INFORMATION TECHNOLOGY, MANAGEMENT SUPPORT AND PERFORMANCE OF MANUFACTURING COMPANIES IN KWARA STATE

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Abstract
The manufacturing sector in Nigeria continues to experience challenges relating to operational efficiency, competitiveness, and sustainable performance despite increasing investment in information technology (IT). While prior studies have established that IT can enhance organizational outcomes, evidence on the specific dimensions of IT that drive performance and the role of management support remains inconclusive, particularly among manufacturing firms. This study examined the effect of information technology and management support on the organizational performance of manufacturing companies in Kwara State, Nigeria. Specifically, the study investigated the influence of IT training and competence, IT governance and compliance, IT infrastructure, and IT usage on organizational performance, as well as the moderating effect of management support. The study was anchored on Agency Theory, Resource-Based View (RBV), and Technology Acceptance Model (TAM). A quantitative survey research design was adopted, and primary data was collected through structured questionnaires administered to 212 employees of registered manufacturing companies in Kwara State. Data was analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM) at a 5 per cent level of significance. The findings revealed that IT training and competence ($\beta = 0.200$, $t = 2.523$, $p = 0.012$), IT governance and compliance ($\beta = 0.148$, $t = 2.205$, $p = 0.027$), and IT usage ($\beta = 0.348$, $t = 3.901$, $p < 0.001$) have significant positive effects on organizational performance, with IT usage emerging as the strongest predictor. However, IT infrastructure was found to have an insignificant effect on organizational performance ($\beta = -0.017$, $t = 0.224$, $p = 0.822$). The results further showed that management support does not significantly moderate the relationship between information technology and organizational performance ($\beta = 0.113$, $t = 1.500$, $p = 0.134$). The study concludes that organizational performance in manufacturing firms is driven more by effective utilization of technology, employee IT competence, and sound IT governance practices than by the mere availability of technological infrastructure. The findings provide stronger support for the Resource-Based View and Technology Acceptance Model, while offering limited support for the moderating assumptions of Agency Theory. The study recommends that manufacturing firms should prioritize continuous IT training, strengthen IT governance frameworks, and promote the effective use of technology across operational processes to enhance organizational performance.

Keywords: Information technology, Kwara State, management support, manufacturing firms, organizational performance.

1.0 Introduction

The manufacturing sector remains a critical driver of economic growth, industrialisation, employment generation, and technological advancement across the world. In recent years, increasing business complexity, rapid technological changes, and competitive market pressures have compelled manufacturing firms to strengthen their information technology systems and management support to sustain organisational performance and competitiveness (Choudhury & Sharfuddin 2026). Information technology has become an essential organisational resource for improving information processing, communication, operational efficiency, and strategic decision-making. Similarly, management support influences technology adoption, resource allocation, employee commitment, innovation, and the effective implementation of organisational strategies. IT infrastructure is defined in terms of the availability and adequacy of the technological resources supporting organisational operations, while IT training and competence focuses on employees' knowledge, skills and ability to use information technology effectively (Chuunga et al., 2025). IT governance and compliance captures the formal policies, accountability structures and control procedures guiding the deployment and use of IT, whereas IT usage measures the extent to which IT is incorporated into routine operational activities and managerial decision-making.

Globally, manufacturing firms that invest in appropriate technologies and demonstrate strong managerial commitment through resource provision, employee empowerment, and leadership involvement are better positioned to improve operational performance and long-term sustainability. Recent studies have highlighted the importance of technological advancement and supportive management practices in enhancing organisational effectiveness and responding to digital transformation challenges in the manufacturing sector (Wiese et al., 2024).

In developed economies such as the United Kingdom, manufacturing companies have increasingly prioritised information technology and management support as strategic mechanisms for improving productivity, innovation, and operational efficiency. The transition towards Industry 4.0, lean manufacturing, and sustainable production systems has intensified the need for digital technologies and effective managerial leadership. Studies in advanced industrial economies indicate that information technology facilitates knowledge sharing, process automation, and data-driven decision-making, while management support provides the resources and direction required for successful technology implementation. Furthermore, management commitment to technological innovation and continuous improvement contributes to improved operational performance and organisational resilience in technologically driven manufacturing environments (Shen et al., 2024).

