**ENTERPRISE RESOURCE PLANNING SYSTEM INTERATION AND SUPPLY CHAIN EFFICIENCY AT NATIONAL MEDICAL STORES**.

**ABSTRACT**

This study examined the relationship between change management in Enterprise Resource Planning (ERP) system and supply chain efficiency at National Medical Stores (NMS). A correlational research design was adopted, and data were collected from 73 respondents through structured questionnaires and interviews. System integration showed a strong positive correlation with supply chain efficiency (r = .759, p < 0.01), indicating that well-integrated ERP modules play a crucial role in streamlining supply chain operations. The study concluded that seamless system integration is a key enabler of supply chain efficiency at NMS. It recommended that NMS strengthen system integration efforts to ensure successful ERP implementation and enhanced supply chain performance.

Key words: System Integration; Enterprise Resource Planning; National Medical Stores

## INTRODUCTION

In today’s dynamic healthcare environment, efficient supply chain management is vital for ensuring timely access to essential medicines and health commodities. In Uganda, National Medical Stores (NMS) plays a pivotal role in the procurement, storage, and distribution of medical supplies across the country. However, like many large organizations, NMS has historically faced challenges in ensuring efficient supply chain operations due to fragmented systems, manual processes, and a lack of real-time data visibility (Sanders, 2025). These inefficiencies result in delays, stockouts, and wastage, all of which undermine healthcare service delivery.

To address these operational challenges, many organizations have adopted Enterprise Resource Planning (ERP) systems—integrated software solutions that automate core business processes and facilitate seamless information flow across departments (Mhaskey, 2024). When effectively implemented, ERP systems can significantly enhance supply chain efficiency by optimizing inventory management, improving procurement processes, and reducing lead times (Gupta, P., & Sachan, A., 2024).

System integration refers to the seamless unification of various functional modules within the ERP system, such as procurement, inventory, finance, and distribution. Effective integration enables real-time data sharing and process synchronization, which are crucial for reducing redundancy, minimizing delays, and improving overall coordination within the supply chain (Abaku et al., 2024). Poor integration, on the other hand, can lead to data silos, system downtimes, and disruption of workflows—issues that have been reported at NMS despite ERP adoption.

National Medical Stores (NMS) is a government-owned organization mandated to procure, store, and distribute essential medicines and medical supplies to public health facilities across Uganda. Established under the National Medical Stores Act of 1993, NMS plays a critical role in ensuring an efficient and reliable public health supply chain by managing inventory, coordinating deliveries, and supporting national health programs. Despite global advancements in ERP-driven supply chain optimization, there is limited empirical research on how these systems perform in resource-constrained settings like Uganda. In particular, the effectiveness of ERP implementation at National Medical Stores—considering its system integration has not been rigorously evaluated. This study sought to fill that gap by examining how this element influences supply chain efficiency at NMS. The findings were aimed at informing both policy and practice, offering lessons for similar public sector organizations striving to enhance supply chain performance through digital transformation.

## LITERATURE REVIEW

The implementation of Enterprise Resource Planning (ERP) systems is often viewed as a strategic tool to improve the efficiency of business processes, particularly in supply chain management (Kunneke & Niemann, 2024). One of the significant aspects of ERP system integration that affects supply chain efficiency is data migration. Data migration involves transferring data from legacy systems to the ERP system, ensuring that all relevant information is accurately and seamlessly transferred to optimize operational efficiency (Feng & Ali, 2024). On the other hand, technology alignment, which involves ensuring that the technology infrastructure is compatible and aligned with the ERP system's requirements, also plays a crucial role in optimizing supply chain processes (Alzahmi et al., 2024). In this literature review, the study analyzes the impacts of data migration and technology alignment on supply chain efficiency, with examples from various countries and industries.

Data migration has a significant impact on the overall performance of ERP systems, particularly in terms of supply chain efficiency. Successful data migration ensures that accurate, complete, and up-to-date data is transferred to the ERP system (Najafi, 2024). According to research by Zaman (2024), organizations that successfully execute data migration report significant improvements in operational efficiency and decision-making. In the context of supply chains, seamless data migration allows for better tracking of inventory, order processing, and procurement, ultimately leading to improved supply chain performance (Hamza et al., 2024). On the contrary, poor data migration can lead to incorrect or incomplete data, resulting in inefficiencies such as stockouts, delays in production, and issues with customer service (Vaka, 2024). This highlights the importance of robust data cleansing and transformation processes to avoid these pitfalls.

Despite its critical role, data migration can present substantial challenges, particularly in organizations with legacy systems and vast amounts of historical data. In a study by Razi and Batan (2023), it was noted that companies in developing countries often face greater challenges in data migration due to inadequate infrastructure and lack of technical expertise. In these cases, the failure to migrate data properly can undermine the intended benefits of an ERP system, particularly in supply chain operations where real-time data access is vital (Najafi, 2024). For instance, a case study from Nigeria's National Petroleum Corporation showed that poor data migration resulted in significant delays and inefficiencies in supply chain management, impacting distribution timelines and stock availability (Olisah, 2023). These challenges highlight the need for a well-planned data migration strategy and adequate training for employees to ensure the success of ERP implementation.

