring Board (SLAASMB). Key contextual friction points include the following.

Data Sovereignty and Privacy. The implementation of Sri Lanka's Personal Data Protection Act (PDPA) No. 9 of 2022 introduces strict compliance mandates regarding cross-border data transfers and automated processing of personal data. Transmitting client financial data to foreign public LLM servers poses direct legal risks.

Macroeconomic Volatility and Complex Estimates. Sri Lanka's recent economic restructuring requires rigorous audit scrutiny over foreign exchange loss recognitions, impairment of sovereign debt holdings, and going-concern assessments. GenAI models trained primarily on Western, stable-economy datasets often struggle to accurately model hyper-volatile emerging market scenarios without extensive localised prompt engineering and fine-tuning.

Talent Pipeline Transformation. Local university curricula and professional qualifying tiers, such as CA Sri Lanka, CIMA and ACCA, are historically weighted toward manual technical compliance. There is an immediate structural deficit in auditors skilled in prompt engineering, data architecture, AI auditing and algorithmic bias detection.

5. COMPARATIVE ANALYSIS: AUGMENTATION VS. AUTOMATION ARCHETYPES

To synthesise the operational impact on external auditing, Table 1 categorises major audit activities across the spectrum of technology deployment, required human oversight and primary risk vectors.

Table 1. Augmentation vs. automation across the audit process.

Audit Phase	Audit Activity	Primary Mode	Key GenAI Mechanism	Human-in-the-Loop (HITL) Role	Dominant Risk Vector
Pre-Engagement & Planning	Client Acceptance & Preliminary Risk Identification	Augmentation	Summarisation of public records, legal news and prior-year qualitative disclosures	Evaluating management integrity and determining overall engagement risk	Misinterpreting contextual nuances or media bias
Internal Control Evaluation	Walkthrough & Narrative Documentation	Automation	Multimodal conversion of interview audio and notes into structured flowcharts and narratives	Reviewing generated narratives for completeness and testing control effectiveness	Omission of informal or undocumented control overrides
Substantive Procedures	Contract Abstraction (e.g., SLFRS 16 Leases, Revenue Contracts)	Automation	Automated extraction of key clauses, dates, discount rates and termination options	Auditing non-standard custom clauses and high-judgment provisions	Parsing ambiguous or poorly scanned legal syntax
Substantive Procedures	Valuation & Accounting Estimate Review	Augmentation	Scenario modelling, benchmark comparison and anomaly sensitivity analysis	Challenging management's key assumptions and macroeconomic forecasts	Model hallucination or reliance on flawed baseline training data
Final Review & Reporting	Financial Statement & Disclosure Compliance Checks	Automation	Cross-referencing draft statements against LKAS/SLFRS checklists and footnoted figures	Assessing qualitative materiality and overall presentation fairness	False negatives on novel or customised accounting treatments

Figure 2. Augmentation vs. automation archetypes across audit phases.

6. RISK, ETHICS AND ALGORITHMIC GOVERNANCE

The integration of GenAI into external auditing introduces unique risk profiles that threaten audit quality if improperly managed.

