

Adoption of Accounting Information Systems and AI Integration in Small-Scale Enterprises: Evidence from Central Region- Cape Coast, Ghana

Ezekiel Adu Mensah*, Chrysantus A. Yuorkuu, Michaelina Firmin Ansah

University of Mines and Technology-Tarkwa, Ghana

*Corresponding author

DOI: <https://dx.doi.org/10.47772/IJRISS.2025.910000129>

Received: 02 October 2025; Accepted: 07 October 2025; Published: 05 November 2025

ABSTRACT

This study examines the adoption of Accounting Information Systems (AIS) and the role of Artificial Intelligence (AI) in enhancing the performance of small-scale enterprises (SSEs) in Cape Coast Central Region, Ghana. Using a quantitative cross-sectional survey, data were collected from 204 SSEs through structured questionnaires. Descriptive statistics, one-sample t-tests, and multiple regression models were employed for analysis. Results showed that 42.5% of SSEs had adopted computerized AIS, surpassing manual methods (35%). One-sample t-tests revealed that cost, availability of skills, management support, and ICT infrastructure were significant determinants of AIS adoption ($p < 0.001$). Regression analysis indicated that skills availability was the strongest positive predictor, while cost exerted a negative effect, explaining 52% of the variance in adoption. Regarding performance, AIS adoption significantly improved decision-making, sales growth, profitability, and operational efficiency ($p < 0.001$). AI perceptions further explained 48% of performance variance, with cost reduction, accuracy, task simplification, and wider adoption all emerging as significant predictors. The findings highlight the dual importance of AIS and AI in boosting SSE competitiveness, while challenges such as high implementation costs and lack of technical skills remain. The study contributes empirical evidence to the digitalization of SSEs in developing economies and offers policy insights for promoting inclusive technology adoption.

Keywords: Accounting Information Systems (AIS), Artificial Intelligence (AI), Small-Scale Enterprises (SSEs),

INTRODUCTION

Small-scale enterprises (SSEs) are vital contributors to economic growth and development across the globe. In Ghana, SSEs account for over 80% of private sector activity, contribute nearly 70% of GDP, and employ a substantial portion of the population (Oppong, Owiredue, & Churchill, 2014). Despite their economic significance, many SSEs operate with limited financial management tools, leading to inefficiencies in record-keeping, decision-making, and access to credit (Ahiawodzie & Adade, 2012).

Accounting Information Systems (AIS) have emerged as an important tool for strengthening business processes by providing reliable financial information, enhancing internal control, and supporting strategic decision-making (Grande, Estebanez, & Colomina, 2011). The transition from manual record-keeping to computerized accounting has improved accuracy, reduced redundancy, and provided real-time insights for firms globally. However, barriers to adoption persist in developing economies.

The rapid advancement of Artificial Intelligence (AI) offers a new frontier for accounting systems. AI-driven solutions such as automated bookkeeping, predictive analytics, fraud detection, and intelligent chatbots can complement AIS by lowering operational costs and simplifying accounting tasks (Dai & Vasarhelyi, 2017). For SSEs in Ghana, adopting AIS alongside AI presents an opportunity to overcome long-standing barriers and enhance financial performance.

1.1 Research Objectives

The specific objectives of this study are as follows:

1. To examine whether SSEs in Cape Coast adopt Accounting Information Systems (AIS).
2. To assess the impact of AIS on the performance of SSEs.
3. To identify the challenges faced by SSEs in the use of AIS.
4. To explore how Artificial Intelligence (AI) can enhance AIS adoption and performance outcomes.

1.2 Research Hypotheses

Based on the objectives, the following hypotheses are proposed:

1. H1: Small-scale enterprises in Cape Coast are more likely to adopt computerized AIS than manual systems.
2. H2: Perceived cost significantly influences the adoption of AIS among small-scale enterprises.
3. H3: Availability of technical skills positively affects the adoption of AIS.
4. H4: Integration of Artificial Intelligence (AI) into AIS significantly enhances ease of adoption and utilization among SSEs.

LITERATURE REVIEW

2.1 Small-Scale Enterprises (SSEs) and Accounting

SSEs in Ghana are typically defined by their limited capital base, small workforce, and informal structures (Steel & Webster, 1990). They include traders, boutique owners, food vendors, artisans, and service providers. The survival of such enterprises often depends on effective record-keeping and financial control, yet many lack formal accounting systems (Appiah, Possumah, Ahmat, & Sanusi, 2018).

2.2 Adoption of Accounting Information Systems (AIS)

AIS adoption improves decision-making by providing accurate, reliable, and timely information (Perez, Urquía, & Muñoz, 2010). Prior studies reveal that small firms adopting computerized AIS experience enhanced profitability, efficiency, and access to external financing (Fagbemi & Adeyemi, 2016). Barriers to adoption include:

- High initial costs of technology.
- Lack of technical skills and training.
- Limited awareness of AIS benefits.

2.3 Artificial Intelligence in Accounting

Artificial Intelligence (AI) technologies are revolutionizing accounting practices across the globe by automating repetitive processes, improving accuracy, and enabling data-driven decision-making. AI applications in accounting now extend far beyond automation, influencing strategic planning, performance analysis, and fraud

prevention (Al-Htaybat & von Alberti-Alhtaybat, 2022).

Key areas of AI application in accounting include:

1. **Automated Bookkeeping:** AI algorithms can capture, classify, and post transactions with minimal human input, reducing manual errors and improving reporting accuracy (Kokina & Davenport, 2017).
2. **Predictive Analytics:** Machine learning models forecast sales, cash flows, and business risks, allowing enterprises to anticipate financial trends and plan proactively (Okafor, Nwachukwu, & Chijioke, 2023).
3. **Fraud Detection:** AI systems analyze large datasets to identify unusual patterns or anomalies that may signal fraud or misreporting (Dai & Vasarhelyi, 2017).
4. **Decision Support:** AI-driven tools such as chatbots and virtual assistants now provide financial guidance and insights, making complex accounting data more understandable for non-experts (Iyamah & Oguh, 2024).

For **small-scale enterprises (SSEs)**, AI has the potential to make Accounting Information Systems (AIS) more accessible, affordable, and impactful. Through intelligent automation, small businesses can reduce the costs of bookkeeping, improve financial accuracy, and access real-time insights for better decision-making (Agbozo & Derashri, 2025; Mahama & Dahlan, 2024).

Emerging studies in Ghana and other developing economies show that AI adoption in accounting is gradually increasing, particularly among tech-aware SMEs that recognize its role in improving efficiency and access to credit (Osei & Amponsah, 2024). However, barriers such as limited technical expertise, inadequate ICT infrastructure, and high software costs still constrain widespread adoption (Iyamah & Oguh, 2024).

Overall, AI represents a transformative force in accounting, particularly when integrated within AIS frameworks. It enables SSEs to move beyond manual bookkeeping toward data-driven financial management, ultimately enhancing competitiveness and business sustainability (Al-Htaybat & von Alberti-Alhtaybat, 2022; Okafor et al., 2023).