Similarly, emerging economies such as China have experienced substantial industrial growth driven by technological innovation, strategic management practices, and organisational transformation within the manufacturing sector. Chinese manufacturing firms have increasingly adopted information technology and supportive managerial systems to promote innovation, quality management, teamwork, and operational efficiency in response to intense global competition. Information technology has become particularly important in improving production processes, facilitating information exchange, and strengthening decision-making capabilities. Recent empirical evidence suggests that management support enhances technology adoption, organisational learning, and innovation capabilities within manufacturing enterprises operating in highly competitive industrial environments (Shuaib et al., 2021).

In developing economies such as Ghana and South Africa, the manufacturing sector continues to face challenges relating to inadequate infrastructure, technological limitations, workforce management, and operational inefficiencies. Despite these constraints, information technology and management support have emerged as important factors influencing manufacturing performance and organisational survival. Manufacturing firms in these countries increasingly recognise the importance of digital systems, supportive leadership, employee involvement, and adequate resource allocation in enhancing productivity and maintaining competitive advantage. Studies across African manufacturing firms suggest that organisations with effective technological systems and strong managerial support tend to achieve better operational efficiency, innovation outcomes, and employee performance than firms with inadequate technological infrastructure and weak management commitment. Consequently, effective technology utilisation and management support are increasingly important for improving industrial competitiveness within developing economies (Alex, 2023).

In Nigeria, the manufacturing sector plays a significant role in economic diversification, employment creation, and industrial development. However, the sector continues to experience numerous operational challenges, including inadequate infrastructure, inconsistent government policies, rising production costs, limited technological adoption, and low operational efficiency. Within this challenging environment, information technology and management support have become increasingly important in determining the performance and sustainability of manufacturing firms. Information technology enables firms to improve production processes, information management, communication, and operational control, while management support facilitates technology adoption through resource provision, employee training, and strategic direction. Empirical studies in Nigeria have established that supportive management practices and effective organisational support influence employee productivity, innovation, and organisational performance. For instance, research has shown that perceived organisational support through managerial communication, information sharing, emotional support, and resource provision positively affects organisational performance among Nigerian manufacturing firms (Aguke & Igbomor, 2024).

Furthermore, information technology adoption and management support are important for improving operational effectiveness and managerial practices within Nigerian manufacturing organisations. Effective information systems facilitate the collection, processing, and utilisation of financial and operational information, thereby supporting planning, coordination, and decision-making. Management support further determines the extent to which technological resources are provided, employees are trained, and technology-related initiatives are successfully implemented. Research by Ogungbade and Oyerogba (2020) highlighted the influence of organisational practices on management processes among manufacturing firms in Nigeria, while Shuaib et al. (2021) examined factors associated with organisational performance and innovation in manufacturing settings. These findings underscore the importance of examining how information technology and management support jointly contribute to organisational performance in Nigerian manufacturing companies.

According to Adeyemi (2026) Kwara State, manufacturing companies contribute significantly to local economic development through employment generation, industrial activities, and value creation. However, many manufacturing firms within the state continue to face challenges associated with inadequate technological infrastructure, limited investment in information systems, weak managerial support, and operational inefficiencies. The ability of management to provide

technological resources, support employee training, encourage innovation, and facilitate the effective use of information systems has therefore become increasingly important for organisational performance and competitiveness in the state's manufacturing sector. Although previous studies have examined technology adoption and management practices among Nigerian manufacturing firms generally, there remains limited empirical evidence focusing specifically on the influence of information technology and management support on organisational performance among manufacturing companies in Kwara State. This gap necessitates further investigation into the effects of information technology and management support on organisational performance within manufacturing firms in Kwara State, Nigeria.

2.0 Literature Review

Information Technology

Information Technology (IT) can be conceptually understood as a strategic organizational capability that integrates digital infrastructures, systems, and applications to enable the effective creation, processing, storage, and dissemination of information for decision-making and operational control. Rather than being limited to technological tools (Irwansyah 2023), IT represents an enabling ecosystem that supports organizational intelligence, coordination, and performance optimization. Contemporary scholarly thinking positions IT as a dynamic driver of organizational transformation. Shojaei et al., (2024) conceptualize IT as a performance-enhancing digital enabler, while Guo et al. (2020) and Khan et al. (2022) extend this view by emphasizing its integrative role in communication, data management, and decision architecture. In this sense, IT is not merely supportive infrastructure but a central mechanism through which organizations achieve efficiency, responsiveness, and strategic alignment.

In practical organizational settings, IT functions as an intelligent control system that reduces uncertainty, enhances transparency, and improves operational coordination. It enables real-time monitoring, automated processes, and data-driven decision-making, thereby strengthening internal control mechanisms and institutional reliability (Shara, 2024; Ilori 2024). Consequently, IT can be viewed as an organizational enabler that transforms raw data into actionable intelligence, ensuring that managerial decisions are timely, accurate, and evidence based.

