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IMPACT OF DIGITAL TRANSFORMATION ON ACCOUNTING INFORMATION SYSTEMS IN MANUFACTURING COMPANIES IN IMO STATE, NIGERIA

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ABSTRACT

This study examines the impact of digital transformation on accounting information systems (AIS) among manufacturing companies in Imo State, Nigeria. The general objective was to determine the extent to which digital accounting technologies affect AIS effectiveness among these companies. Specifically, the study sought to determine the extent to which automated data analytics, cloud computing, and enterprise resource planning (ERP) integration affect AIS effectiveness among these companies. The study population comprised 311 staff members of five selected aluminum manufacturing companies operating in Imo State. Using the Yamane (1967) formula for finite populations, the study determined a sample size of 175 respondents. The study used proportionate sampling to allocate the sample across the five companies based on their respective population sizes, ensuring adequate representation. The study collected primary data using a structured questionnaire and analyzed it with descriptive statistics, including the mean and standard deviation, as well as correlation analysis for hypothesis testing. All hypotheses were tested at the 5% level of significance, and the instrument's reliability was established using Cronbach's alpha coefficient. The findings indicate that automated data analytics, cloud computing, and ERP integration significantly enhance AIS effectiveness among manufacturing companies in Imo State. The study recommends increased investment in automated data analytics to improve the accuracy, efficiency, and timeliness of accounting information and

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financial reporting. It also recommends strengthening ERP integration by linking accounting systems with production, inventory, sales, and procurement functions to minimize errors, enhance information flow, and support effective managerial decision-making.

Keywords: Digital transformation, accounting information system, cloud computing, enterprise resource planning, automated data analytics.

INTRODUCTION

The contemporary business environment is marked by growing complexity, rapid technological change, market openness, and intensifying competition, compelling organizations to improve how they collect, process, and use internal and external data. The growing volume and complexity of data have heightened the need for digital technologies that generate timely insights for managerial decision-making. Digital transformation has emerged as a vital instrument for automating operations, integrating information, and adapting to changing market conditions. It involves embedding digital technologies in business processes, organizational structures, and value-creation activities (Meraghni et al., 2021), reshaping how organizations operate and engage with stakeholders. Digitalization is now a major catalyst for organizational and global economic change, with significant implications for management, finance, and accounting functions (Monge & Soriano, 2024). Digitally transformed firms contributed about US$13.5 trillion to global nominal GDP in 2018, a figure projected to reach US$53.3 trillion by 2023 (Tila, 2020; Mia et al., 2024; Monge & Soriano, 2024). Accordingly, digital transformation is evolving Accounting Information Systems (AIS) from traditional transaction-recording applications into comprehensive, integrated systems that underpin realtime reporting, advanced analytics, control mechanisms, and strategic decision-making (Hassan & Suleiman, 2026). Technologies such as artificial intelligence, cloud computing, enterprise resource planning (ERP), automated data analytics, blockchain, and big data analytics have created new possibilities for automating business processes, integrating information, and improving the speed and quality of organizational decision-making. Their application has changed how organizations generate, process, store, access, and use information, creating opportunities to improve operational efficiency and performance. This transformation particularly affects the accounting function because accounting activities depend heavily on collecting, processing, storing, and communicating large volumes of financial and non-financial information. Drawing on a systematic review of accounting digitalization, Pargmann et al. (2023) demonstrated that digital technologies are fundamentally altering accounting practices while redefining the competency profile required of accounting professionals. The relationship between digital transformation and Accounting Information Systems (AIS) matters because an AIS's effectiveness depends not only on the accounting procedures embedded in the system but also

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on the organization's ability to integrate and exploit emerging digital technologies. Digital transformation can automate repetitive accounting processes, improve access to financial information, enhance data integration across organizational units, and support more timely reporting. For example, integrating ERP systems can connect accounting information with production, procurement, inventory, sales, and human resource functions, reducing information fragmentation. Similarly, automated data analytics and artificial intelligence can expand accounting systems beyond routine transaction processing to forecasting, anomaly detection, and decision support. Contemporary research on AI in financial accounting highlights that despite the traditionally rule-based nature of accounting systems, emerging AI applications are facilitating a shift toward proactive analysis and predictive forecasting (Kureljusic & Karger, 2023; Schiavi, Behr & Marcolin, 2024).

These developments are important for manufacturing companies, which generate large volumes of operational and financial data on materials, production, inventory, labour, sales, purchases, and costs. Consequently, an effective AIS in a manufacturing environment must provide timely, reliable, relevant, and accessible information across organizational functions. Digital transformation can strengthen this integration by connecting accounting systems with operational technologies and business processes (Hassan & Suleiman, 2026). Research on digitalization and management control indicates that digitalization transforms control activities and requires firms to adapt their control systems to digital environments (Fahndrich, 2023). For Nigerian manufacturing companies, digital transformation offers opportunities to improve accounting efficiency and information quality, but the extent to which these benefits are realized may depend on the availability of appropriate technological infrastructure, financial resources, employee skills, and organizational support.