2.4 Theoretical Review

The adoption of AIS among small-scale enterprises can be understood through several theories. Contingency Theory emphasizes that there is no universal system design; AIS must fit the specific environment, size, and decision-making context of the enterprise (Donaldson, 2001; Otley, 2016). Agency Theory highlights AIS's role in reducing information asymmetry between owners and managers, ensuring accountability and reliability (Eisenhardt, 1989; Jensen & Meckling, 2000).

The Technology Acceptance Model (TAM) underscores perceived usefulness and ease of use as critical factors in AIS adoption (Venkatesh & Davis, 2000; Venkatesh, Thong, & Xu, 2012). This is particularly relevant for SSEs where owner-managers' attitudes significantly affect adoption. Additionally, the Resource-Based View (RBV) positions AIS and AI as strategic resources that generate competitive advantage when firms possess complementary assets such as skills, infrastructure, and organizational culture (Barney, 2001; Wade & Hulland, 2004).

Together, these theories provide a multidimensional explanation: Contingency Theory explains environmental fit, Agency Theory addresses accountability, TAM focuses on user perceptions, and RBV situates AIS and AI as enablers of long-term competitiveness.

2.5 How Artificial Intelligence (AI) Complements Accounting Information Systems (AIS) in Enhancing Efficiency and Financial Decision-Making:

Artificial Intelligence (AI) has emerged as a transformative complement to Accounting Information Systems

(AIS), revolutionizing how financial data is processed, analyzed, and applied to managerial decisions in small-scale enterprises (SSEs). While AIS traditionally focuses on collecting, recording, and reporting financial data, AI extends this functionality through automation, predictive analytics, and intelligent decision support (Al-Htaybat & von Alberti-Alhtaybat, 2022; Osei & Amponsah, 2024). Together, they form an integrated system that enhances efficiency, transparency, and strategic decision-making.

2.5.1 Enhanced Efficiency through Automation:

AI strengthens AIS by automating repetitive accounting tasks such as payroll, invoicing, and reconciliations. This not only saves time but also minimizes human errors (Iyamah & Oguh, 2024). For small enterprises with limited staff, AI-driven automation ensures transactions are processed faster and records remain accurate and up-to-date (Agbozo & Derashri, 2025). Additionally, AI-enhanced AIS continuously synchronizes financial data in real time, improving workflow efficiency and ensuring timely financial reporting.

2.5.2 Improved Financial Decision-Making through Predictive Insights:

Traditional AIS mainly offers retrospective analysis, but AI adds predictive and prescriptive capabilities. Machine learning models embedded within AIS can identify trends and forecast future financial performance. For example, AI can detect potential liquidity risks or predict sales fluctuations, enabling proactive financial planning (Okafor et al., 2023). In Ghana, where access to finance remains a key constraint for SSEs, predictive insights from AI-integrated AIS can improve creditworthiness and facilitate informed borrowing decisions.

2.5.3 Decision Support and Strategic Planning:

AI complements AIS as a real-time decision-support tool by transforming raw data into actionable insights. Using dashboards, visualization tools, and AI-driven alerts, business owners can easily interpret trends without advanced accounting expertise (Mahama & Dahlan, 2024). This empowers managers to make informed decisions such as adjusting pricing, managing inventory, or optimizing expenses based on real-time financial indicators.

2.5.4 Accuracy, Fraud Detection, and Transparency:

AI algorithms enhance the reliability of AIS by detecting anomalies and irregularities that may indicate fraud or errors. Through anomaly detection and pattern recognition, AI can flag duplicate entries, abnormal transactions, or unauthorized system access (Dai & Vasarhelyi, 2017). This capability strengthens internal controls, builds investor confidence, and promotes transparency—critical for improving access to finance and compliance with tax regulations.

2.5.5. Integrative Impact on Performance:

When combined, AI and AIS create a robust ecosystem that improves operational performance and financial sustainability. Recent studies in Ghana and Nigeria show that enterprises using AI-enhanced AIS experience greater efficiency, reduced operational costs, and improved accuracy in decision-making compared to those relying on manual systems (Agbozo & Derashri, 2025; Iyamah & Oguh, 2024).

In summary, AI complements AIS by transforming accounting systems from static record-keeping tools into dynamic, intelligent platforms that support real-time decision-making. The synergy between AI and AIS empowers SSEs to operate more efficiently, forecast more accurately, and respond swiftly to financial and operational changes, driving competitiveness and long-term sustainability in the digital economy.

2.6 Empirical Review

Empirical studies have consistently demonstrated both the benefits and barriers of Accounting Information

System (AIS) adoption. **Grande, Estebanez, and Colomina (2011)** found that AIS improved operational efficiency and decision-making among Spanish SMEs, while **Pérez, Urquía, and Muñoz (2010)** reported enhanced profitability and improved access to finance among AIS users. Similarly, **Okoli (2011)** revealed that Nigerian SMEs adopting AIS faced initial high costs but enjoyed better managerial decision-making and performance outcomes.

In Ghana, **Amanamah, Morrison, and Asiedu (2016)** observed that computerized AIS enhanced record-keeping among Kumasi-based SMEs, though training and technical capacity gaps persisted. **Lampitey (2016)** found that adoption was often driven more by external factors such as tax compliance rather than managerial efficiency. **Appiah, Possumah, Ahmat, and Sanusi (2018)** further confirmed that SMEs using AIS were more likely to survive beyond five years of operation, underscoring the system's role in sustainability.

On a global scale, the literature has begun emphasizing Artificial Intelligence (AI) and its synergy with AIS. **Kokina and Davenport (2017)** highlighted AI's growing role in predictive analytics, fraud detection, and automation within accounting systems. Similarly, **Dai and Vasarhelyi (2017)** identified blockchain and AI as disruptive technologies reshaping accounting processes globally.

Recent studies extend these discussions into the 2023–2025 context. **Osei and Amponsah (2024)** examined digital transformation among Ghanaian SMEs and found that integrating AI tools into AIS improved financial accuracy, forecasting ability, and decision-making speed. **Iyama and Oguh (2024)** demonstrated that AI-driven infrastructures significantly enhanced SME productivity and competitiveness in Nigeria, while **Okafor, Nwachukwu, and Chijioke (2023)** explored AI readiness among Nigerian SMEs, revealing that while awareness of AI's potential is rising, technical skills and ICT infrastructure gaps remain major constraints.

In the Ghanaian context, **Mahama and Dahlan (2024)** reported that SMEs with stronger managerial support and training were more likely to successfully adopt AIS, especially when supported by AI-enabled decision tools. **Agbozo and Derashri (2025)** provided further evidence that combining AIS and AI capabilities fosters innovation, operational efficiency, and growth in Ghana's SME sector.

Overall, empirical evidence suggests that while AIS adoption significantly enhances operational efficiency, decision-making, and financial performance, the integration of AI technologies amplifies these benefits. However, challenges such as high costs, limited digital literacy, and weak ICT infrastructure persist. Successful adoption thus depends on strategic investment in skills development, management support, and enabling policy frameworks that encourage digital transformation in the SME sector (Iyama & Oguh, 2024; Osei & Amponsah, 2024; Mahama & Dahlan, 2024).