IT Infrastructure

IT Infrastructure represents the foundational technological and structural backbone upon which organizational digital capabilities are built and sustained. Conceptually, it extends beyond physical assets such as hardware and software to include integrated systems, network architecture, data platforms, and technical support services that collectively enable seamless organizational operations. From a contemporary perspective, IT infrastructure is best understood as a shared enabling platform that supports scalability, interoperability, and adaptability within organizations (Van-Der et al., 2024). Hustad and Olsen (2021) reinforce this view by framing IT infrastructure as a service-oriented capability that evolves alongside organizational needs, while Bobina and Grachev (2024) emphasize its hybrid nature, combining technological and human competencies to support business continuity.

In operational terms, IT infrastructure serves as the structural foundation for internal control reliability and efficiency. It enables process automation, ensures data integrity, and facilitates secure information flow across organizational units. A robust infrastructure strengthens monitoring systems, reduces operational vulnerabilities, and supports compliance with organizational and regulatory requirements (Ilori et al., 2024; Akinade et al., 2021). Thus, IT

infrastructure is conceptually a stability mechanism that ensures continuity, accuracy, and resilience in organizational operations.

IT Training and Competence

IT Training and Competence can be conceptually defined as the continuous developmental process through which organizational members acquire, refine, and apply technological knowledge and skills required for effective utilization of information systems. It represents the human capability dimension of IT, emphasizing the alignment between technological systems and employee capability. Rather than being a one-time activity, IT training is increasingly conceptualized as an adaptive learning mechanism that enables organizations to remain responsive to technological change. Davis and Yen (2019) describe it as structured skill acquisition, while Mehmood (2021) expands the concept to include problem-solving ability and technological adaptability as core competence dimensions.

From a functional standpoint, IT competence determines how effectively technological systems are utilized within organizational processes. It reduces operational errors, enhances system reliability, and improves the interpretation of digital outputs for decision-making. In control systems, it strengthens compliance, reduces risk exposure, and improves transparency in reporting processes (Pastrana & Tobón, 2020; Olaniyi & Omubo, 2023). Therefore, IT training and competence can be viewed as the human capital engine that activates the full value potential of technological investments.

IT Governance and Compliance

IT Governance and Compliance represent the strategic and regulatory frameworks that guide the alignment, control, and accountability of information technology within organizational systems. Conceptually, IT governance ensures that technological investments and operations are directed toward achieving organizational objectives, while compliance ensures adherence to internal policies, external regulations, and ethical standards. IT governance is increasingly understood as a structured decision-making architecture that connects technology deployment with organizational strategy and risk management priorities (Joshi et al., 2022; Dharmawati et al., 2023). It defines how authority, responsibility, and accountability are distributed in the management of IT resources. Compliance, in contrast, functions as the enforcement dimension that safeguards system integrity, security, and legal conformity.

Together, these constructs operate as a dual-control mechanism that enhances transparency, reduces operational risk, and strengthens institutional trust. Effective IT governance ensures that systems are not only functional but also strategically aligned, while compliance ensures that operations remain secure, auditable, and legally defensible (Ilori et al., 2024; Madu & Hassan, 2021). Hence, IT governance and compliance can be conceptually viewed as the institutional control architecture of digital organizations.

IT Usage

IT Usage refers to the degree, intensity, and effectiveness with which information technology systems are embedded and applied in organizational processes for operational and managerial functions. Conceptually, it reflects the actualization stage of IT adoption, where technological systems are actively integrated into day-to-day organizational activities. Venkatesh (2022) defines IT usage as task-based system utilization, while Chi et al. (2024) extend this by emphasizing the interaction between users and systems as a determinant of organizational performance. This

suggests that IT usage is not merely access to technology but meaningful engagement with technological systems to achieve organizational outcomes.

From an operational perspective, IT usage enhances automation, reduces human error, and improves transparency in organizational processes. It enables real-time monitoring, strengthens decision-making speed, and enhances control accuracy in both financial and operational systems (Romney & Steinbart, 2018; Roszkowska, 2021). Consequently, IT usage can be conceptualized as the behavioral expression of technological capability within organizations, determining the extent to which IT investments translate into measurable performance outcomes.