Despite the growing literature on digital transformation, empirical evidence on its implications for Accounting Information Systems (AIS) in manufacturing companies remains limited. Existing studies have examined digitalization in accounting, emphasizing accounting activities, professional competencies, and organizational processes (Pargmann et al., 2023), as well as institutional change (Monge & Soriano, 2024). However, empirical evidence on how digital transformation affects AIS in manufacturing companies in Imo State, Nigeria, remains limited. This sectoral and geographical gap matters because technology adoption and the effectiveness of digital technologies may vary by organizational characteristics, industry needs, infrastructure, and the local business environment. Although digital transformation is increasingly recognized as important to accounting practices, context-specific empirical evidence remains limited on how automated data analytics, cloud computing, and ERP integration relate individually to AIS effectiveness in manufacturing companies in Imo State, Nigeria. Against this background, the study examines the impact of digital transformation on Accounting Information Systems (AIS) in manufacturing companies in Imo State, Nigeria. Specifically, it assesses the effects of

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automated data analytics, cloud computing, and Enterprise Resource Planning (ERP) on AIS effectiveness. The findings are expected to contribute to the literature on digital transformation and AIS while providing practical insights for managers, accountants, IT professionals, and policymakers seeking to enhance digital accounting practices and organizational performance in Nigeria.

STATEMENT OF THE PROBLEM

The rapid diffusion of digital technologies is reshaping accounting practices and how organizations generate, process, and use financial information. Technologies such as automated data analytics, cloud computing, ERP, artificial intelligence, and blockchain have created opportunities to improve accounting information efficiency. However, digital adoption does not automatically translate into effective accounting information systems (AIS). The benefits of digital transformation depend on how well technologies integrate with accounting processes, are supported by skilled personnel, and align with organizational needs. Pargmann et al. (2023) note that digitalization is transforming accounting activities and creating new competency requirements, while Calderon-Monge and Ribeiro-Soriano (2024) identify digitalization as a major force reshaping business functions. In manufacturing companies, where AIS is closely connected to production, inventory, and financial management, effectively integrating these technologies is important for operational efficiency. Traditional and partially digitized accounting processes often involve manual data entry, duplicate information, delayed reporting, limited accessibility, and data inconsistencies. These challenges reduce management's ability to obtain timely and reliable financial and operational information for planning, control, and decision-making.

AIS effectiveness is essential for timely financial reporting, cost management, internal control, and managerial decision-making. Yet fragmented systems, disparities in technological capabilities, inadequate digital skills, infrastructure limitations, cybersecurity risks, and weak system integration may constrain the extent to which digital transformation meaningfully improves AIS. Despite growing academic interest in digitalization, existing research tends to focus broadly on accounting activities and professional competencies (Hassan & Suleiman, 2026). Empirical evidence on the direct effect of digitalization on AIS effectiveness in manufacturing companies, particularly in Imo State, remains limited. This contextual gap makes it unclear whether investments in digital technologies, cloud computing, ERP integration, and data analytics are enhancing AIS effectiveness or are constrained by technological and organizational challenges. Therefore, this study examines the impact of digital transformation on AIS among manufacturing companies in Imo State, with a particular focus on aluminum companies, providing empirical evidence on how digital technologies influence accounting

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information processes and contributing to the literature on accounting digitalization in developing economies.

Objectives of the study

The general objective is to determine the extent to which digital accounting technologies affect the effectiveness of accounting information systems in manufacturing companies in Imo State.

Specifically, the study seeks:

1. To determine the extent to which automated data analytics affects the effectiveness of accounting information systems in manufacturing companies in Imo State.
2. To determine the extent to which cloud computing affects the effectiveness of accounting information systems in manufacturing companies in Imo State.
3. To determine the extent to which Enterprise Resource Planning (ERP) integration affects the effectiveness of accounting information systems in manufacturing companies in Imo State.

Research Questions

1. To what extent does automated data analytics affect the effectiveness of accounting information systems in manufacturing companies in Imo State?
2. To what extent does cloud computing affect the effectiveness of accounting information systems in manufacturing companies in Imo State?
3. To what extent does enterprise resource planning (ERP) integration affect the effectiveness of accounting information systems in manufacturing companies in Imo State?

Hypothesis

$H0_1$: Automated data analytics has no significant effect on the effectiveness of accounting information systems in manufacturing companies in Imo State.

