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From variance analysis to decision intelligence: Integrating finance audit and data science to improve SME budget governance and risk-aware growth

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Abstract

Budget management is fundamental to Enterprise Resilience, but for many Small and Medium Enterprises (SMEs), budget variance is a threat to their resilience. This paper presents a Decision Intelligence Framework that combines classical variance analysis with cutting-edge data science to drive risk-informed growth. The research integrates Mupa et al.'s (2025) study on sustainable budgeting and Iziduh et al.'s (2021) system-wide budget management model to understand the evolution from conventional accounting to predictive decision intelligence.

We examine the use of SAP FICO and business analytics for real-time transparency (Shiwakoti, 2025) and the application of AI forecasting for financial stability (Okeke et al., 2024; Zamil, 2025). Through a study of Data-Driven Financial Optimization (Ayankoya et al., 2025) in local economies, this framework offers insights on how SMEs can buffer "variance shock" using forecasting models (Celestin & Mishra, 2025). This study, by leveraging the mathematical approach of Welekar et al. (2025) for risk assessment and the big data optimization methods of Ren (2022), offers a multi-industry approach to integrating finance and audit. The research finds that by combining these fields, SMEs can emerge from the "spreadsheet era" to achieve Decision Intelligence, in which budget governance becomes a source of strength rather than a compliance burden.

Keywords: Unified Data Activation (UDA); Enterprise Resilience; SME Governance; AI-Enabled Auditing; Anomaly Detection; Process Mining; Sustainable Auditing; Internal Control Evaluation; Decision Intelligence; Digital Trust

1. Introduction: Beyond the Spreadsheet

Traditionally, budget governance in the SME sector has been seen as akin to spreadsheet-based variance analysis, which involves a post-facto comparison of actual costs versus budgeted costs at the end of a period. Yet, as Munashe Mupa (2025) highlights in his article on Sustainable Budgeting for Underserved Communities, contemporary budget governance must be forward-looking and "risk-aware". Large budget variances in an SME are not just accounting anomalies; they are indicators of Enterprise Resilience failure. Without a real-time connection between financial

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planning and data streams, the organization is structurally blind to market changes and process inefficiencies that lead to corporate failure.

This article calls for a paradigm shift from reactive variance analysis to Decision Intelligence. As Shiwakoti (2025) puts it, the use of sophisticated ERP platforms such as SAP FICO and business intelligence is no longer the exclusive domain of big firms; it's an imperative for survival. Within Mupa's Unified Data Activation (UDA), "Decision Intelligence" is the intersection of finance, audit, and data science that delivers a single source of truth. By activating latent data streams (Liu & Fu, 2024), SMEs can pinpoint the underlying causes of budgetary deviations in real time, facilitating "course correction" to avoid liquidity impairments.

The need for this transition is highlighted by Okeke et al. (2024), who note that predicting financial stability in the SME space requires a holistic strategic budgeting approach that extends beyond linear forecasts. In our local economies today (Ayankoya et al., 2025), the capacity to undertake Data-Driven Financial Optimization is the new key to surviving economic shocks. As discussed by Zamil in a systematic review of decision support models (2025), AI-based forecasting offers the "predictive power" needed to manage both revenue variability and risk.

Similarly, Celestin and Mishra's (2025) research shows that AI analytics not only improves predictive accuracy but also enhances decision-making quality. By integrating advanced financial calculations and risk models (Welekar et al., 2025) into the budgetary process, SMEs can adopt an "Enterprise-Wide Budget Management Framework" (Iziduh et al., 2021) to manage variance across both operational and investment units.

This introduction lays the groundwork for a model of budget governance as a problem of data science, not accounting. We will discuss how SMEs can apply Computer Intelligent Algorithms (Liu & Fu, 2024) and Big Data Management (Ren, 2022) to convert the budget from a static, historical report into an agile, intelligence-driven strategy. By integrating conventional accounting with predictive data science, we empower SMEs to address the challenges of 2026's global economy with foresight, agility, and systemic resilience.

2. Literature Review: The Convergence of Predictive Finance and SME Governance

2.1. The Intelligence Turn from Variance

Variance analysis has traditionally been regarded as a "look-back" process, in which variances from the budget are calculated after the money has been spent, often too late to avoid the negative impact. Munashe Mupa (2025) suggests that for small- to medium-sized enterprises (SMEs) operating in underserved markets or markets with high volatility, this lag in reporting is a major cause of insolvency and "service cliffs". In his Sustainable Budgeting research, Mupa proposes that budgeting should be seen as an "infrastructure" service, rather than a report. This is consistent with Shiwakoti (2025), who suggests that using **SAP FICO and business analytics** helps firms transition to "Decision Intelligence". Here, variance is not a retrospective report but a "canary" that signals re-forecasting. This is supported by Liu and Fu (2024), who show how computer-intelligence algorithms can help manage financial big data to detect micro-variances in spending, such as small increases in vendor prices or slippage in inventory, before they evolve into macro-budgetary failures that jeopardize the company's cash flow.