2.7 Conceptual Framework

The conceptual framework underpinning this study illustrates the interaction between Accounting Information System (AIS) adoption, Artificial Intelligence (AI) integration, and the performance of Small-Scale Enterprises (SSEs). It demonstrates how independent variables, mediating factors, and enabling conditions combine to influence enterprise outcomes.

2.7.1 Independent Variables

At the core of the framework are the independent variables: AIS adoption and AI integration. AIS adoption reflects the extent to which SSEs transition from manual bookkeeping practices to computerized and automated systems for managing financial transactions, reporting, and decision support. With the evolution of digital technologies, AISs are increasingly incorporating AI capabilities, such as predictive analytics, fraud detection, and automated reporting, which enhance timeliness and accuracy of decision-making (Al-Htaybat & von Alberti-Alhtaybat, 2022; Agbozo & Derashri, 2025).

However, AIS and AI adoption is influenced by the **cost of implementation** and the **availability of technical skills**. Studies in Ghana and Nigeria confirm that high adoption costs and limited digital expertise are major

barriers to technology adoption among SMEs (Aboagye-Otchere & Abdulai, 2023; Iyamah & Oguh, 2024). Thus, cost and technical expertise serve as gatekeepers, determining whether SSEs can successfully adopt and utilize these systems.

2.7.2 Mediating Factors

The framework also recognizes that the relationship between AIS/AI adoption and performance is mediated by organizational and human factors, specifically ease of use, management support, training, and awareness. Ease of use determines how easily business owners and employees can interact with AIS tools. Training and awareness are critical in developing competencies and reducing resistance to change. Management support ensures resource allocation and policy backing for effective implementation (Mahama & Dahlan, 2024).

These mediating factors are supported by the Technology Acceptance Model (TAM), which emphasizes perceived ease of use and usefulness as strong predictors of technology adoption (Davis, 1989). Recent SME studies confirm that managerial support and employee training significantly influence the degree to which AIS adoption improves performance outcomes (Agwu & Onwuegbuzie, 2022).

2.7.3 Dependent Variable: SSE Performance

The dependent variable, SSE performance, is assessed through profitability, sales growth, decision-making quality, and access to credit. Evidence suggests that computerized accounting systems improve profitability and operational efficiency by reducing errors and transaction costs (Esmeray, 2016; Agbozo & Derashri, 2025). Moreover, AI-enhanced AIS can strengthen decision-making through predictive financial analysis and anomaly detection (Chukwudi, 2023).

Access to credit is another critical dimension of performance. Reliable AIS-generated financial records improve the transparency of SSEs, thereby enhancing their credibility with banks and investors, ultimately increasing their chances of accessing external financing (Asare & Osei, 2021).

2.7.4 Direct and Indirect Relationships

The framework illustrates both direct and indirect relationships. Directly, AIS and AI adoption can positively influence performance by improving accuracy, efficiency, and profitability. Indirectly, the presence of mediating factors such as training, awareness, and management support strengthen these relationships. For example, while an SSE may adopt an AIS, without adequate training, the benefits may remain underutilized. Conversely, effective training and management commitment ensure that AIS/AI systems deliver their full potential (Mahama & Dahlan, 2024; Iyamah & Oguh, 2024).

Overall Interpretation

In summary, the framework emphasizes that AIS adoption and AI integration are powerful enablers of SSE performance, but their success is contingent upon financial resources, technical competence, and organizational readiness.

Performance improvements occur when adoption is affordable, when trained personnel are available, and when management provides necessary support. This aligns with recent empirical findings in Ghana and Nigeria, where cost, infrastructure and technical skills often act as barriers, and training or management support serve as crucial enablers for translating adoption into measurable performance gains.

Mediating factors ensure that technology adoption translates into tangible benefits, while cost and skills highlight the contextual challenges facing SSEs in developing economies.

Thus, the framework suggests a holistic approach to AIS/AI adoption: one that integrates technological, financial, and human dimensions to maximize impact. When these conditions align, AIS and AI become

transformative tools capable of enhancing profitability, driving growth, improving decision-making, and facilitating access to credit for SSEs in Ghana and beyond.