$H0_2$: Cloud computing has no significant effect on the effectiveness of accounting information systems in manufacturing companies in Imo State.

$H0_3$: Enterprise resource planning (ERP) integration has no significant effect on the effectiveness of accounting information systems in manufacturing companies in Imo State.

LITERATURE REVIEW

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Conceptual Framework

Digital Transformation and Accounting Information System

Digital transformation goes beyond adopting computerized accounting systems; it involves strategically integrating digital technologies into organizational processes to improve efficiency, information processing, and decision-making. Calderon-Monge and RibeiroSoriano (2024) note that digital technologies are reshaping business functions, including finance and accounting, while Hess et al. (2016) conceptualize digital transformation as a comprehensive organizational change driven by integrating and exploiting new digital technologies, affecting value creation, organizational structures, processes, and capabilities. Similarly, Pargmann et al. (2023) demonstrate that digitalization in accounting transforms accounting activities through stages of substitution, process change, and innovation, thereby altering how accounting tasks are performed and the competencies required of accounting professionals. Meraghni et al. (2021) describe digital transformation as a fundamental reconfiguration of organizations driven by changes across all areas. Key elements of digital transformation include accounting technologies, automation, cloud computing, blockchain technology, ERP integration, data analytics, and AI. Adopting digital accounting technologies reduces reliance on manual processing and improves transaction recording and reporting. Digital automation increases processing speed and reduces routine errors; cloud computing enables real-time access and collaboration; blockchain provides a distributed digital record of transactions that enhances traceability and transparency; ERP integration connects accounting with functions such as production, procurement, inventory, sales, and human resources; and data analytics and AI support predictive analysis, anomaly detection, automated processing, and improved decision-making. Collectively, these technologies can transform AIS from primarily transaction-processing systems into more integrated, analytical, and decisionsupport-oriented systems.

Accounting information systems are used to collect, record, process, store, and communicate accounting information to internal and external users. In a digitally transformed organization, AIS effectiveness depends not only on whether an accounting system exists but also on the quality and usefulness of the information and services it provides (Hassan & Suleiman, 2026). Many researchers have examined the relationship between digital transformation and accounting information systems from different perspectives and using different research tools. Nguyen et al. (2021) concluded that the digital transformation process allows managers to leverage accounting work, thereby focusing on improving product quality and increasing the organization’s competitiveness. Othman and AL-Dweikat (2021) found a tangible impact of managing digital transformation risk in producing appropriate information that serves the makers and users of accounting data. Bekkouche & Demdoum (2021) established that digital

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accounting shapes accounting information and the quality of financial reports, thereby increasing the effectiveness of strategic decisions.

Digital technologies can improve the efficiency of accounting processes, facilitate the integration of financial and non-financial information, accelerate information processing, and strengthen analytical capabilities. For manufacturing companies, this relationship is important because accounting information is closely tied to production and operational activities. For example, ERP integration can link production and inventory data to accounting records; process automation can speed transaction processing; cloud computing can improve information accessibility; and data analytics can enhance the use of accounting information for planning and decision-making. However, drawing on the Technology Acceptance Model (TAM) developed by Davis (1989), the effectiveness of digital technologies depends partly on users' perceptions of their usefulness and ease of use**,** which influence technology acceptance and adoption. Therefore, technology adoption does not automatically guarantee an effective AIS. Its benefits may also depend on organizational capabilities, employee competencies, infrastructure, and implementation quality.

Digital Transformation Process

Meraghni et al. (2021) explain that digital transformation entails interconnected activities that require strategic planning, capability assessment, investment, organizational integration, and change management. The process begins with establishing a coherent digital strategy and conducting a comprehensive assessment of existing technological capabilities and organizational processes to identify deficiencies and transformation imperatives (Saarikko et al., 2020). The second stage involves determining the financial, technological, and human resources required while addressing barriers such as inadequate infrastructure, skills gaps, resistance to change, and system integration challenges (Baethge-Kinsky, 2020). The final stage involves implementing and integrating digital technologies into everyday operations. For AIS, this includes effectively integrating cloud computing, ERP, data analytics, and automation with accounting and other organizational functions. Successful transformation, therefore, requires not only technology adoption but also organizational change and transformation capabilities (Correani et al., 2020).