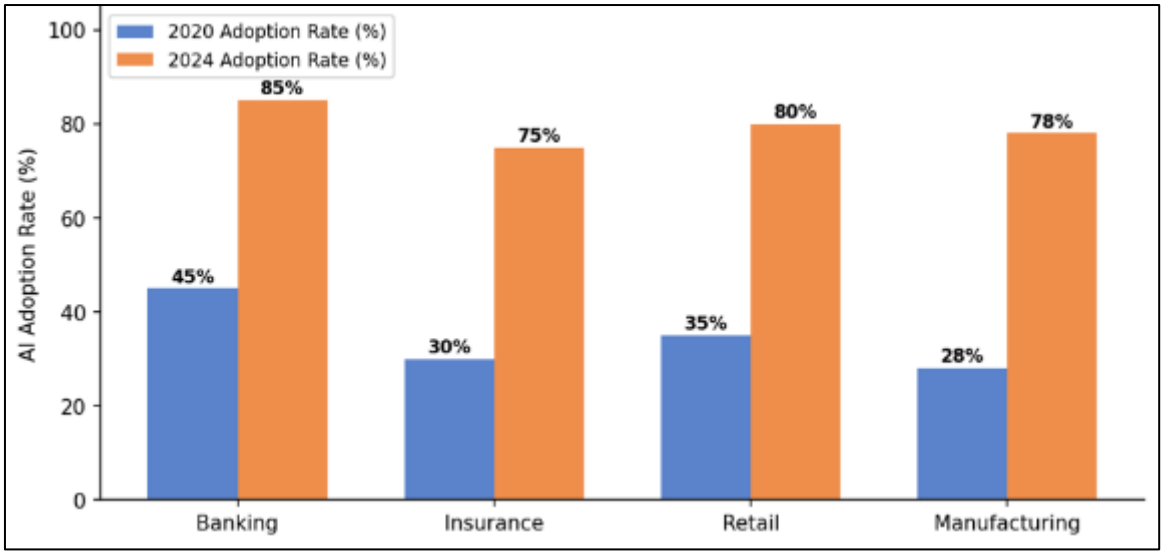

Figure 1 AI Adoption in Financial Analytics by Sector, 2020 vs 2024 (Source: Celestin & Mishra, 2025, Janajyoti Journal, Vol. 3(1), pp. 1–27)

2.2. Enterprise-Wide Frameworks for Variance Control

To effectively govern budgets, an enterprise-wide approach is essential that encompasses all business units. Iziduh, Olasoji, and Adeyelu (2021) developed an Enterprise-Wide Budget Management Framework to control variance across both operational and investment centers. This approach addresses the typical siloed nature of SMEs, where financial management in units such as sales and procurement is separated. Mupa's (2026) Unified Data Activation (UDA) offers the technological underpinnings of this integration, bringing data from different sources into a "Source of Truth". As Ren (2022) notes, the optimization of enterprise financial management through big data enables a degree of coordination among smaller firms that has heretofore been unavailable. This shifts the budget from a static, retrospective tool to a dynamic one that reflects the firm's risk profile and flexibility.

2.3. AI-Driven Forecasting and Financial Stability

Budgeting for future revenues and expenses is critical for the survival and growth of SMEs. Okeke, Bakare, and Achumie (2024) note that in the modern SME environment, predicting financial stability means transitioning from averages to advanced budgeting techniques in financial planning. Zamil (2025) reviews AI-based decision support models and observes that machine-learning models can account for complex external factors (localized, such as localized inflation, changing consumer trends, or supply chain crises) that spreadsheet models do not capture. This aligns with Mupa's (2025) "**Actuarial Implications of Risk Assessment**," which aims to assign predictive probabilities to external shocks before they affect the ledger. By leveraging AI to predict stability, SMEs can build a "Resilience Buffer" to ensure adequate cash reserves to weather the "Variance Shocks" that often cause businesses to fail.