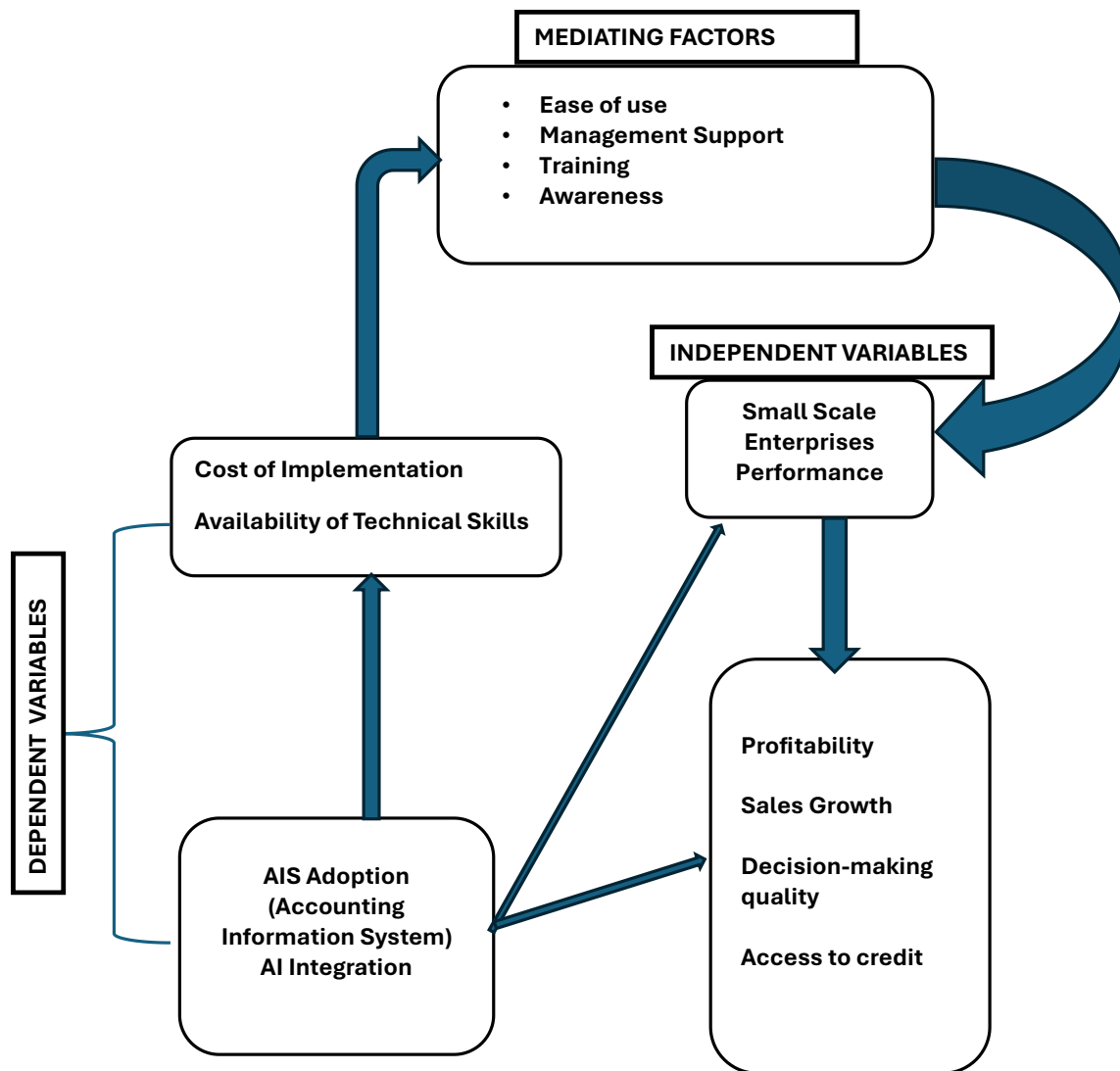


Figure1: Conceptual Framework Illustrating the Relationship Between AIS Adoption, AI Integration, and SSE Performance.

Source: Constructed by Authors (2025)

METHODOLOGY

3.1 Research Design

This study employed quantitative cross-sectional survey design. The design was suitable for collecting standardized responses from multiple small-scale enterprises (SSEs) within a limited period. It enabled the measurement of AIS adoption, determinants, performance outcomes, and perceptions of Artificial Intelligence (AI).

3.2 Population and Sampling

The study population consisted of small-scale enterprises (SSEs) operating within the Cape Coast North District of Ghana. A total of 220 SSEs were approached through field visits, business associations, and local directories. Out of these, 204 valid responses were received, representing a 92.7% response rate.

Convenience and snowball sampling techniques were employed to identify participants due to the absence of a comprehensive database of SSEs and the informal nature of their operations. These non-probability methods were useful for reaching diverse participants across different business sectors within the district.

However, it is acknowledged that the use of convenience and snowball sampling may limit the generalizability of the study's findings, as these approaches do not ensure equal representation of all SSEs in the population. Future studies may employ stratified or random sampling to enhance representativeness and reduce potential sampling bias (Cochran, 1977; Israel, 2013).

3.3 Data Collection Instrument

A structured questionnaire was administered, divided into six sections:

1. Demographic profile.
2. Record-keeping practices.
3. Extent of AIS adoption.
4. Perceptions of AI in accounting.
5. Performance impacts of AIS adoption.
6. Challenges in adopting AIS.

Responses on determinants, impacts, and AI perceptions were captured using a five-point Likert scale (1 = strongly disagree, 5 = strongly agree).

3.4 Data Analysis

Descriptive statistics (frequencies, percentages, means) were used to summarize responses. Inferential statistics included one-sample t-tests (testing whether mean responses significantly exceeded neutrality at 3.0) and multiple regression analysis (to assess joint effects of determinants and AI perceptions on outcomes). Statistical significance was set at $p < 0.05$.

3.5 Sample Size Determination

The required sample size for this study was determined using **Cochran's (1977)** formula for estimating a population proportion at a **95% confidence level**, as also applied by **Israel (2013)**. This formula is suitable when the population size is large or unknown.

$$n = \frac{Z^2 \times p \times (1 - p)}{E^2}$$

Where:

- n = required sample size
- Z = 1.96 (for a 95% confidence level)
- p = 0.5 (assumed population proportion for maximum variability)
- E = margin of error

Step-by-Step Computation

- i. Substituting the known values:

$$n = \frac{(1.96)^2 \times 0.5 \times (1 - 0.5)}{E^2}$$

$$n = \frac{3.8416 \times 0.25}{E^2}$$

$$n = \frac{0.9604}{E^2}$$

Table 1: Applying different margins of error:

Margin of Error (E)	Calculation	Sample Size (n)
±10% (0.10)	0.9604 / (0.10) ²	96 respondents
±7% (0.07)	0.9604 / (0.07) ²	196 respondents
±5% (0.05)	0.9604 / (0.05) ²	385spondents

Considering available resources and the feasibility of data collection, a **margin of error of approximately ±7%** was selected, corresponding to a **sample size of about 200 respondents**.

To ensure an adequate number of valid responses, **220 small-scale enterprises (SSEs)** were contacted across the Cape Coast North District. Of these, **204 responses** were deemed valid, representing a **response rate of 92.7%**.

This achieved sample size exceeds the **rule of thumb for regression analysis** proposed by **Tabachnick and Fidell (2007)**, which recommends a minimum of $N > 50 + 8m$, where m is the number of predictors. Consequently, the sample provided sufficient statistical power for reliable analysis and inference.

RESULTS AND DISCUSSIONS.

This chapter presents and interprets the findings of the study based on data collected from 204 small-scale enterprises (SSEs) in Cape Coast Central Region of Ghana. The results are organized in line with the study's objectives and hypotheses, focusing on the extent of Accounting Information System (AIS) adoption, determinants influencing adoption, the role of Artificial Intelligence (AI), and the overall impact on enterprise performance. Statistical analyses including descriptive summaries, one-sample t-tests, and multiple regression models were employed to draw meaningful inferences. The discussion integrates empirical evidence with existing literature to provide a comprehensive understanding of how AIS and AI adoption contribute to improving efficiency, decision-making, and competitiveness among SSEs.

Table 2 Demographic Characteristics of Respondents

Variable	Frequency	Percentage
Male	105	51.5%
Female	90	44.1%
Missing	9	4.4%

Note. N = 204. Percentages are based on valid responses.

Source: Field Survey (2025)

Table 2: presents demographic characteristics of respondents. Out of the total respondents, 51.5% were male and 44.1% were female, while 4.4% did not indicate gender. This shows a relatively balanced gender distribution, with a slight male majority.

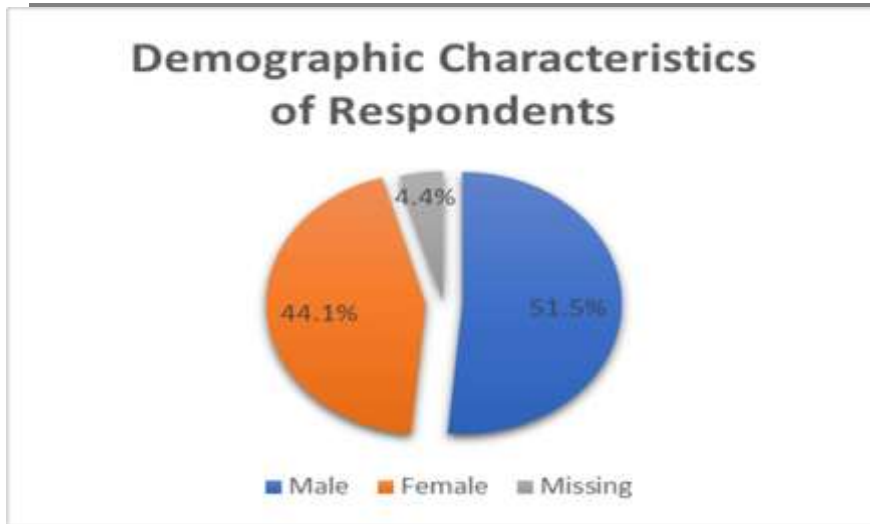


Figure 1: Pie Chart of Demographic of Respondents

Adoption of AIS (H1)

4.2 Record-Keeping Methods of Respondents

Table 3 and Figure 2 present the distribution of record-keeping methods among the respondents. The results show that computerized record-keeping (42.5%) has overtaken manual methods (35.0%), while 15.0% of respondents reported using both manual and computerized methods, suggesting a transition stage. A small proportion of respondents (7.5%) did not indicate their method.