Digital Technologies and Their Impact on Accounting Information Systems

Rapid advances in internet and communication technologies have transformed the business environment, compelling organizations to move beyond conventional accounting practices towards digitally enabled accounting information systems (Andreassen, 2020). Digital transformation integrates technologies such as blockchain, automated data analytics, cloud computing, big data analytics, ERP integration, and artificial intelligence into organizational processes to improve operational efficiency. In accounting information systems, it automates

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accounting processes and improves the accuracy, timeliness, reliability, accessibility, and usefulness of accounting information while reducing processing costs and manual effort (Begum, 2019; Sharshouh, 2025; Oncioiu et al., 2019). Blockchain provides a decentralized ledger that can enhance accounting transparency, traceability, and reliability while reducing errors, manipulation, and reconciliation needs (Akter et al., 2020; Faccia & Mosteanu, 2019). Automated data analytics uses digital technologies, software, and algorithms to collect, process, analyze, and interpret accounting and financial data with minimal manual intervention. Cloud computing enables organizations to access, process, and store accounting information through network-based platforms, improving accessibility, scalability, connectivity, and cost efficiency (Al-Zoubi, 2017). Big data analytics supports consolidating and examining large-scale financial and non-financial datasets, underpinning improved forecasting, performance evaluation, and strategic decision-making (Yao & Gao, 2020). ERP integration enables the AIS to interact with functions such as production, inventory, procurement, sales, and finance**.** This minimizes duplicate data entry and enables accountants and managers to access consistent, timely, and comprehensive information to support decisionmaking. In general, these technologies are transforming AIS from traditional transactionprocessing systems into integrated, automated, analytical, and real-time systems, thereby improving the quality of accounting information and organizational decision-making (Prasetianingrum & Sonjaya, 2024). Furthermore, the interaction between information technology capabilities and digital transformation strategies plays an important role in improving firm performance. Zhu (2024) developed a framework linking IT capabilities, digital transformation strategy, and firm performance through the mediating effects of digital business agility and business model innovation**.** These developments highlight the importance of adopting appropriate digital technologies and building organizational capabilities to improve accounting practices and support effective digital transformation.

Challenges Facing Digital Transformation in Accounting Information Systems

Digital transformation of an Accounting Information System (AIS) enhances financial reporting. However, organizations face significant challenges, including high implementation costs, critical cybersecurity threats, workforce skill shortages, and resistance to shifting from traditional operational practices (Chen, 2025). A key challenge during the digital transformation of accounting systems is integrating fintech solutions with existing processes. This often results in fragmented infrastructure and makes seamless integration difficult (Schiavi et al., 2020).

Theoretical Framework

The study draws on the Resource-Based View (RBV) developed by Barney in 1991. The theory holds that organizations can achieve and sustain competitive advantage by effectively

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leveraging resources and capabilities that are valuable, rare, difficult to imitate, and nonsubstitutable. In this context, digital technologies can serve as strategic resources that enhance labour productivity, data accuracy, and the overall quality of financial reporting (Sharshouh,
2025). In this study, digital technologies, accounting expertise, employees' digital competencies, data management capabilities, and organizational knowledge constitute important strategic resources. Effectively integrating and deploying these resources can strengthen accounting information systems by improving the quality, timeliness, accuracy, reliability, and efficiency of accounting information.

The study also draws on the Technology Acceptance Model (TAM)**,** developed by Davis in 1989, which provides a theoretical framework for explaining users' acceptance and adoption of technology. The model posits that technology acceptance is primarily determined by two key constructs: perceived usefulness, which refers to the extent to which an individual believes that using a technology will enhance their performance, and perceived ease of use**,** which refers to the extent to which they perceive the technology as "easy to learn and use." When TAM constructs are present, users are more likely to develop favourable attitudes and behavioural intentions toward technology adoption and use. The theory is relevant to this study because the effectiveness of digital transformation in accounting information systems depends not only on the availability and functionality of digital technologies but also on accountants' and other employees' willingness and ability to adopt and use them effectively. Therefore, TAM provides a useful framework for explaining how employees' acceptance and use of digital technologies can influence the effectiveness of accounting information systems.

Empirical Framework

Pargmann et al. (2023) conducted a systematic literature review examining the implications of digitalization for the accounting profession. The study assessed the evolving nature of accounting activities, distinguished between routine and non-routine tasks, and examined the competencies required amid increasing digitalization. The findings indicated that automating routine accounting tasks has increased the relative importance of non-routine activities and created greater demand for digital, analytical, and technology-related competencies among accounting professionals.

Meraghni, Bekkouche, and Demdoum (2021) examined the impact of digital transformation on accounting information systems (AIS) in Algerian firms. The study adopted a deductive approach grounded in prior empirical and theoretical literature. The study collected data through a structured questionnaire administered to 237 managers and accountants across 120 firms in

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Algeria. The findings revealed significant challenges associated with the digital transformation of AIS, particularly in adapting accounting practices and professional competencies to emerging digital technologies. The study recommended developing and diversifying AIS personnel skills and competencies to address the challenges of digital transformation and adapt to evolving professional roles and technological requirements.