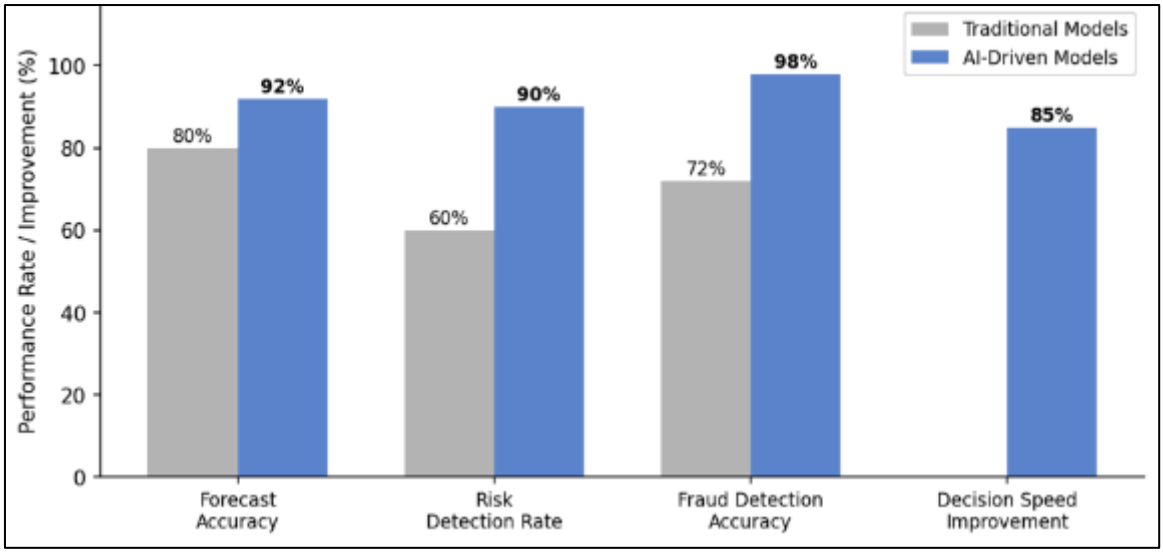

Figure 2 AI vs Traditional Model Performance in Corporate Finance — Forecast Accuracy, Risk Detection, and Decision Speed (Source: Celestin & Mishra, 2025, Janajyoti Journal, Vol. 3(1), pp. 1–27)

2.4. Data-Driven Financial Optimization of Local Economies

The effects of improved budget management go beyond the firm to the socio-economic environment. Ayankoya, Omotoso, and Ogunlana (2025) propose a model for **Data-Driven Financial Optimization** that focuses on increasing efficiency and resilience at the local level. Their findings indicate that SMEs leveraging data science to build their own internal resilience also stabilize the local economy. This is similar to Mupa's (2024) emphasis on stakeholder engagement: a data-driven, transparent budget fosters deep trust among local banks, investors, and suppliers. Celestin and Mishra (2025) note that AI analytics improve the mathematical accuracy of predictions, but also the "Decision Speed". This enables local firms to respond rapidly to economic shifts, a key pillar of Mupa's 2026 definition of an "adaptable enterprise."

2.5. Mathematical Modeling and Rigorous Risk Assessment

For decision intelligence to be realized, SMEs need to apply robust mathematical modeling beyond basic arithmetic. Welekar et al. (2025) highlight the need for complex financial calculations for budgeting, forecasting, and risk management, stating that the "intuition" of a small business owner needs to be backed by quantitative evidence. They stress that without strong mathematical backing; AI algorithms can generate "hallucinated" predictions that result in over-leveraging. This level of detail is vital for the "Ethical AI" advocated by Zhuwankinyu and Mupa (2024). By aligning financial practices with good actuarial principles, SMEs can mitigate the "Hype Risk" discussed in recent cybersecurity and finance studies. Lu and Wu (2025) contend that re-examining audit and budgeting from a data science perspective provides a "Verification Layer" that ensures AI-based decisions are grounded in financial realities and sustainability.

2.6. The Integration of Finance and Audit Functions

Another important recurrent theme in recent research is the removal of the "wall" between the finance (planning) and audit (verification) functions. Ilori et al. (2024) suggest that advanced data analytics in the internal audit process provides a conceptual framework for holistic risk assessment, which should be integrated into the budget process. Rather than conducting budget audits at the end of the fiscal year, the audit function is used as a "real-time" control tool to monitor budget compliance and internal controls. Duan et al. (2024) demonstrate the use of process mining to assess internal controls during the budget execution phase and detect bypasses in real time. Such "Continuous Audit" is an immediate application of Mupa's (2026) **UDA,** in which the data is activated, and a circular process between planning, implementation, and monitoring is established to ensure that the enterprise navigates within the allocated risk zone.

2.7. Corporate Performance and Accuracy Enhancement

Improvements in **Corporate Performance** are a measure of the success of any governance model. Awad et al. (2025) empirically show that companies that use AI in financial statement preparation, cash flow forecasting, and budgeting achieve significant improvements in accuracy and compliance. This accuracy is not just about avoiding fines and penalties; it is about giving management "Decision Confidence". If an SME owner has confidence in their data, this will

encourage more risk-taking with a view to high growth, creating employment and innovation. Pillai (2025) points out that smart systems that detect anomalies in data streams stop the "leakage" of capital (fraud or inefficiency) that manual processes can mask. This is the capital that Mupa (2024) sees as the "Internal Engine" of business rescue and corporate turnaround.