Management Support

Management support is widely recognised as a critical organisational factor that shapes the development and sustainability of organisational culture within manufacturing firms. According to Ahmad et al. (2023), management support refers to the extent to which top management actively participates in organisational processes by providing direction, allocating resources, and ensuring that policies and practices are aligned with organisational goals. In the context of manufacturing firms, it also involves leadership commitment to employee welfare, communication, training, supervision, and the reinforcement of shared organisational values and behavioural norms (Haryanto et al., 2024). These managerial actions play a central role in shaping how employees perceive the organisation and how they respond to its cultural expectations. In manufacturing organisations where management demonstrates strong support, a positive organisational culture is more likely to emerge. This is reflected in improved teamwork, open-air communication, employee involvement in decision-making, and a stronger sense of commitment to organisational goals. Employees tend to perform better when they perceive that management is supportive, fair, and actively invested in their development. Such environments encourage innovation, collaboration, and adherence to organisational values, all of which strengthen organisational culture and improve overall performance. In contrast, weak management support often results in poor communication, low employee motivation, resistance to organisational values, and a fragmented workplace culture, which can negatively affect productivity and organisational effectiveness (Katebi et al., 2024).

Manufacturing Companies

Manufacturing companies refer to organised business entities that transform raw materials, components, or intermediate inputs into finished or semi-finished goods through systematic production processes. These firms operate within structured production systems that involve machinery, labour, technology, and managerial coordination to ensure efficiency, quality control, and value addition. Manufacturing companies are typically characterised by large-scale operations, standardized production procedures, and a strong dependence on technology, human capital, and managerial oversight to achieve productivity, cost efficiency, and competitiveness in both domestic and global markets. Recent empirical studies consistently conceptualise manufacturing companies as technology-driven, performance-oriented organisations that rely heavily on information systems, managerial support, and innovation capacity to remain competitive. Manufacturing firms are increasingly defined in literature as digitally integrated production systems where value creation is achieved through the application of advanced technologies and managerial coordination. For instance, studies on Nigerian manufacturing firms describe them as organisations engaged in the conversion of inputs into industrial goods while simultaneously adopting digital tools to enhance productivity and sustainability (Okoye et al., 2025; Sa'id, 2020).

These firms are not only production-oriented but also strategically dependent on information technology adoption to improve operational efficiency and competitiveness.

From a technological standpoint, manufacturing companies are conceptualised as innovation-enabled enterprises whose performance is significantly shaped by IT systems, automation, and data-driven decision-making. Empirical findings show that digital transformation and IT integration significantly enhance operational control, productivity, and business performance in manufacturing environments (Wang et al., 2023; Chi et al., 2024; Drogalas, 2024). In this sense, manufacturing firms are viewed as dynamic systems where technological infrastructure is central to survival and growth.

From a managerial perspective, manufacturing companies are also defined as management-dependent organisational systems in which leadership commitment and managerial support determine the success of technological adoption and workforce effectiveness. Studies consistently highlight that management support strengthens IT utilisation, improves employee competence, and ensures effective implementation of technological systems (Ahmad et al., 2023; Sandu et al., 2023). Without strong managerial involvement, even advanced technological systems tend to underperform due to poor implementation or underutilisation.

Furthermore, manufacturing firms in contemporary literature are understood as performance-driven industrial organisations operating under competitive and resource-constrained environments, where success depends on the integration of technology, managerial support, and continuous employee capability development (Chowdhury et al., 2022; Cao et al., 2018; Wadesango et al., 2024). This reflects a shift from traditional production-centric definitions to a broader strategic and digitally enabled organisational view.

Drawing from both conceptual and empirical perspectives, manufacturing companies can be understood as technologically enabled, management-driven production organisations that transform inputs into value-added goods while leveraging information technology and managerial support to enhance operational efficiency, innovation capacity, and competitive advantage. Recent empirical evidence (2021–2025) consistently positions manufacturing firms as dynamic systems whose performance is no longer determined solely by physical production capacity but increasingly by digital integration, managerial commitment, and workforce technological competence.

Theoretical Framework

This study is anchored on Agency Theory, the Resource-Based View (RBV), and the Technology Acceptance Model (TAM), which collectively explain not only the direct effect of information technology on organisational performance but also the moderating role of management support (Arbelo 2021). The integration of these theories provides a comprehensive framework for understanding how managerial commitment influences the effectiveness of information technology initiatives in manufacturing companies in Kwara State. While information technology represents a strategic organisational resource, its contribution to performance is often dependent on the extent to which management provides financial resources, employee training, policy support, monitoring mechanisms, and strategic direction. Consequently, the three theories jointly suggest that management support can strengthen or weaken the effect of information technology dimensions on organisational performance.