Calderon-Monge and Ribeiro-Soriano (2023) examined digitalization in business and management through a systematic literature review. The study identified key trends, including the use of digital technologies for consumer behaviour analysis, green innovation, and blockchain applications in financial services. It also highlighted the growing relevance of digitalization, digital transformation, and emerging technologies across management, marketing, finance, and accounting.

Hassan and Suleiman (2026) used a theory-informed integrative review to examine the influence of digital transformation in accounting information systems (AIS) on organizational efficiency in Nigeria. The study found that digital transformation of AIS generally enhances transaction processing speed, information quality, internal control, auditability, decisionmaking, and cross-functional coordination, thereby contributing positively to both financial and operational performance.

Gap in the literature

Existing studies on digital transformation and AIS are largely conceptual or review-based, with limited empirical evidence on AIS effectiveness in the manufacturing sector, particularly in Imo State, Nigeria. This study addresses these methodological, sectoral, and contextual gaps through a survey design, structured questionnaires, and descriptive statistics.

METHODOLOGY

Research Design: The study adopted a survey design and used a structured questionnaire to examine the impact of digital transformation on AIS in manufacturing companies in Imo State, Nigeria.

Source of Data: Primary data were collected using a structured questionnaire aligned with the study's objectives, research questions, and hypotheses.

Study Population: The population comprised 311 staff members from five selected aluminum manufacturing companies in Imo State, based on staff records obtained from their respective human resources departments

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Sample Size Determination and Sampling Technique: The sample size was determined using Yamane's (1967) formula, yielding 175 respondents from the five aluminum manufacturing companies. The study used proportionate sampling to allocate the sample according to each company's share of the total population, ensuring fair representation.

Instrument for Data Collection: Data were collected using a structured questionnaire aligned with the study's objectives, research questions, and hypotheses. The questionnaire used a fivepoint Likert-type scale: Very High Extent (VHE), High Extent (HE), Undecided (A), Low Extent (LE), and Very Low Extent (VLE).

Reliability of the Instrument: Cronbach's alpha was used to assess the study's reliability and the internal consistency of the questionnaire items. The average coefficient of 0.71 across the three sections indicated acceptable reliability.

Method of Data Analysis: Data were analyzed using the mean and standard deviation to address the research questions, and Spearman's rank-order correlation was used to test the hypotheses at a 5% significance level. We rejected the null hypothesis when the p-value was below 0.05; otherwise, we did not reject it.

DATA PRESENTATION AND ANALYSIS

Research Question 1
To what extent does automated data analytics affect the effectiveness of Accounting Information Systems in manufacturing companies in Imo State?

Table 1

	Questions		V				Total		Std.
/N.		HE	E		E	LE			D
	The extent to which automated data analytics affect the effectiveness of AIS systems among manufacturing companies in Imo State								
.	Automated data analytics improves the accuracy of accounting information generated by our AIS.	5	2 30	0	0		175	.97	.656
.	Automated data analytics reduces errors and manual intervention processing accounting information.	0	1 60				175	.00	.415

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.	Automated data analytics enables the accounting information system to process and analyze financial data more quickly.	0	3 40				175	.14	.425
.	Automated data analytics enhances the timely generation of accounting and financial reports for management decision-making.	5	3 40				175	.20	.401
.	Automated data analytics improves the overall efficiency and effectiveness of our AIS.	0	1 60				175	.03	.292
	Grand mean							.07	0.438

Table 1 shows the respondents' responses on how automated data analytics affects the effectiveness of accounting information systems in manufacturing companies in Imo State. The grand mean of 4.07 on a 5-point Likert scale indicates that automated data analytics has a strong effect on the effectiveness of AIS among the selected manufacturing companies in Imo State, since it is higher than the expected mean of 3.0. The findings indicate that digital transformation through automated data analytics is associated with improved accuracy, reduced errors, faster processing, timely financial reporting, and overall AIS efficiency. In question item number four, the highest mean of 4.20 was recorded for the timely generation of accounting and financial reports, indicating that respondents particularly recognized automated data analytics' contribution to timely reporting and management decision-making. In contrast, item 1 recorded the lowest mean of 3.97 for improvement in accounting information accuracy. Although this was the lowest-rated item, the score remained high, indicating that automated data analytics improves accounting information accuracy and AIS effectiveness in manufacturing companies in Imo State. The grand mean of 4.07 and the grand standard deviation of 0.438 indicate that automated data analytics has a substantial effect on AIS effectiveness among manufacturing companies in Imo State. The low grand standard deviation of 0.438 suggests that responses were closely clustered around the mean, indicating a relatively high degree of consistency in respondents' opinions.