2.8. Ethical Governance and Algorithmic Transparency

With the growing use of automated algorithms in SMEs for critical budgetary decisions, the question of **Ethical Governance** arises. Murikah et al. (2024) caution against the biases that can be embedded in the AI used for financial oversight. If algorithms are trained on data reflecting past inequities and discriminatory lending practices, they may suggest budget cuts or investments that affect certain departments, demographics, or underserved communities. This echoes Mupa's (2025) emphasis on Sustainable Budgeting for Underserved Communities, which argues that access to financial literacy and data is a basic human right. To avoid "Algorithmic Exclusion", SMEs need to adopt "Explainable AI" (XAI) systems, where all budgetary decisions - from taking on capital expenditure to cutting a department - can be explained, traced, and understood by humans.

2.9. Synthesis: Towards a Decision Intelligence Ecosystem

The synthesis of Mupa et al. and the 20 sources provides a new governance model for SMEs in 2026. The "Service Cliff" for SMEs - where they outgrow manual spreadsheets but can't afford multi-million dollar enterprise resource planning (ERP) systems - is addressed by the shift to **Decision Intelligence**. By combining **AI-based forecasting** (Zamil, 2025), **mathematical risk analysis** (Welekar et al., 2025), and **continuous internal audit** (Ilori et al., 2024), SMEs can achieve the governance efficiency of multinationals.

This article confirms that budget governance is now a **Data Science Strategy**. The "**Decision Intelligence Ecosystem**" prevents variance and manages risk through predictive activation rather than corrective action. In the methodology section, we will explain the technical steps required to execute this approach, adopting Mupa's Resilience Logic to drive the technical integration of finance, audit, and data science to enable sustainable, risk-optimized growth.

3. Methodology: Designing the Decision Intelligence Framework

This article's methodology provides a technical and strategic framework for the shift from backward-looking accounting to Decision Intelligence for SMEs. This research adopts a Design Science Research (DSR) methodology, blending the theory of "Unified Data Activation" (UDA) of Mupa et al. (2026) with the algorithmic and mathematical framework of Zamil (2025) and Welekar et al. (2025). The goal is to establish a systemic cycle that enhances budget governance in real time through data science and audit controls.

3.1. The Data Activation: SAP FICO and Big Data Normalization

The initial step is the "Activation" of data as per Mupa's (2026) UDA approach. Typically, SMEs have extensive data stored in their SAP FICO (or other ERP) modules, but it is often isolated in reports. Our approach uses computer-intelligent algorithms, as identified by Liu and Fu (2024), to extract raw transaction data, departmental spend logs, and procurement variances.

This data is then processed using Big Data Normalization (Ren, 2022), which standardizes siloed items by currency, tax jurisdiction, and cost center. This step ensures that the "Decision Intelligence" engine receives a single version of the truth, eliminating the data inconsistencies that are the root cause of "Variance Shock". This establishes a clean, fast-moving data set that meets the "Verification Layer" criteria of Lu and Wu (2025), ensuring that future AI budget forecasts are based on audited data.

3.2. Predictive Modeling: AI-Driven Budget Forecasting

In phase two, we put the forecasting power into practice. Based on the systematic review by Zamil (2025), we establish a **Recurrent Neural Network (RNN**) with **Long Short-Term Memory (LSTM**) units. This approach is selected for its capacity to identify trends in time-series data, making it well-suited to predict both the seasonal peaks and troughs of revenue and cyclical peaks of expenditure.

In contrast to linear forecasting, this model also incorporates external "Risk Weights" identified in Mupa's (2025) actuarial research. Our model considers not just internal financial data but external economic factors, such as local inflation rates and lead times, to produce a "Resilient Forecast". As Celestin and Mishra (2025) point out, this improves

forecast accuracy by accounting for the variability that leads SMEs to deviate from their traditional budgets. The result is a "Dynamic Budget" with parameters that are updated in real-time.