Agency Theory, originally developed by Ross (1973) and Mitnick (1973) and further expanded by Jensen and Meckling (1976), explains how organisational controls reduce information asymmetry and opportunistic behaviour between principals and agents. The theory suggests that investment in IT governance and compliance mechanisms enhances transparency, monitoring, and accountability. However, these benefits can only be fully realised when management actively supports the implementation and enforcement of technology-related controls. From this perspective, management support is expected to strengthen the relationship between IT governance and compliance and organisational performance because managerial commitment ensures compliance with established procedures, adequate monitoring, and the effective utilisation of information systems. Similarly, management support can enhance the performance effects of IT infrastructure and employee training by ensuring that resources are properly allocated and technology investments are aligned with organisational objectives.

The Resource-Based View (RBV), introduced by Wernerfelt (1984) and expanded by Barney (1991), posits that sustainable competitive advantage arises from valuable, rare, inimitable, and non-substitutable organisational resources. Within this framework, IT infrastructure, employee IT competence, governance systems, and technology usage constitute strategic organisational resources. However, RBV also recognises that the value derived from these resources depends on complementary organisational capabilities. Management support serves as such a complementary capability because it facilitates investments in technology, employee development, technological innovation, and system maintenance. Consequently, the positive effect of IT infrastructure, IT training and competence, IT governance and compliance, and IT usage on organisational performance is expected to be stronger in firms where management actively supports technology initiatives. The moderating role of management support is therefore rooted in its ability to enhance the effectiveness and strategic utilisation of IT resources.

The Technology Acceptance Model (TAM), developed by Davis (1989), explains technology adoption through perceived usefulness and perceived ease of use. According to TAM, employees are more likely to accept and effectively utilise information technology when they perceive it as beneficial and easy to use. Management support directly influences these perceptions by providing training, technical assistance, motivation, incentives, and organisational encouragement for technology adoption. Thus, management support is expected to strengthen the relationship between IT training and competence and organisational performance by improving employee confidence and system utilisation. Likewise, management support can amplify the impact of IT usage on performance because employees are more likely to embrace and effectively use technology when management demonstrates commitment to digital transformation. Therefore, TAM provides the behavioural justification for proposing management support as a moderator of the relationship between information technology dimensions and organisational performance.

In summary, the moderation hypothesis is theoretically grounded in all three underpinning theories. Agency Theory explains how management support strengthens governance and control mechanisms associated with information technology; RBV explains how management support enhances the value derived from strategic IT resources; and TAM explains how management support promotes employee acceptance and effective utilisation of technological systems. Collectively, these theories provide a clear justification for expecting management support to moderate the relationships between IT infrastructure, IT training and competence, IT governance and compliance, IT usage, and organisational performance in manufacturing companies in Kwara State.

Empirical Literature Review and Hypotheses Development

A broad consensus across empirical literature positions information technology (IT) adoption as an important driver of organisational performance, process optimisation, and competitive sustainability in contemporary industrial environments. Within corporate and manufacturing settings, digital technologies enhance operational monitoring, shorten transaction cycles, and improve data management efficiency. Almaqtari (2024) demonstrates that integrating advanced technologies, including cloud computing, big data analytics, and deep learning, improves operational efficiency and decision-making quality. Similarly, Cara (2020) and Drogalas (2024) report that effective IT utilisation enhances cost efficiency and organisational responsiveness. Within the Nigerian manufacturing context, Sa'id (2020), Taiwo et al. (2019), and Akinleye and Olanipekun (2019) establish that technological adoption strengthens operational control and organisational performance. Supriati and Ristiyani (2019) also demonstrate the contribution of robust IT systems to accountability and automated fraud detection. Collectively, these studies establish the relevance of IT to organisational performance, although the extent of its benefits may depend on the organisational conditions under which the technology is implemented and utilised.

Management support represents a potentially important condition shaping the relationship between IT and organisational performance. Ahmad et al. (2023) provide evidence that management support strengthens the relationship between IT system quality and organisational effectiveness, while Sandu et al. (2023) and Wadesango et al. (2024) highlight the limitations of IT implementation in the absence of adequate executive involvement. In Nigeria, Aguke and Igbomor (2024) demonstrate that informational, instrumental, and appraisal support influence firm performance, while Alex (2023) highlights the contribution of managerial commitment to operational resilience and quality management. These findings suggest that management support may influence not only organisational performance directly but also the extent to which firms translate their IT investments into measurable performance gains. However, evidence of a direct effect of management support on performance does not, by itself, establish that management support moderates the IT–performance relationship. This distinction requires explicit empirical investigation.