$H0_1$: There is no significant relationship between automated data analytics and the effectiveness of accounting information systems in manufacturing companies.

Table 2: Correlation between automated data analytics and the effectiveness of accounting information systems among manufacturing companies in Imo State.

Variables	N	R (Correlation Coefficient)	r (P-value	Remark
Automated data analytics	1 75	0. 690	0. 0000	Reject the null hypothesis

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Accounting Information Systems	175	1		

Source: SPSS 27. Where N = Number of Respondents, r = P value, R = Correlation coefficient

Table 2 presents the correlation between automated data analytics and the effectiveness of accounting information systems (AIS) in manufacturing companies in Imo State. The results indicate a correlation coefficient (R) of 0.690, suggesting a strong positive relationship between automated data analytics and AIS effectiveness. This implies that greater adoption and use of automated data analytics are associated with higher levels of AIS effectiveness among manufacturing companies in Imo State. The p-value is 0.0000, which is less than the 0.05 level of significance: $p = 0.0000 < 0.05$. Therefore, the relationship between automated data analytics and AIS effectiveness is statistically significant. Since the p-value (0.0000) is less than 0.05, the study rejects the null hypothesis ($H0_1$) and accepts the alternative hypothesis. This suggests that automated data analytics improves the accuracy, accessibility, processing, and usefulness of accounting information. This result is consistent with Hassan and Suleiman (2026), who highlighted the role of digital transformation in real-time reporting, analytics, control, and decision-making.

Research Question 2

To what extent does cloud computing affect the effectiveness of Accounting Information Systems in manufacturing companies in Imo State?

Table 3

/N.	Questions	HE	VE		E	LE	otal	T	Std. D
	The extent to which cloud computing affects the effectiveness of accounting information systems among manufacturing companies in Imo State								
.	Cloud computing improves the accessibility of accounting information to authorized users.		565				75	1.00	.240
.	Cloud computing enables accounting personnel to access and process AIS.		-70				75	1.94	.334
.	Cloud computing facilitates timely sharing of accounting information across departments.	0	230	0			75	1.94	.584
.	Cloud computing improves the accuracy and efficiency of accounting information processing in our organization.	0	425				75	1.14	.594

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.	Cloud computing improves the availability and timeliness of accounting information for management decision-making.		-65				75	1.91	.369
	Grand mean							.99	0.424

Table 3 presents the respondents' views on how cloud computing affects the effectiveness of accounting information systems in manufacturing companies in Imo State. The grand mean of 3.99 on a 5-point Likert scale, above the 3.0 benchmark, indicates that cloud computing enhances AIS effectiveness to a great extent. Item 4 recorded the highest mean (4.14), indicating that respondents recognize cloud computing's contribution to improving the accuracy and efficiency of accounting information processing, while Item 5 recorded the lowest (3.91) for information availability and timeliness in decision-making. The findings suggest that adopting cloud computing as part of digital transformation enhances the accessibility, accuracy, efficiency, availability, and timely sharing of accounting information within the selected manufacturing companies. The grand standard deviation of 0.438 suggests relatively consistent responses among participants. This low grand standard deviation suggests respondents' ratings clustered closely around the mean, indicating consistency in their opinions. The findings indicate that cloud computing enhances AIS effectiveness among manufacturing companies in Imo State, consistent with Meraghni, Bekkouche, and Demdoum (2021), who found that digital technologies improve accounting information processing and organizational performance.

$H0_2$: There is no significant relationship between cloud computing and the effectiveness of Accounting Information Systems in manufacturing companies in Imo State.

Table 4: Correlation between cloud computing and the effectiveness of Accounting Information Systems in manufacturing companies in Imo State

Variables	N	R (Correlation Coefficient)	r (P-value	Remark
Cloud computing	175	0. 561	0. 001	Reject the null hypothesis
Effectiveness of Accounting Information	175			

Source: SPSS 27. Where N = Number of Respondents, r = P value, R = Correlation coefficient

Table 4 presents the correlation between cloud computing and the effectiveness of accounting information systems (AIS) among manufacturing companies in Imo State. The result indicates

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a correlation coefficient (R) of 0.561, suggesting a positive and moderate relationship between cloud computing and AIS effectiveness. This implies that greater adoption and use of cloud computing are associated with higher levels of AIS effectiveness among manufacturing companies in Imo State. The finding therefore suggests that increased use of cloud computing may enhance the effectiveness of accounting information systems by supporting improved accessibility, information sharing, and timely processing of accounting information. The pvalue is 0.001, which is less than the 0.05 level of significance: $p = 0.001 < 0.05$. Therefore, the relationship between cloud computing and the effectiveness of accounting information systems is statistically significant. Since the p-value (0.001) is less than 0.05, the study rejects the null hypothesis ($H0_2$) and accepts the alternative hypothesis. This therefore reveals that manufacturing companies that adopt cloud computing are more likely to experience enhanced accessibility, accuracy, efficiency, availability, and timely sharing of accounting information within their organization.