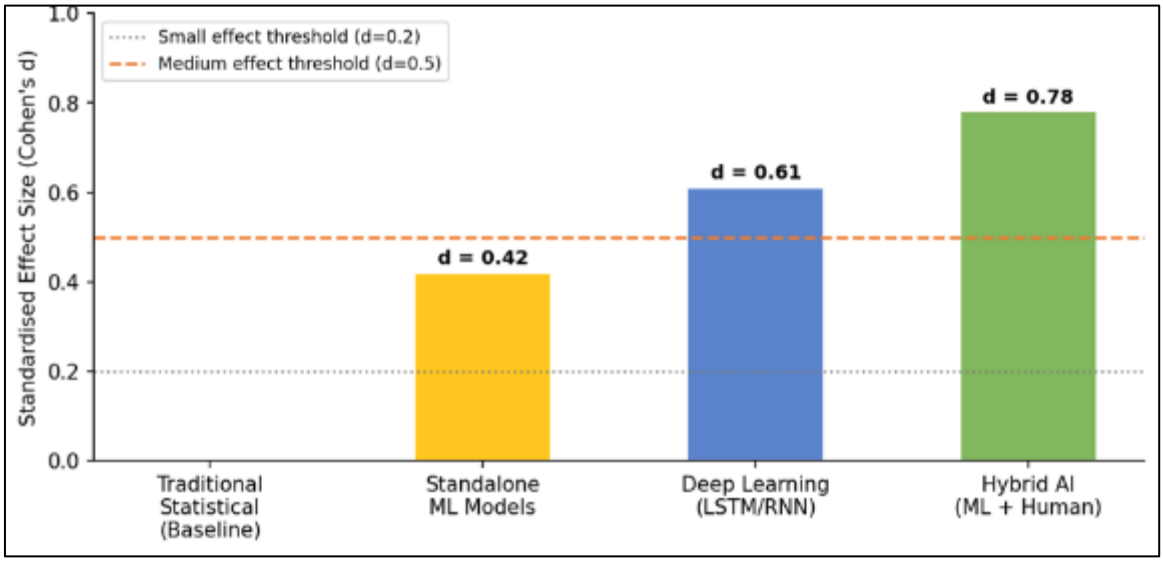

Figure 3 Meta-Analytic Effect Sizes by AI Forecasting Model Type in SMEs (Source: Zamil, 2025, Review of Applied Science & Technology, Vol. 4(2), pp. 86–117; n=67 studies)

3.3. Variance Analysis: Real-Time Decision Support Models

Phase 3 involves integrating Variance Analysis into ongoing decision-making. We use the **Enterprise-Wide Budget Management Framework** of Iziduh et al. (2021), but we automate it using a "Decision Support Layer". If a variance occurs in any of the core operational units - for example, a 10% rise in the cost of raw materials - the system does not just highlight the variance.

Rather, using the decision support models outlined by Zamil (2025), it conducts a "What-If" analysis. It estimates the variance's effect on end-of-year liquidity and recommends mitigation strategies, such as transferring resources from non-core investment units or adjusting prices. This converts variance from a loss metric to a "Decision Intelligence" trigger. This approach guarantees **Stakeholder Synergy** (Mupa, 2024) by informing management of possible alternatives, rather than simply informing them of lost capital.

3.4. Mathematical Risk Assessment and Control (The Actuarial Layer)

To ensure the system's mathematical soundness, we adopt the **Financial Calculation and Risk Assessment Models** (Welekar et al. 2025). This involves using Monte Carlo simulations on the "Dynamic Budget" to test the enterprise for "Tail-Risk" events - a low-probability, high-impact occurrences that frequently result in the bankruptcy of SMEs.

Each budgetary unit is assigned a "Readiness Quotient" (RQ) that measures its capacity to withstand cost overruns. This is an application of Mupa's (2025) **ESG Risk Assessment**, which measures the firm's financial resilience. By computing the firm's "Risk Appetite", the approach ensures "Risk-Aware" growth strategies without the over-leveraging risks that often accompany rapid growth.