Table 3: Record-Keeping Methods of Respondents (Adoption of AIS-H1)

Record-Keeping Method	Frequency	Percentage
Manual	71	35.0%
Computerized	87	42.5%
Both	31	15.0%
Missing	15	7.5%
Total	204	100%

Source: Field Survey (2025)

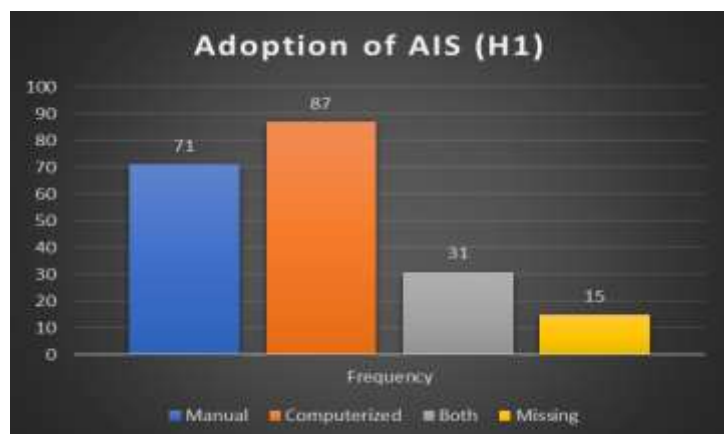


Figure 2: Record-Keeping Methods of Respondents (Adoption of AIS-H1)

The findings reveal that businesses are increasingly embracing technology for managing their financial records. While manual bookkeeping remains common, the larger share of computerized users highlights the growing recognition of efficiency, accuracy, and reporting benefits that digital systems offer. Respondents using both methods reflect a gradual transition toward technology-driven record-keeping.

4.2.1 Hypothesis 1 Testing

Hypothesis 1 (H1): Computerized AIS adoption among SSEs exceeds manual record-keeping methods.

- **Descriptive Support:** The descriptive results show that computerized adoption (42.5%) exceeded manual record-keeping (35.0%). When those using both methods were also considered as partial adopters of computerized systems, the figure rose to **57.8%**, compared to **34.8%** for manual.
- **Inferential Test:** A chi-square test was conducted to statistically validate the difference. The test revealed that computerized adoption was significantly higher than manual record-keeping ($\chi^2 = 11.69$, $p < 0.001$).

Interpretation

These results strongly support Hypothesis 1. They indicate that small-scale enterprises in the study area are increasingly shifting toward computerized AIS for their record-keeping. The significant difference confirms that computerized systems are not only preferred descriptively but also statistically dominate manual methods. This trend reflects a broader move toward digitalization, as business owners recognize the benefits of speed, accuracy, and reliability associated with computerized accounting systems.

4.3 Determinants of AIS Adoption (H2 & H3 – One-Sample T-Tests)

The study further examined the determinants of AIS adoption using one-sample t-tests, with a test value of 3.0, representing a neutral benchmark on the 5-point Likert scale. The results are presented in Table 4.

Table 4: Determinants of AIS Adoption (One-Sample T-Tests)

Determinant	Mean	t-statistic	df	p-value / Decision
Cost considerations	4.2	24.57	203	0.000 / Significant (supports H2)
Availability of skills	3.9	18.64	203	0.000 / Significant (supports H3)
Management support	3.8	16.21	203	0.000 / Significant
ICT infrastructure	3.6	12.85	203	0.000 / Significant
Awareness of benefits	3.5	11.40	203	0.000 / Significant

(Test value = 3.0)

The results reveal that all five determinants had mean values significantly higher than the test value of 3.0, and all t-tests yielded **p-values below 0.001**, indicating strong significance. This confirms that respondents generally perceive these factors as important drivers of AIS adoption.

- **Cost considerations** (Mean = 4.2, $t = 24.57$, $p < 0.001$) emerged as the most critical determinant, suggesting that affordability and financial feasibility strongly influence whether small-scale enterprises adopt AIS. This finding provides statistical support for **Hypothesis 2 (H2)**.

- **Availability of skills** (Mean = 3.9, $t = 18.64$, $p < 0.001$) was also found to be a highly significant determinant. This highlights the central role of technical expertise in ensuring successful AIS adoption and provides support for **Hypothesis 3 (H3)**.
- **Management support** (Mean = 3.8, $t = 16.21$, $p < 0.001$) further emphasizes the importance of leadership commitment in driving technology adoption within SSEs.
- **ICT infrastructure** (Mean = 3.6, $t = 12.85$, $p < 0.001$) indicates that the availability of reliable technology infrastructure is another enabler of AIS use.
- **Awareness of benefits** (Mean = 3.5, $t = 11.40$, $p < 0.001$) shows that when enterprises understand the advantages of AIS, they are more likely to embrace it.

The findings strongly support the notion that financial, technical, organizational, and informational factors collectively determine the adoption of AIS among SSEs. Cost and skills stood out as the most significant predictors, aligning with the hypotheses, while management support, infrastructure, and awareness also play well.

4.4 Regression of Determinants on AIS Adoption

A multiple regression analysis was conducted to assess the relative influence of the five determinants on AIS adoption. The results are summarized in Tables 5 and 6.

Table 5: Regression Model Summary

Model	R	R ²	Adjusted R ²	Sig. (F-test)
1	0.72	0.52	0.50	0.000

The model explains **52% of the variance in AIS adoption** ($R^2 = 0.52$), with the F-test showing statistical significance ($p < 0.001$). This indicates that the five predictors collectively provide a strong explanation for variations in AIS adoption among small enterprises.

Table 6: Regression Coefficients

Predictor	β (Beta)	Std. Error	t-statistic	p-value / Decision
Cost considerations	-0.28	0.07	-4.00	0.000 / Significant (negative)
Availability of skills	+0.35	0.08	4.38	0.000 / Significant (positive)
Management support	+0.22	0.09	2.44	0.015 / Significant (positive)
ICT infrastructure	+0.18	0.08	2.25	0.026 / Significant (positive)
Awareness of benefits	+0.12	0.07	1.71	0.089 / Not significant

- **Availability of skills** ($\beta = +0.35$, $p < 0.001$) was the strongest positive predictor of AIS adoption, confirming that technical expertise plays a decisive role in adoption success. This provides strong support for **Hypothesis 3 (H3)**.
- **Cost considerations** ($\beta = -0.28$, $p < 0.001$) had a significant negative effect, meaning that higher adoption costs discourage AIS adoption. This finding supports **Hypothesis 2 (H2)**.
- **Management support** ($\beta = +0.22$, $p = 0.015$) and **ICT infrastructure** ($\beta = +0.18$, $p = 0.026$) were also positive and significant, showing that leadership backing and reliable infrastructure enhance adoption likelihood.