Research Question 3

To what extent does Enterprise Resource Planning (ERP) integration affect the effectiveness of Accounting Information Systems in manufacturing companies in Imo State?

Table 5

/N.	Questions	HE	VE		E	LE			Std. D
	The extent to which (ERP) affects the effectiveness of Accounting Information Systems								
.	ERP integration enhances the integration of the accounting information system with other business functions such as production, inventory, sales, and procurement.		5 65				75	.06	. 233
.	ERP integration enables information generated by other departments to flow directly and accurately into the accounting information system.		- 70				75	.97	. 448
.	ERP integration reduces duplication and errors in the recording and processing of accounting information.	0	2 30	0			75	.06	. 411
.	ERP integration improves the timeliness and accessibility of accounting information for management decision-making.	0	4 25				75	.14	. 351
.	ERP integration improves the overall efficiency and effectiveness of accounting operations.		- 65				75	.91	. 651

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	Grand mean							.03	0 .419

Table 5 presents respondents' views on how ERP integration affects the effectiveness of Accounting Information Systems (AIS) in manufacturing companies in Imo State. The grand mean of 4.03 on a 5-point Likert scale indicates that ERP integration affects AIS effectiveness to a great extent, as it is higher than the expected mean of 3.0. The grand standard deviation of 0.419 suggests that respondents' opinions were relatively consistent. Item 4 recorded the highest mean of 4.14**,** indicating that respondents particularly recognized ERP integration for improving the timeliness and accessibility of accounting information for management decision-making. Items 1 and 3 each recorded a mean of 4.06**,** showing that ERP integration enhances the integration of AIS with other business functions such as production, inventory, sales, and procurement. It also reduces duplication and errors in recording and processing accounting information. Item 2 recorded a mean of 3.97**,** indicating that ERP integration facilitates the direct and accurate flow of information from other departments into the AIS. Item 5 had the lowest mean of 3.91**,** yet it still falls within the high-extent category, indicating that ERP integration improves the overall efficiency and effectiveness of accounting operations. The low grand standard deviation of 0.419 indicates that responses were closely clustered around the mean, suggesting a relatively high degree of consistency among respondents' opinions.

$H0_3$: There is no significant relationship between Enterprise Resource Planning (ERP) and the effectiveness of Accounting Information Systems in manufacturing companies in Imo State.

Table 6: Correlation between Enterprise Resource Planning (ERP) and the effectiveness of Accounting Information Systems among manufacturing companies in Imo State.

Variables	N	R (Correlation Coefficient)	r (Pvalue	Remark
Enterprise Resource Planning (ERP)	1 75	0. 731	0. 0000	Reject the null hypothesis
Accounting Information Systems	1 75			

Source: SPSS 27. Where N = Number of Respondents, r = P value, R = Correlation coefficient

Table 6 presents the correlation between ERP integration and AIS effectiveness among manufacturing companies in Imo State. The results show a correlation coefficient (R) of 0.731, indicating a strong positive relationship between ERP integration and AIS effectiveness. This finding implies that higher levels of ERP integration are associated with greater AIS

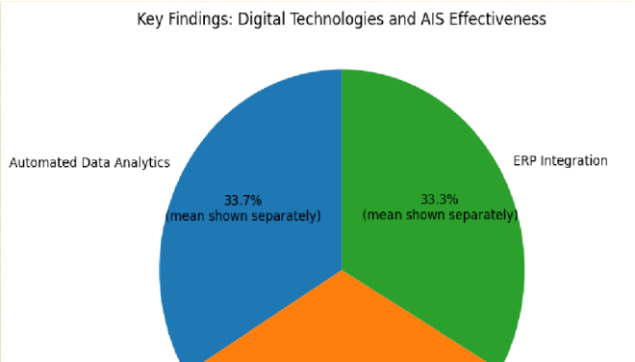
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effectiveness among manufacturing companies in Imo State. Thus, stronger integration of ERP systems with accounting functions will improve information processing, data integration, and overall AIS effectiveness. The p-value of 0.000 is less than the 0.05 level of significance **(**$p < 0.05$**),** indicating a statistically significant relationship. Therefore, the study rejects the null hypothesis ($H0_3$) and accepts the alternative hypothesis. This finding implies that higher ERP integration enhances information flow across departments, improving the timeliness, accessibility, and reliability of accounting information for effective managerial decisionmaking.