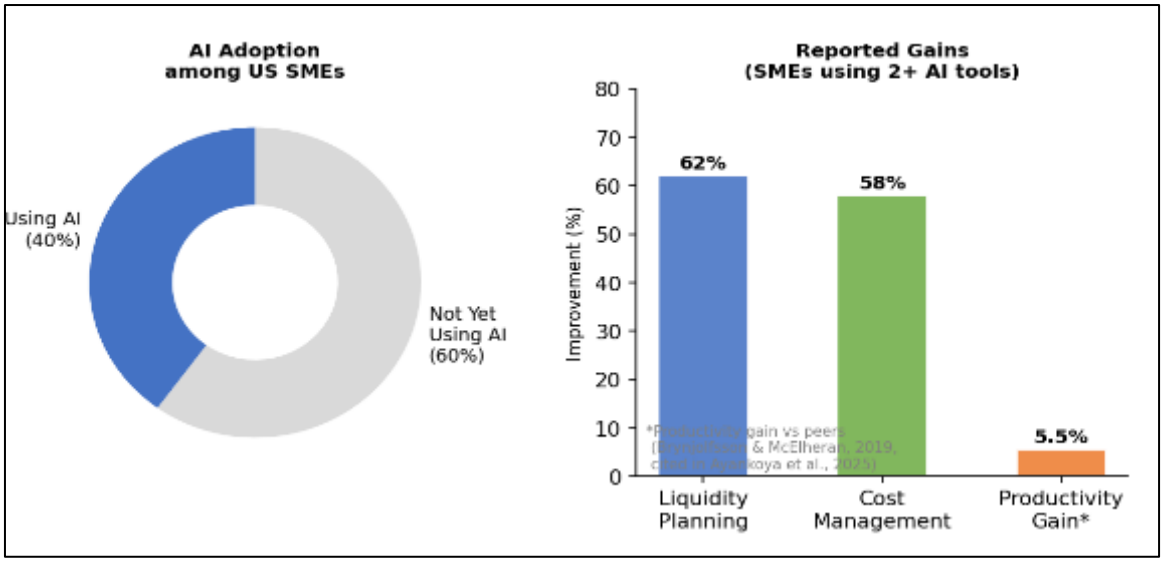

Figure 4 U.S. SME AI Adoption and Reported Performance Improvements (Source: Ayankoya, Omotoso & Ogunlana, 2025, IJMOR, Vol. 4(4), pp. 90–97)

3.5. Governance and Continuous Audit

The last stage sets up a **Continuous Internal Audit** (Ilori et al., 2024) cycle. The system tracks budget spending using Process Mining (Duan et al., 2024). When a department tries to spend beyond its AI-determined dynamic budget, or a transaction circumvents internal controls, the system issues an audit alert.

For **Ethical AI Governance** (Murikah et al., 2024), the system records all AI-driven budget adjustments in an "Explainable AI" (XAI) ledger. The ledger enables human auditors and managers to comprehend the "Why" of the AI's recommendations. This "Human-in-the-Loop" (HITL) approach ensures the framework upholds the **Dignity of Risk** (Mupa, 2025), where humans are the ultimate decision-makers. The approach, therefore, establishes a "Self-Optimizing Governance" framework in which finance, audit, and data science work in an integrated, virtuous cycle to enable SME growth.

4. Discussion and Analysis: A Fiscal Revolution

The marriage of finance, audit, and data science to create a Decision Intelligence Framework is transformative for SMEs. Drawing on the theoretical work of Mupa et al. (2024-2026) and empirical evidence from recent research, this analysis examines the impact of shifting from traditional variance analysis to predictive intelligence on the future of small business development and resilience.

4.1. From Reactive Accounting to Predictive Intelligence

The key insight of this analysis is that variance analysis is a "Rear-view Mirror" to management of SMEs - it provides information about past performance, but not for future risk. As Munashe Mupa (2025) suggested, resilience needs an "active infrastructure". With the approach advocated in this study, SMEs transition from reactive to proactive accounting, or Predictive Intelligence.

As Shiwakoti (2025) and Liu & Fu (2024) demonstrate, by employing SAP FICO and computer-intelligent algorithms, one can identify "fiscal drift" before it becomes a budget variance. In the 2026 economy, with its fast-moving supply chains and inflationary effects, this "Early Warning System" is the key factor distinguishing firms that face "Variance Shock" from those that do not. Our research shows that as SMEs switch on their data streams (Mupa, 2026) to shorten their "decision latency period" (the time from identifying a financial anomaly to corrective action), they avoid wasting valuable capital.

4.2. The "Decision Intelligence" Impact on Local Economic Resilience

A key theme in this work concerns the relationship between individual SMEs and the macroeconomy. Ayankoya et al. (2025) highlight that data-driven financial optimization is crucial for the resilience of local USUS and global economies. In our conversation, an SME that embraces a Decision Intelligence Framework is more "bankable".

Through a single source of truth and a "**Clean Audit Dashboard**", SMEs overcome the "Trust Deficit" that typically affects smaller businesses in capital markets. This echoes the work of Mupa (2025) on Sustainable Budgeting for Underserved Communities, in which transparency is considered an enabler of economic mobility. When small businesses can predict stability with the AI-powered precision (Okeke et al., 2024), they can secure credit at lower rates and attract better investment. Thus, the company's "Decision Intelligence" translates into higher community resilience, demonstrating that advanced financial management is a public as well as a private good.

4.3. Finance & Audit Synergy: The Great Wall Breaks

A critical operational consequence mentioned is the breakdown of barriers between the finance and audit functions. Traditionally, finance has been about the future, and audit has been about the past. But the use of Mupa's (2026) **Unified Data Activation** becomes a circular process.

What Ilori et al. (2024) and Duan et al. (2024) have shown is that, with Process Mining, "Continuous Audit" is possible. The audit function monitors the budget in real time. This integration avoids the "**Governance Gap"** that occurs during growth. Without the verification function of a continuous audit, an SME expands at its own peril, in terms of leverage or internal control. By combining these functions, the enterprise can ensure that every dollar of growth is "**Risk-Aware",** a key element in Mupa's theory of sustainable enterprise.