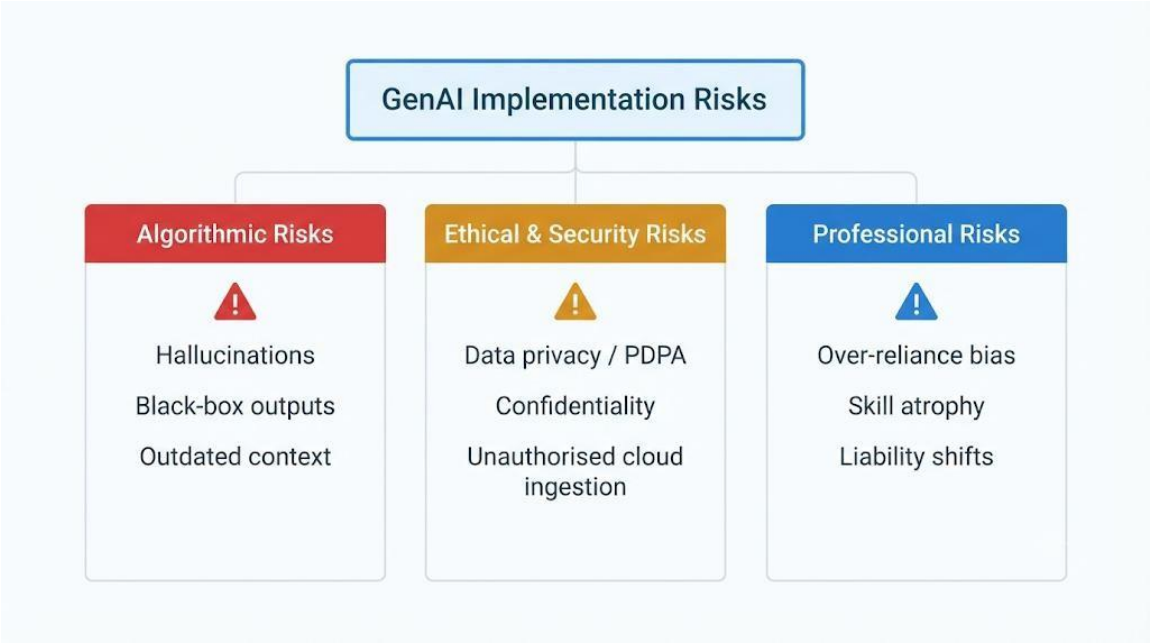

Figure 3. GenAI implementation risk categories.

6.1. Hallucinations and Fabricated Authorities

LLMs can generate plausible yet entirely non-existent accounting standard clauses or audit precedents. Auditors who rely on unverified GenAI outputs violate SLAuS 200, which sets out the overall objectives of the independent auditor. A fabricated citation is worse than no citation at all, because it looks authoritative.

6.2. The "Black Box" Problem and Explainability

Deep learning architectures lack inherent transparency. Under professional auditing standards, auditors must be able to justify and defend every audit conclusion. If an auditor cannot explain how an AI model arrived at a risk classification, the output cannot serve as sufficient appropriate audit evidence under SLAuS 500. Explainability is not a preference. It is a

requirement of the standards.

6.3. Over-Reliance and Cognitive Atrophy

Junior auditors who rely on GenAI to perform contract reviews or draft audit memos risk failing to develop fundamental critical thinking skills and professional scepticism. Over time, this creates a professional skill gap at senior and partner levels. The danger is subtle because the junior auditor appears productive while the underlying judgement is not being exercised.

6.4. Data Security and Ethical Compliance

Ingesting unencrypted, proprietary client financial statements into public LLMs constitutes a direct breach of the fundamental ethical principles regarding confidentiality set out in the CA Sri Lanka Code of Ethics. The duty of confidentiality does not pause because the tool is convenient.

7. FUTURE RESEARCH AGENDA AND STRATEGIC ROADMAP

To foster a sustainable transition toward GenAI-enabled auditing in Sri Lanka, key stakeholders must execute targeted initiatives across three distinct horizons, as summarised in Table 2.

Table 2. Strategic roadmap (2026 onwards).

Stakeholder Group	Strategic Priority Actions
Regulators & Professional Bodies (SLAASMB, CA Sri Lanka)	Issue binding guidance on GenAI use in financial audits. Establish a national AI Audit Quality Inspection Framework.
Audit Practitioners & Firms (Big Four & SMPs)	Adopt enterprise RAG architectures grounded strictly in LKAS/SLFRS standards. Enforce mandatory double-sign-off protocols for AI-assisted workpapers.
Academic Institutions & Educators	Redesign accounting degrees to integrate data science, prompt engineering and algorithmic governance alongside SLAuSs.

Figure 4. Strategic roadmap (2026 onwards) for GenAI in Sri Lankan auditing.

7.1. Key Areas for Empirical Inquiry

Three areas deserve particular research attention in the Sri Lankan setting.

Empirical Measurement of Audit Quality. Future research should quantitatively assess whether GenAI-augmented audits in Sri Lanka detect financial misstatements or fraud at significantly higher rates compared with conventional audit methodologies.

Behavioural Studies on Auditor Scepticism. Investigating how varying levels of GenAI explanation detail affect junior versus senior auditors' willingness to challenge machine-generated outputs would inform how audit teams should be supervised.

Economic Viability for Small-to-Medium Practices. Examining collaborative resource-sharing models or national utility platforms that allow Sri Lankan SMPs to access secure, localised GenAI auditing engines without prohibitive capital expenditure would address the market dualism identified in Section 4.1.

8. CONCLUSION

Generative AI is neither a panacea that will instantaneously render human auditors obsolete, nor a mere transient efficiency tool. The future of external auditing in Sri Lanka resides firmly in a state of augmented intelligence, where task-level automation absorbs labour-intensive data processing, contract parsing and routine compliance verification, thereby shifting human effort toward high-level cognitive analysis, strategic risk evaluation and professional scepticism.

While the Big Four in Sri Lanka lead this shift through global technology integrations, ensuring overall audit quality across Sri Lanka's financial markets requires active regulatory leadership from CA Sri Lanka and SLAASMB, alongside structured capacity building for small and medium practices. By establishing robust algorithmic governance, enforcing strict data sovereignty standards under the PDPA, and updating professional training frameworks, Sri Lanka's auditing profession can harness Generative AI to raise audit quality, restore stakeholder trust and reinforce capital market resilience in the digital era.

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