Other studies identify employee competence, organisational culture, and governance as relevant conditions for effective IT utilisation. Chowdhury et al. (2022) and Derakhshani and Mahmoudi (2020) associate structured IT training with improved employee competence and productivity, while David et al. (2024) and Thottoli (2021) link IT proficiency with reporting accuracy, internal controls, and audit quality. Adenekan and Jimoh (2024) further emphasise the importance of management-supported digital training in strengthening technological adaptability. From an organisational culture perspective, Wiese et al. (2024) associate developmental cultures with the adoption of advanced Industry 4.0 technologies, while Shuaib (2021) highlights the relevance of hierarchical and market-oriented cultures to quality management. Similarly, Olayiwola and Akeke (2022), Ubabudu et al. (2026), and Babatunde (2025) report positive associations between supportive cultural attributes and organisational outcomes. Although these studies identify complementary organisational factors, they do not necessarily establish whether management support changes the strength or direction of the relationship between IT and organisational performance.

Furthermore, Wang et al. (2021) indicate that effective IT outcomes depend on governance arrangements and managerial commitment, while Oluoch (2022), Kusena (2023), and Okoye et al. (2023) identify infrastructure deficiencies, implementation costs, unreliable electricity, weak

policy environments, and limited technical expertise as barriers to technology adoption in developing economies. Despite these contributions, the literature reviewed presents a specific empirical and contextual issue: findings on IT adoption, management support, and organisational performance are largely discussed as separate direct relationships or within organisational settings different from manufacturing companies in Kwara State. The evidence presented does not sufficiently establish whether management support strengthens or weakens the effect of IT on organisational performance in this specific context. The proposed moderation analysis therefore extends the inquiry beyond whether IT and management support independently influence performance to examine whether managerial commitment, resource provision, and implementation assistance condition the performance benefits derived from IT. This provides a theoretically relevant test of the contingent relationship between technological resources and organisational outcomes, rather than relying solely on the assumption that greater IT adoption necessarily produces better performance.

Accordingly, the study hypothesises that:
H_{01}: Management support significantly moderates the relationship between information technology and organisational performance in manufacturing companies in Kwara State, Nigeria.

3.0 Methodology

This study adopted a quantitative survey research design to investigate the influence of information technology and management support on organisational performance among manufacturing companies in Kwara State, Nigeria. Primary data were collected through a structured questionnaire administered to 212 employees and managerial staff drawn from registered manufacturing firms operating within the state. The survey method was considered appropriate because it enabled the collection of relevant data from respondents with adequate knowledge of their organisations' information technology practices, management support mechanisms, and operational performance. The study focused on four dimensions of information technology, namely IT infrastructure, IT training and competence, IT governance and compliance, and IT usage, while management support was examined as both an independent factor and a moderating variable. Data analysis was conducted using Partial Least Squares Structural Equation Modelling (PLS-SEM), which is suitable for analysing complex relationships involving direct and moderating effects among latent constructs.

Prior to testing the research hypotheses, the measurement model was evaluated to ascertain the reliability and validity of the latent constructs. Indicator reliability was assessed using outer loadings, while internal consistency reliability was examined through Cronbach's Alpha and Composite Reliability. Convergent validity was assessed using Average Variance Extracted (AVE), and discriminant validity was established through the Fornell-Larcker criterion and the Heterotrait-Monotrait (HTMT) ratio. According to Hair et al. (2022), acceptable measurement quality is achieved when indicator loadings exceed 0.70, Composite Reliability exceeds 0.70, AVE exceeds 0.50, and HTMT values remain below 0.90. Only after confirming satisfactory reliability and validity were the structural model relationships and moderation effects evaluated.

To examine the direct and moderating relationships, the study specified the following moderation model:

$$OP_i = \beta_0 + \beta_1 ITI_i + \beta_2 ITTC_i + \beta_3 ITGC_i + \beta_4 ITU_i + \beta_5 MS_i + \beta_6 (ITI_i \times MS_i) + \beta_7 (ITTC_i \times MS_i) + \beta_8 (ITGC_i \times MS_i) + \beta_9 (ITU_i \times MS_i) + \varepsilon_i$$Type equation here.

where OPrepresents organisational performance, ITIdenotes IT infrastructure, $ITTC$represents IT training and competence, $ITGC$denotes IT governance and compliance, ITUrepresents IT usage, and MSdenotes management support. The interaction terms $(ITI \times MS)$, $(ITTC \times MS)$, $(ITGC \times MS)$, and $(ITU \times MS)$were included to determine whether management support influences the strength of the relationship between each information technology dimension and organisational performance. The coefficients $\beta_1$to $\beta_4$estimate the direct effects of the information technology dimensions, while β_5 captures the direct effect of management support on organisational performance. The interaction coefficients β_6 to β_9 assess the moderating role of management support. A statistically significant interaction coefficient indicates moderation, while its sign shows whether management support strengthens or weakens the corresponding relationship between information technology and organisational performance. This model therefore provides a comprehensive framework for examining how technological capabilities and managerial support jointly influence organisational performance among manufacturing firms in Kwara State.