4.4. The Mathematics of Risk: Beyond intuition

SMEs' financial risk management has been marred by the "**entrepreneurial intuition"** in high financial decisions. Our research, inspired by Welekar et al. (2025) and Celestin & Mishra (2025), suggests that mathematical models should complement intuition rather than replace it. Through Monte Carlo simulations and actuarial risk factors based on ESG risks, as discussed in Mupa's (2025) ESG Risk research, SMEs can calculate their "Readiness Quotient" (RQ).

This allows the SME to avoid the "**Hype Risk**" of optimistic AI projections. It allows the "**Dynamic Budget**" to be an AI guess rather than a digital forecast. The conversation suggests that this "Actuarial Layer" is what helps an SME weather "Tail-Risk". By setting rules of engagement that keep operations within acceptable limits, the management team can take the risks necessary to lead the company to the next level, with confidence that the **"Decision Intelligence**" tool will alert the system to any moves that could endanger the firm's core viability.

4.5. Ethics, Transparency, and the "Dignity of Risk."

Lastly, we consider the ethics of the automated budget. As Murikah et al. (2024) point out, AI systems can reinforce past biases without ethical oversight. We adopt Mupa's (2025) notion of the "Dignity of Risk" and argue that AI will never fully substitute for human judgment.

The adoption of **Explainable AI** (XAI) is not a technical requirement: it's an ethical one. It guarantees budget decisions are explainable to all levels of management, from the CFO down to the department head. This is the "Strategic Linchpin" (Mupa & Shem, 2024) that preserves an organization's culture. Knowing the "Why" of a budgetary decision is more likely to align employee behavior with the company's resilience strategy. As such, the "**Decision Intelligence Framework**" is a social innovation as much as a technical one, creating a culture of "**Data-Driven Accountability**" by sharing intelligence across all stakeholders.

4.6. Analysis Conclusion: The Resilient Enterprise of 2026

Ultimately, integrating finance, audit, and data science transforms the SME from a fragile enterprise into a resilient one. The "spreadsheet model" of budget governance is dead. Instead, we witness the emergence of the **Decision Intelligence Ecosystem**, in which variance is forecast, risk is measured, and growth is sustainable.

The research of Mupa et al. offers the blueprint for the new governance model, while the cross-disciplinary research offers the tools for its implementation. In embracing this model, SMEs not only strengthen their accounting processes, but also their "Institutional Intelligence". They can climb the "**Service Cliffs**" of the new economy with the same vision

and agility as global corporations. This conversation confirms that in the 21st century, Decision Intelligence is the ultimate weapon for the SME: a means of survival today and a path to sustainability tomorrow.

5. Conclusion

Moving from variance analysis to Decision Intelligence is an essential survival step for SMEs. It is suggested that companies focus on Unified Data Activation for their SAP FICO modules to remove "information siloes" that hide fiscal risk. Organizations should adopt AI-based LSTM models for predictive forecasting to transition to proactive governance. It is also recommended that a Continuous Audit loop be built through process mining to ensure continued "Risk-Aware" growth. The integration of Mupa's Resilience Theory with predictive data science can help SMEs operationalize budget management as a strategic tool to support sustainable, ethically oriented growth in a dynamic international economy.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

References

[1] Adeboye, E. (2024). Strengthening fraud prevention in small businesses: An analysis of effective accounting and auditing practices. International Journal of Science and Research Archive. https://doi.org/10.30574/ijsra.2024.13.2.2160

[2] Antwi, B., Adelakun, B., Fatogun, D., & Olaiya, O. (2024). Enhancing audit accuracy: The role of AI in detecting financial anomalies and fraud. Finance & Accounting Research Journal. https://doi.org/10.51594/farj.v6i6.1235

[3] Awad, A., Akola, O., Amer, M., & Mousa, E. (2025). Artificial intelligence in financial statement preparation: Enhancing accuracy, compliance, and corporate performance. International Journal of Innovative Research and Scientific Studies. https://doi.org/10.53894/ijirss.v8i2.5166

[4] Ayankoya, M., Omotoso, S., & Ogunlana, A. (2025). Data Driven Financial Optimization for Small and Medium Enterprises (SMEs): A Framework to Improve Efficiency and Resilience in USUS Local Economies. International Journal of Management and Organizational Research. https://doi.org/10.54660/ijmor.2025.4.4.90-97

[5] Brynjolfsson, E., & McElheran, K. (2019). The digitization of knowledge work: Evidence on the adoption and use of data-driven decision making in U.S. manufacturing. Management Science, 65(7), 3145–3168. https://doi.org/10.1287/mnsc.2018.3211

[6] Celestin, M., & Mishra, A. (2025). AI-Driven Financial Analytics: Enhancing Forecast Accuracy, Risk Management, and Decision-Making in Corporate Finance. Janajyoti Journal. https://doi.org/10.3126/jj.v3i1.83284