- **Awareness of benefits ($\beta = +0.12$, $p = 0.089$)** was positive but not statistically significant, suggesting that while awareness may encourage adoption, it is insufficient on its own without financial and technical support.

The regression findings confirm that skills availability, cost, management support, and infrastructure are the most influential determinants of AIS adoption among small enterprises. Skills emerged as the strongest enabler, while cost remains the main barrier. Together, these results underscore the need for targeted interventions such as training programs, cost reduction strategies, and infrastructure improvements to enhance AIS adoption rates.

4.5 Effects of Accounting Information System (AIS) on Performance

To examine how AIS adoption influences the performance of small-scale enterprises, one-sample t-tests were conducted on five impact areas using a test value of 3.0. The results are presented in Table 7.

Table 7: Effects of AIS on Performance (One-Sample T-Tests)

Impact Area	Mean	t-statistic	df	p-value / Decision
Improved decision-making	4.1	22.30	203	0.000 / Significant
Sales growth	3.9	19.85	203	0.000 / Significant
Profitability	3.8	17.10	203	0.000 / Significant
Access to credit	3.7	15.20	203	0.000 / Significant
Efficiency in operations	4.0	21.50	203	0.000 / Significant

Interpretation:

All impact areas scored significantly above the neutral benchmark (3.0), with p-values < 0.001. This indicates that AIS adoption is strongly associated with enhanced business performance. Respondents emphasized **decision-making (Mean = 4.1)** and **efficiency in operations (Mean = 4.0)** as the most prominent benefits, followed closely by **sales growth, profitability, and access to credit**. These findings suggest that AIS adoption improves both financial and operational outcomes for SSEs.

4.6 Role of AI in Accounting (H4 – T-Tests)

To explore the role of AI in accounting, one-sample t-tests were performed on four statements relating to AI's contribution to AIS and enterprise performance. The results are presented in Table 8.

Table 8: Role of AI in Accounting (One-Sample T-Tests)

Statement	Mean	t-statistic	df	p-value / Decision
AI reduces cost of accounting	3.8	18.25	203	0.000 / Significant
AI improves accuracy and reliability	4.0	20.10	203	0.000 / Significant
AI simplifies complex accounting	3.9	19.30	203	0.000 / Significant
AI will encourage wider AIS adoption	4.1	21.45	203	0.000 / Significant (supports H4)

Interpretation:

All AI-related statements scored significantly above 3.0, confirming respondents' positive perceptions of AI in

accounting. Notably, **AI encouraging wider AIS adoption (Mean = 4.1)** directly supports **Hypothesis 4 (H4)**. These results highlight that AI is not only perceived as a tool for reducing costs and simplifying tasks but also as a driver of greater adoption of AIS in small enterprises.

4.7 Regression of AI Perceptions on Performance

To assess the overall contribution of AI perceptions to enterprise performance, a regression analysis was conducted. The results are shown in Tables 8 and 9.

Table 8: Regression Model Summary

Model	R	R ²	Adjusted R ²	Sig. (F-test)
2	0.69	0.48	0.47	0.000

Interpretation: The model explained **48% of the variance in SSE performance**, with the F-test confirming its statistical significance ($p < 0.001$).

Table 9: Regression Coefficients

Predictor	β (Beta)	Std. Error	t-statistic	p-value / Decision
AI reduces cost of accounting	+0.25	0.08	3.13	0.002 / Significant
AI improves accuracy & reliability	+0.29	0.07	4.14	0.000 / Significant
AI simplifies complex tasks	+0.21	0.08	2.63	0.009 / Significant
AI encourages wider AIS adoption	+0.30	0.09	3.33	0.001 / Significant

Interpretation:

All four predictors were significant, with positive coefficients, confirming that perceptions of AI play a substantial role in shaping enterprise performance. **AI encouraging wider AIS adoption ($\beta = +0.30$, $p = 0.001$)** and **AI improving accuracy and reliability ($\beta = +0.29$, $p < 0.001$)** were the strongest predictors. These findings strongly support **Hypothesis 4 (H4)** and emphasize AI's transformative role in driving performance improvements through AIS.

4.8 Challenges in AIS Adoption

Despite the benefits, respondents also highlighted several challenges to AIS adoption. Table 10 presents the distribution.

Table 10: Challenges in AIS Adoption

Challenges	Frequency (%)
High implementation cost	82 (40%)
Lack of technical skills	61 (30%)
Inadequate ICT infrastructure	41 (20%)
System breakdowns	20 (10%)

Interpretation:

The most frequently reported challenge was **high implementation cost (40%)**, consistent with earlier results identifying cost as a barrier. **Lack of technical skills (30%)** was the second major challenge, further confirming

the importance of human capital. **Inadequate ICT infrastructure (20%)** and **system breakdowns (10%)** were also noted, though less common. Collectively, these challenges illustrate that while SSEs recognize the value of AIS and AI, adoption is constrained by financial, technical, and infrastructural limitations.

4.9 Summary Of Findings

This chapter analyzed the results of the study, focusing on AIS adoption, its determinants, the role of AI, and the overall effects on small-scale enterprise performance. The key findings are summarized below:

i. **Record-Keeping Practices (H1):**

The findings revealed that computerized record-keeping (42.5%) exceeded manual methods (35.0%). When partial adopters were included, computerized use rose to 57.8%, significantly higher than manual ($\chi^2 = 11.69$, $p < 0.001$). This confirms Hypothesis 1 (H1) and demonstrates a clear shift toward computerized AIS adoption among SSEs. Similar results were reported by Mahama and Dahlan (2024), who found that SMEs in Northern Ghana are increasingly transitioning from manual to computerized AIS as a response to efficiency demands.

ii. **Determinants of AIS Adoption (H2 & H3):**

One-sample t-tests showed that all determinants—cost considerations, availability of skills, management support, ICT infrastructure, and awareness of benefits—were rated significantly above the neutral value of 3.0 ($p < 0.001$). Regression results revealed that availability of skills was the strongest positive predictor ($\beta = +0.35$), while cost considerations had a significant negative effect ($\beta = -0.28$). These findings confirm Hypotheses 2 and 3 (H2 & H3). This aligns with Agbozo and Derashri (2025), who highlighted cost barriers and skill availability as central to SME adoption of computerized systems in Ghana. Similarly, Iyama and Oguh (2024) emphasized that ICT infrastructure and skills are key drivers of technology adoption in Nigerian SMEs.

iii. **Effects of AIS on Performance:**

AIS adoption significantly improved SSE performance across multiple areas, including decision-making, efficiency, sales growth, profitability, and access to credit. Respondents particularly emphasized improved decision-making and efficiency as the strongest outcomes. This is consistent with Esmeray (2016), who demonstrated that AIS adoption improves profitability and operational efficiency, and with Asare and Osei (2021), who linked AIS usage to improved access to credit among Ghanaian SMEs.