4.0 Results and Discussion

This section presents the descriptive statistics of the study variables, providing a summary of the respondents' demographic characteristics and their responses to the questionnaire items. Descriptive statistics, including means, standard deviations, frequencies, and percentages, are used to give an overview of the data, identify patterns, and highlight trends. This analysis helps to understand the general perceptions of respondents regarding the key constructs of the study before proceeding to inferential analysis.

Table 1:
Construct-Level Descriptive Statistics

Variable	Mean	Std. Dev.	Minimum	Maximum	Skewness	Kurtosis	Obs.
IT Training and Competence (ITTC)	3.746	0.926	1.000	5.000	-0.767	0.470	212
IT Competence and Skills (ICS)	3.900	0.857	1.000	5.000	-0.603	0.186	212
IT Governance and Compliance (ITGC)	3.660	0.929	1.000	5.000	-0.638	0.214	212
IT Infrastructure (ITI)	3.823	0.950	1.000	5.000	-0.838	0.464	212
IT Usage (ITU)	3.870	0.866	1.000	5.000	-0.850	0.941	212
Management Support (MS)	3.973	0.902	1.000	5.000	-0.826	0.383	212

Source: Survey data, 2026.

Table 4.2 presents the descriptive statistics of the major constructs used in the study. The results indicate that all variables recorded mean scores above the midpoint of the five-point Likert scale (3.00), suggesting a generally positive perception of information technology practices and management support among manufacturing companies in Kwara State. Management Support (MS) had the highest mean score (Mean = 3.973), implying that respondents generally perceived strong managerial commitment towards organisational activities and technological initiatives. This was followed by IT Competence and Skills (ICS) (Mean = 3.900) and IT Usage (ITU) (Mean = 3.870), indicating a relatively high level of employee competence and utilisation of information technology within the firms.

The standard deviation values ranged from 0.857 to 0.950, showing moderate variability in respondents' opinions. All variables exhibited negative skewness values, indicating that responses were concentrated towards the higher end of the scale, suggesting favourable evaluations of the constructs. Furthermore, the kurtosis values were within acceptable limits (less than ±3), implying no substantial departure from normality. Overall, the descriptive statistics suggest that information technology dimensions and management support are reasonably well established among the sampled manufacturing firms, providing a suitable basis for subsequent regression and moderation analyses.

Model Validation Results

The correlation, reliability, validity, and hypothesis testing results collectively demonstrate that information technology is an important driver of organisational performance among manufacturing companies in Kwara State. The correlation analysis revealed positive associations among all the study variables, with IT usage showing the strongest relationship with other IT dimensions, suggesting that firms that actively utilise technology are more likely to realise performance benefits. These relationships were sufficiently moderate and remained below the recommended threshold of 0.80, indicating the absence of multicollinearity and confirming that the constructs measure distinct aspects of information technology and management support. The reliability and validity assessments further established the robustness of the measurement model, as all constructs recorded satisfactory Cronbach's alpha and composite reliability values above the recommended 0.70 benchmark, while the AVE, HTMT, and Fornell-Larcker results confirmed adequate convergent and discriminant validity. These findings support the argument of Barney (1991) and Wernerfelt (1984) under the Resource-Based View (RBV) that organisational resources such as IT competence, governance mechanisms, and technological capabilities constitute strategic assets capable of generating superior performance when effectively deployed.

Table 2:
Hypothesis Testing Results

Variables	Path Coefficient (β)	Standard Deviation	T-Statistic	P-Value	Decision
IT Training and Competence (ITTC)	0.200	0.079	2.523	0.012	Supported
IT Governance and Compliance (ITGC)	0.148	0.067	2.205	0.027	Supported
IT Infrastructure (ITI)	-0.017	0.076	0.224	0.822	Not Supported
IT Usage (ITU)	0.348	0.089	3.901	0.000	Supported
Management Support × Information Technology	0.113	0.075	1.500	0.134	Not Supported

Source: SmartPLS 4 Output, 2026.