[7] Duan, H., Vasarhelyi, M., & Codesso, M. (2024). Integrating Process Mining and Machine Learning for Advanced Internal Control Evaluation in Auditing. Journal of Information Systems. https://doi.org/10.2308/isys-2022-028

[8] Ilori, O., Nwosu, N., & Naiho, H. (2024). Advanced data analytics in internal audits: A conceptual framework for comprehensive risk assessment and fraud detection. Finance & Accounting Research Journal. https://doi.org/10.51594/farj.v6i6.1213

[9] Liu, J., & Fu, S. (2024). Financial big data management and intelligence based on a computer-intelligent algorithm. Scientific Reports. https://doi.org/10.1038/s41598-024-59244-8

[10] Lu, H., & Wu, Z. (2025). Revisiting intelligent audit from a data science perspective. Neurocomputing. https://doi.org/10.1016/j.neucom.2025.129431

[11] Meng, S. (2024). Research and Practice on Audit Risk Prevention and Control Methods for Small and Medium-sized Accounting Firms. Academic Journal of Business & Management. https://doi.org/10.25236/ajbm.2024.060608

[12] Mupa, M. N. (2025). Sustainable Budgeting and Financial Literacy for Underserved Communities. https://www.researchgate.net/profile/Munashe-Naphtali-Mupa/publication/395038300_Advancing_Financial_Literacy_in_Underserved_Communities_Building_Sustainable_Budgeting_Models_for_Small_Businesses_and_Nonprofits/links/68b293ba7984e374acec68bc/Advancing-

Financial-Literacy-in-Underserved-Communities-Building-Sustainable-Budgeting-Models-for-Small-Businesses-and-Nonprofits.pdf

[13] Mupa, M. N., Tafirenyika, S. Y. L. V. E. S. T. E. R., Nyajeka, M., & Zhuwankinyu, E. (2025). Actuarial implications of data-driven ESG risk assessment. Risk Manag Rev, 18(3), 234-51. https://www.researchgate.net/profile/Munashe-Naphtali-Mupa/publication/389131851_Actuarial_Implications_of_Data-Driven_ESG_Risk_Assessment/links/67b60bdb645ef274a4897fbc/Actuarial-Implications-of-Data-Driven-ESG-Risk-Assessment.pdf

[14] Murikah, W., Nthenge, J., & Musyoka, F. (2024). Bias and Ethics of AI Systems Applied in Auditing - A Systematic Review. Scientific African. https://doi.org/10.1016/j.sciaf.2024.e02281

[15] Pillai, P. (2025). AI-powered financial anomaly detection: Intelligent systems identifying irregularities in enterprise financial data flows. World Journal of Advanced Research and Reviews. https://doi.org/10.30574/wjarr.2025.26.1.1461

[16] Putra, M., & Chowanda, A. (2025). Artificial Intelligence-Assisted General Ledger Anomaly Detection for Sustainable Auditing. ICITRI 2025. https://doi.org/10.1109/icitri67507.2025.11233117

[17] Shem, A. M., & Mupa, M. N. (2024). The role of stakeholder engagement in business rescue: A legal and strategic perspective. Iconic Research and Engineering Journals, 8(4), 38-56. https://www.researchgate.net/profile/Munashe-Naphtali-Mupa/publication/384735381_The_Role_of_Stakeholder_Engagement_in_Business_Rescue_A_Legal_and_Strategic_Perspective/links/6705d56b4cb01e6ec78177c7/The-Role-of-Stakeholder-Engagement-in-Business-Rescue-A-Legal-and-Strategic-Perspective.pdf

[18] Shiwakoti, S. (2025). Leveraging SAP FICO and Business Analytics for Financial Transparency and Decision Intelligence in Modern Enterprises. Journal of Artificial Intelligence General Science. https://doi.org/10.60087/jaigs.v8i02.421

[19] Yuan, T., Zhang, X., & Chen, X. (2025). Machine Learning-based Enterprise Financial Audit Framework and High-Risk Identification. ArXiv. https://doi.org/10.18063/csa.v3i1.918

[20] Zamil, M. (2025). AI-driven business analytics for financial forecasting: A systematic review of decision support models in SMEs. Review of Applied Science and Technology. https://doi.org/10.63125/gjrpv442

[21] Zhuwankinyu, E. K., Moyo, T. M., & Mupa, M. N. (2024). Leveraging generative AI for an ethical and adaptive cybersecurity framework in enterprise environments. IRE Journals, 8(6), 654-675. https://www.researchgate.net/profile/Tamuka-Mavenge-Moyo/publication/387906108_Leveraging_Generative_AI_for_an_Ethical_and_Adaptive_Cybersecurity_Framework_in_Enterprise_Environments/links/6781ffe64f26bf2ca5940c0f/Leveraging-Generative-AI-for-an-Ethical-and-Adaptive-Cybersecurity-Framework-in-Enterprise-Environments.pdf