Discussion of Findings

The findings reveal that automated data analytics, cloud computing, and ERP integration significantly enhance AIS effectiveness among manufacturing companies in Imo State. Automated data analytics recorded the highest overall mean (4.07) and a strong positive correlation with AIS effectiveness **(**$r = 0.690$, $p < 0.05$**)**. Cloud computing recorded a mean of 3.99 and a significant positive relationship **(**$r = 0.561$, $p < 0.05$). ERP integration recorded a mean of 4.03 and the strongest correlation **(**$r = 0.731$, $p < 0.05$**).** These results indicate that digital technologies improve the accuracy, efficiency, accessibility, integration, and timeliness of accounting information. The findings align with the Resource-Based View (RBV)**,** which posits that technological capabilities are valuable organizational resources that enhance operational effectiveness and contribute to competitive advantage. They also support the Technology Acceptance Model (TAM)**.** The high level of perceived usefulness reflected in respondents' ratings indicates that employees recognize these technologies as useful for enhancing accounting processes and decision-making. The findings further align with Pargmann et al. (2023)**,** who found that digital technologies are transforming accounting activities and professional practices. Similarly, Calderon-Monge and Ribeiro-Soriano (2024) observed that digital technologies are reshaping business functions, including finance and accounting.

CONCLUSION



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The study concludes that digital transformation significantly enhances the effectiveness of accounting information systems in manufacturing companies in Imo State. Specifically, automated data analytics, cloud computing, and ERP integration substantially influence AIS effectiveness by improving the accuracy, efficiency, accessibility, integration, and timeliness of accounting information. The findings therefore indicate that adopting and effectively integrating digital technologies is essential to strengthening AIS and enabling timely, informed management decision-making in manufacturing firms in Imo State.

RECOMMENDATION

1. Manufacturing companies should invest in automated data analytics to improve accounting accuracy, efficiency, and the timeliness of reporting
2. Companies should strengthen cloud computing infrastructure to improve the accessibility, availability, and sharing of accounting information
3. Manufacturing companies should integrate ERP systems across production, inventory, sales, and procurement to reduce errors and improve decision-making.

SUGGESTION FOR FURTHER STUDIES

1. Future studies should examine how other digital technologies, such as artificial intelligence and blockchain, affect the effectiveness of accounting information systems.
2. Similar studies should be conducted across other sectors and Nigerian states to determine whether the findings are consistent across industries and regions.
3. Future researchers could use a larger sample and a longitudinal design to provide more robust evidence of the relationship between digital transformation and AIS effectiveness.

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Appendix

Research Question 1

One-Sample Statistics

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	N	Mean	Std. Deviation	Std. Error Mean
ITEM 1	175	3.83	.448	.034
ITEM 2	175	3.97	.656	.050
ITEM 3	175	4.00	.415	.031
ITEM 4	175	4.14	.425	.032
ITEM 5	175	4.20	.401	.030
ITEM 6	175	4.03	.292	.022

Reliability Statistics

Cronbach's Alpha	N of Items
.715	6

Hypothesis one Correlations

			X1	Y1
Spearman's rho	X1	Correlation Coefficient	1.000	.691**
		Sig. (2-tailed)	.	.000
		N	30	30
	Y1	Correlation Coefficient	.691**	1.000
		Sig. (2-tailed)	.000	.
		N	30	30

Research Question 2

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
ITEM 1	175	4.03	.448	.034

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IT EM 2	175	4.00	.240	.018
IT EM 3	175	3.94	.334	.025
IT EM 4	175	3.94	.584	.044
IT EM 5	175	4.14	.594	.045
IT EM 6	175	3.91	.369	.028

Reliability Statistics

Cronbach's Alpha	N of Items
.714	6

Hypothesis two

Correlations

			X1	Y2
Spearman's rho	X1	Correlation Coefficient	1.000	.561**
		Sig. (2-tailed)	.	.001
		N	30	30
	Y2	Correlation Coefficient	.561**	1.000
		Sig. (2-tailed)	.001	.
		N	30	30

Research question three

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
IT EM 1	175	4.11	.319	.024
IT EM 2	175	4.06	.233	.018

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IT EM 3	175	3.97	.448	.034
IT EM 4	175	4.06	.411	.031
IT EM 5	175	4.14	.351	.027
IT EM 6	175	3.91	.651	.049

Reliability Statistics

Cronbach's Alpha	N of Items
. 697	6

Hypothesis three Correlations

			X1	Y3
Spearman's rho	X1	Correlation Coefficient	1.000	.731**
		Sig. (2-tailed)	.	.000
		N	30	30
	Y3	Correlation Coefficient	.731**	1.000
		Sig. (2-tailed)	.000	.
		N	30	30