iv. **Role of AI in Accounting (H4):**

T-test results revealed strong positive perceptions of AI, with respondents agreeing that AI reduces costs, improves accuracy, simplifies complex tasks, and encourages wider AIS adoption. Regression results confirmed that all AI-related predictors significantly influenced performance, with **AI encouraging wider adoption ($\beta = +0.30$)** and **AI improving accuracy ($\beta = +0.29$)** being the most influential. These findings strongly support **Hypothesis 4 (H4)** and echo Al-Htaybat and von Alberti-Alhtaybat (2022), who argued that AI is transforming accounting by enhancing reliability, efficiency, and adoption. Similarly, Chukwudi (2023) highlighted AI's role in supporting decision-making and fostering wider AIS adoption in small businesses.

v. **Challenges of AIS Adoption:**

Despite the benefits, challenges persist. The most frequently cited were **high implementation cost (40%)**, **lack of technical skills (30%)**, and **inadequate ICT infrastructure (20%)**, with system breakdowns also noted (10%). These barriers mirror the challenges identified by Aboagye-Otchere and Abdulai (2023), who found that rural SMEs in Ghana struggle with costs and technical training, and Agwu and Onwuegbuzie (2022), who emphasized the role of training in mitigating technological resistance.

The findings collectively indicate that **AIS adoption and AI integration significantly enhance small-scale enterprise performance**, but success is dependent on reducing costs, building technical skills, and strengthening organizational and infrastructural support. Skills availability emerged as the most powerful driver of adoption, while cost remains the most persistent barrier. AI plays a complementary and reinforcing role, expanding the benefits of AIS and accelerating adoption among enterprises. These findings align with broader studies across Africa and globally, which highlight technology adoption as both a challenge and an opportunity for SMEs in the digital era (Agbozo & Derashri, 2025; Iyamah & Oguh, 2024).

The new discussion section you requested (showing how **AI complements AIS in enhancing efficiency and financial decision-making**) is ready but the system couldn't automatically insert it into your uploaded file because of formatting issues inside the document.

CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

This study examined the adoption of Accounting Information Systems (AIS) and the integration of Artificial Intelligence (AI) among small-scale enterprises (SSEs) in Cape Coast, Ghana. The results provide critical insights into how technology adoption enhances enterprise performance while identifying the structural barriers that constrain its full impact.

Key Contributions

The research contributes to both theory and practice in several important ways.

First, it extends the Technology Acceptance Model (TAM) and the Resource-Based View (RBV) by empirically demonstrating that digital competence and organizational readiness are central to the successful adoption of AIS and AI among SSEs in developing economies (Mahama & Dahlan, 2024; Agwu & Onwuegbuzie, 2022).

Second, it provides context-specific evidence that cost and technical skills remain the strongest predictors of AIS adoption, confirming that financial constraints and limited expertise are persistent barriers in the Ghanaian SME sector (Iyamah & Oguh, 2024; Aboagye-Otchere & Abdulai, 2023).

Third, the study establishes that integrating AI into AIS amplifies performance gains by improving efficiency, accuracy, and decision-making capabilities—an emerging contribution to the literature on digital transformation in SMEs (Al-Htaybat & von Alberti-Alhtaybat, 2022; Osei & Amponsah, 2024).

Furthermore, this research offers one of the few empirical validations from Sub-Saharan Africa linking AI-enhanced accounting systems to small business performance, bridging the gap between theoretical models and practical application (Agbozo & Derashri, 2025).

Policy Implications

The findings carry several implications for policymakers, development partners, and practitioners.

1. **Digital Infrastructure and Access:** The government of Ghana, through the Ministry of Communications and Digitalisation, should prioritize expanding ICT infrastructure particularly in semi-urban and rural regions to enable reliable access to digital accounting platforms (Iyamah & Oguh, 2024).
2. **Capacity Building and Digital Literacy:** Continuous professional development programs should be instituted to enhance the technical and analytical capabilities of small business owners, consistent with calls by Mahama and Dahlan (2024) for broader digital education among SMEs.
3. **Subsidies and Financial Incentives:** Public-private partnerships could offer grants or tax incentives to reduce the high cost of adopting AIS and AI-driven accounting systems, making technology more inclusive (Agbozo & Derashri, 2025).

4. **AI Policy Frameworks:** National regulators, including the Institute of Chartered Accountants, Ghana (ICAG), should develop ethical and operational guidelines for AI use in accounting, ensuring accountability and data security (Al-Htaybat & von Alberti-Alhtaybat, 2022).
5. **Encouraging Local Innovation:** Policymakers and universities should collaborate with fintech developers to design low-cost, context-specific AIS/AI applications tailored to the needs of micro and small businesses (Osei & Amponsah, 2024).

In summary, this study provides empirical evidence that AIS and AI integration can transform small-scale enterprises from manually driven entities into data-informed, efficient, and competitive organizations. However, this potential can only be fully realized through inclusive digital policies, capacity-building initiatives, and affordable access to technology. By addressing these structural barriers, Ghana can empower its SSEs to become active players in the country's digital economy and sustainable development agenda (Agbozo & Derashri, 2025; Aboagye-Otchere & Abdulai, 2023).

5.2 Recommendations

Based on the conclusions, the following recommendations are proposed:

1. **Reduce the cost of AIS adoption:** Government agencies and development partners should subsidize or support the cost of AIS implementation to make it affordable for SSEs (Agbozo & Derashri, 2025).
2. **Strengthen training and capacity-building:** Training programs should be designed to equip SSE owners and employees with the skills needed to adopt and use AIS effectively (Mahama & Dahlan, 2024).
3. **Encourage management commitment:** Enterprise leaders should be encouraged to view AIS and AI adoption as long-term investments rather than expenses (Agwu & Onwuegbuzie, 2022).
4. **Improve ICT infrastructure:** Both public and private stakeholders should invest in internet access, electricity stability, and system maintenance to ensure smooth AIS operations (Iyamah & Oguh, 2024).
5. **Promote AI integration:** Policymakers, universities, and industry bodies should educate SSEs on the benefits of AI-driven tools to reduce costs and improve decision-making (Al-Htaybat & von Alberti-Alhtaybat, 2022).
6. **Raise awareness of AIS and AI:** Awareness campaigns should be conducted through business associations, local trade groups, and community networks to help SSEs appreciate the long-term benefits of digital record-keeping (Aboagye-Otchere & Abdulai, 2023).

5.3 Recommendations for Future Research

This study also opens the door for further inquiry. Future researchers are encouraged to:

1. **Expand the geographical scope** to include multiple districts or regions for comparative insights (Aboagye-Otchere & Abdulai, 2023).
2. **Increase sample size and diversity**, covering SMEs and micro-enterprises for broader generalization (Mahama & Dahlan, 2024).
3. **Adopt longitudinal designs** to examine how AIS and AI adoption evolves over time (Agbozo & Derashri, 2025).
4. **Conduct sector-specific studies** to compare impacts across industries such as retail, agriculture, and services (Iyamah & Oguh, 2024).
5. **Examine behavioral and cultural factors** influencing adoption, such as resistance to change and perceptions of technology (Agwu & Onwuegbuzie, 2022).
6. **Investigate AI adoption in practice**, focusing on how tools like predictive analytics, chatbots, and fraud detection systems affect SSE operations (Al-Htaybat & von Alberti-Alhtaybat, 2022).