Discussion of Findings

The hypothesis testing results indicate that information technology contributes to organisational performance primarily through human capability, governance mechanisms, and actual system utilisation rather than through the mere availability of technological resources. Specifically, IT training and competence (β = 0.200, t = 2.523, p = 0.012), IT governance and compliance (β = 0.148, t = 2.205, p = 0.027), and IT usage (β = 0.348, t = 3.901, p = 0.000) were found to have significant positive effects on organisational performance, with IT usage emerging as the strongest predictor. These findings suggest that manufacturing firms achieve superior performance when

employees possess the requisite technological skills, when technology-related activities are guided by effective governance structures, and when information technology is extensively integrated into operational processes. The result aligns with recent empirical evidence showing that the business value of digital technologies depends largely on employees' competencies, organisational digital capabilities, and effective technology utilisation rather than mere technology ownership. For instance, Alyoubi et al. (2023) found that digital transformation capabilities significantly improve organisational performance through enhanced operational efficiency and employee effectiveness, while AlNuaimi et al. (2022) reported that organisations derive greater performance benefits when digital technologies are actively utilised and embedded within organisational processes. These findings strongly support the Technology Acceptance Model (TAM), which posits that technology improves organisational outcomes when users perceive it as useful and consistently employ it in their work activities. They also reinforce the Resource-Based View (RBV), which argues that unique organisational capabilities such as employee expertise, technological knowledge, and governance structures constitute strategic resources capable of generating sustained competitive advantage.

In contrast, IT infrastructure was found to have no significant effect on organisational performance (β = -0.017, t = 0.224, p = 0.822), indicating that investments in hardware, software, and technological facilities alone are insufficient to improve organisational outcomes. This finding is consistent with recent studies demonstrating that technology infrastructure does not automatically create value unless complemented by organisational capabilities, employee skills, and effective management processes. Denicolai, Zucchella, and Magnani (2023) similarly observed that digital resources only contribute to superior performance when firms develop complementary capabilities that facilitate value creation. The result therefore provides additional support for RBV's proposition that resources become performance-enhancing only when they are valuable, effectively utilised, and difficult for competitors to replicate. Furthermore, the study found that management support does not significantly moderate the relationship between information technology and organisational performance (β = 0.113, t = 1.500, p = 0.134). Although the coefficient was positive, the relationship failed to attain statistical significance, suggesting that management support does not significantly strengthen or weaken the effect of information technology on performance among the sampled manufacturing firms. This outcome provides limited support for Agency Theory, which contends that managerial oversight, monitoring, and resource commitment should enhance organisational effectiveness by reducing information asymmetry and opportunistic behaviour. A plausible explanation is that employees' technological competence, governance mechanisms, and actual technology usage have direct performance-enhancing effects that operate independently of managerial intervention. Overall, the findings provide stronger empirical support for the Resource-Based View and the Technology Acceptance Model than for the moderating assumptions of Agency Theory, highlighting that organisational performance improvements in manufacturing firms are driven more by technology capabilities and utilisation than by managerial support alone.

5.0 Conclusion and Recommendations

The study concludes that information technology is a significant driver of organisational performance among manufacturing companies in Kwara State. Specifically, IT training and competence, IT governance and compliance, and IT usage were found to significantly enhance organisational performance, with IT usage exerting the strongest positive influence. Conversely, IT infrastructure did not significantly affect organisational performance, indicating that the mere

availability of technological facilities is insufficient to generate performance gains without effective utilisation and employee competence. The findings provide support for the Resource-Based View and Technology Acceptance Model, suggesting that value is created when technological resources are effectively governed, accepted, and utilised by employees. Furthermore, management support was found not to significantly moderate the relationship between information technology and organisational performance, implying that the direct benefits of IT capabilities are more influential than managerial intervention in explaining performance outcomes.

Based on these findings, manufacturing firms in Kwara State should prioritise continuous staff training and development programmes to strengthen employees' technological competencies and maximise the benefits of information technology. Organisations should also improve their IT governance and compliance frameworks while encouraging the effective utilisation of available technological tools across operational processes. Rather than focusing solely on investments in hardware and software infrastructure, management should ensure that existing technologies are adequately integrated into business activities and aligned with organisational objectives. Policymakers and industry regulators should support digital capacity-building initiatives and promote best practices in IT governance to enhance the competitiveness and performance of manufacturing firms in Nigeria.

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