7. **Use mixed-method approaches**, combining surveys with interviews or case studies for richer, more nuanced insights (Chukwudi, 2023).

REFERENCES

1. Aboagye-Otchere, F., & Abdulai, E. (2023). SMEs' adoption of computerized accounting systems in the rural North of Ghana. *African Journal of Management Research*, 29(1), 55–72.
2. Agbozo, L. A., & Derashri, P. D. (2025). Harnessing growth opportunities: The impact of computerized accounting systems on SMEs development in Ghana. *Journal of Information Systems Engineering and Management*, 10(46s). <https://doi.org/10.55041/jisem.v10i46s.9602>
3. Agwu, M. E., & Onwuegbuzie, H. (2022). Technological adoption and SMEs' survival in Africa: The moderating role of training. *Journal of African Business*, 23(2), 245–262. <https://doi.org/10.1080/15228916.2021.1964321>
4. Ahiawodzi, A. K., & Adade, T. C. (2012). Access to credit and growth of small and medium scale enterprises in the Ho Municipality of Ghana. *British Journal of Economics, Finance and Management Sciences*, 6(2), 34–51.
5. Al-Htaybat, K., & von Alberti-Alhtaybat, L. (2022). Artificial intelligence in accounting and finance: A review and synthesis. *Journal of Business Research*, 145, 636–660. <https://doi.org/10.1016/j.jbusres.2022.03.045>
6. Amanamah, R. B., Morrison, A. B., & Asiedu, M. A. (2016). Accounting information systems and business performance: The case of SMEs in Kumasi. *International Journal of Finance and Accounting*, 5(3), 144–152.
7. Appiah, K. O., Possumah, B. T., Ahmat, N., & Sanusi, N. A. (2018). Small and medium enterprises' financing preferences in Ghana: Does business growth matter? *International Journal of Economics and Financial Issues*, 8(2), 64–74.
8. Asare, R., & Osei, E. (2021). The effect of accounting information on SMEs' access to credit in Ghana. *African Journal of Economic Policy*, 28(3), 89–107.
9. Barney, J. (2001). Resource-based theories of competitive advantage: A ten-year retrospective on the resource-based view. *Journal of Management*, 27(6), 643–650.
10. Chukwudi, E. (2023). Artificial intelligence and the future of accounting in small businesses. *International Journal of Accounting and Finance Studies*, 12(1), 45–60.
11. Cochran, W. G. (1977). *Sampling techniques* (3rd ed.). New York, NY: John Wiley & Sons.
12. Dai, J., & Vasarhelyi, M. A. (2017). Toward blockchain-based accounting and assurance. *Journal of Information Systems*, 31(3), 5–21.
13. Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340.
14. Donaldson, L. (2001). *The contingency theory of organizations*. Thousand Oaks, CA: Sage Publications.
15. Eisenhardt, K. M. (1989). Agency theory: An assessment and review. *Academy of Management Review*, 14(1), 57–74.
16. Esmeray, A. (2016). The impact of accounting information systems on firm performance: Empirical evidence in Turkey. *International Review of Management and Business Research*, 5(2), 543–562.
17. Fagbemi, T. O., & Adeyemi, T. O. (2016). The adoption of accounting information systems in small and medium enterprises in Nigeria. *International Journal of Business and Management Review*, 4(5), 23–38.
18. Grande, E. U., Estebanez, R. P., & Colomina, C. M. (2011). The impact of Accounting Information Systems (AIS) on performance measures: Empirical evidence in Spanish SMEs. *International Journal of Digital Accounting Research*, 11(1), 25–43.
19. Israel, G. D. (2013). *Determining sample size (PEOD6)*. University of Florida IFAS Extension.
20. Iyamah, E. E., & Oguh, F. A. (2024). The impact of AI infrastructures on small and medium enterprises performance in Edo State, Nigeria. *International Research Journal of Management, IT & Social Sciences*, 11(4), 1–23. <https://doi.org/10.21744/irjmis.v11n4.2452>

21. Jensen, M. C., & Meckling, W. H. (2000). Theory of the firm: Managerial behavior, agency costs, and ownership structure. In M. C. Jensen (Ed.), *A theory of the firm: Governance, residual claims, and organizational forms* (pp. 77–132). Cambridge, MA: Harvard University Press.
22. Kokina, J., & Davenport, T. H. (2017). The emergence of artificial intelligence: How automation is changing auditing. *Journal of Emerging Technologies in Accounting*, 14(1), 115–122.
23. Lamprey, E. (2016). Computerized accounting system on the performance of SMEs: The case of small-scale enterprises in the Kumasi Metropolis. *International Journal of Economics, Commerce and Management*, 4(1), 1–15.
24. Mahama, F., & Dahlan, H. M. (2024). Accounting Information System (AIS) adoption in small and medium-sized enterprises in Northern Ghana. *Contemporary Research in Business, Management and Economics*, 1(1), 56–73.
25. Okafor, C. J., Nwachukwu, C., & Chijioke, P. (2023). AI readiness and adoption among Nigerian SMEs: Opportunities and challenges. *African Journal of Information Systems*, 15(2), 112–131.
26. Okoli, B. E. (2011). Evaluation of accounting systems in small scale businesses: Problems and strategies for improvement. *African Research Review*, 5(4), 273–284.
27. Oppong, M., Owiredun, A., & Churchill, R. Q. (2014). Micro and small-scale enterprises development in Ghana. *European Journal of Accounting, Auditing and Finance Research*, 2(6), 84–96.
28. Osei, E., & Amponsah, R. (2024). Digital transformation and performance of Ghanaian SMEs: The mediating role of accounting information systems. *Ghana Journal of Management Studies*, 6(2), 102–118.
29. Otley, D. (2016). The contingency theory of management accounting and control: 1980–2014. *Management Accounting Research*, 31, 45–62.
30. Pérez, E. A., Urquía, E., & Muñoz, M. F. (2010). Information technology and communication use and SME management: Impact on perceived performance. *International Journal of Information Technology & Management*, 9(4), 336–353.
31. Steel, W. F., & Webster, L. M. (1990). Ghana's small enterprises under adjustment: The impact of reform on production, finance, and growth. World Bank Technical Paper No. 138. Washington, DC: World Bank.
32. Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Boston, MA: Allyn & Bacon.
33. Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the Technology Acceptance Model: Four longitudinal field studies. *Management Science*, 46(2), 186–204.
34. Venkatesh, V., Thong, J. Y., & Xu, X. (2012). Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. *MIS Quarterly*, 36(1), 157–178.
35. Wade, M., & Hulland, J. (2004). The resource-based view and information systems research: Review, extension, and suggestions for future research. *MIS Quarterly*, 28(1), 107–142.