Conversely, successful data migration can result in substantial improvements in supply chain efficiency by allowing organizations to leverage real-time data, integrate with other systems, and make informed decisions (Ngcobo et al., 2024). A case study from the United States, involving a major retailer, showed that efficient data migration from their legacy system to a new ERP system resulted in streamlined inventory management, better demand forecasting, and enhanced supply chain responsiveness (Emma, 2024). With accurate data at the core of their supply chain processes, the retailer experienced a reduction in stockouts, improved customer satisfaction, and cost savings (Choudhuri, 2024). This demonstrates that the quality of data migration has a direct correlation with supply chain efficiency and overall business performance.

Technology alignment also plays a pivotal role in the successful integration of ERP systems and the improvement of supply chain efficiency. When an organization's technology infrastructure is well-aligned with the ERP system's capabilities, the integration process is smoother, and the system's benefits can be fully realized (Husain, 2024). In their study on ERP implementation in India, Thangaraju (2024) found that companies with a strong alignment between their technology infrastructure and the ERP system experienced fewer disruptions in their supply chain activities. The alignment ensures that the ERP system is compatible with existing hardware and software, reducing the need for frequent system updates and minimizing downtime. Moreover, it enables the smooth transfer of data between various supply chain partners and internal departments, improving the overall flow of information.

However, technology misalignment can significantly hinder the potential of ERP systems in improving supply chain efficiency (Shekar, 2023). A case study from South Africa involving a large manufacturing company revealed that poor technology alignment led to frequent system crashes, data inconsistencies, and delays in order processing (Mabotja & Mavutha, 2024). These issues resulted in inefficiencies across the supply chain, including problems with procurement, inventory management, and customer delivery. The lack of integration between ERP software and other technologies used in the organization made it difficult to synchronize operations, leading to missed opportunities for optimization (Matlhoko, 2023). This highlights the need for proper planning and evaluation of an organization's technology infrastructure before implementing an ERP system.

In contrast, when technology alignment is achieved, it allows for a more efficient flow of information between the various stages of the supply chain (Mhaskey, 2024). A case study from the United Kingdom on the logistics company DHL showed that when the company's ERP system was aligned with its existing technology infrastructure, it resulted in better coordination across its supply chain, reducing transit times and enhancing inventory management (Osagie, 2021). This integration enabled DHL to track shipments in real-time, optimize routes, and improve customer satisfaction. The ability to align technology with ERP systems, therefore, has a direct impact on the smooth running of supply chain operations and the overall efficiency of the organization (Liu, 2021).

The research gaps in the current literature primarily related to the varying impact of data migration and technology alignment on supply chain efficiency in different geographical and industrial contexts. While existing studies have extensively covered the benefits and challenges of data migration and technology alignment in ERP systems, there is a lack of in-depth research on how these two dimensions interact and their combined effect on supply chain efficiency. Additionally, much of the literature focuses on developed countries, with limited attention given to the unique challenges faced by organizations in developing countries, such as those in Africa and Asia. This study sought to fill this gap by conducting a case study on National Medical Stores in Uganda, examining how data migration and technology alignment specifically affect supply chain efficiency in a developing country context. By analyzing both dimensions independently and in combination, this research contributes to a deeper understanding of ERP implementation in supply chains and provide actionable insights for improving supply chain efficiency globally.

**METHODOLOGY**

The study adopted a cross-sectional research design and a mixed-methods approach to analyse the impact of ERP systems implementation on supply chain efficiency. A cross-sectional design was appropriate as it allows for the collection of data at a single point in time (Maier et al., 2023). The population for this study included employees and managers involved in the ERP system implementation and supply chain operations at National Medical Stores. This encompassed individuals from various departments, including procurement, logistics, inventory management, and IT support. The study targeted a specific subset of NMS employees who had direct experience with ERP systems and their operational impact on the supply chain. Given the specialized nature of the organization, the population was relatively small but diverse, including individuals with varying levels of involvement with the ERP system. The total number of employees from relevant departments at NMS was 108. This was based on the prevailing staffing records of those directly engaged in ERP-supported supply chain functions as provided by NMS Human Resource and departmental heads. From the population a sample of 86 employees were selected using Krejcie and Morgan’s (1970) sample size determination table, which is appropriate for finite population sampling. This sample size ensures statistical representativeness while remaining manageable for data collection purposes. Two sampling techniques were employed: purposive sampling and simple random sampling (SRS), each justified by the roles of the target respondents. Purposive sampling was used to select top-level management, particularly those directly involved in the planning, installation, and configuration of the ERP system at National Medical Stores (NMS). Simple Random Sampling (SRS) was used to select middle-level and lower-level staff from the logistics, procurement, inventory, and IT departments. SRS was suitable for this group because it eliminates selection bias by giving each eligible employee an equal and independent chance of being chosen.

Once the data was collected, the analysis was carried out using both qualitative and quantitative techniques. For the quantitative data, descriptive statistics—such as means, percentages, and standard deviations—were used to summarize responses and provide an overview of key supply chain performance indicators (e.g., procurement lead time, delivery timeliness, and inventory turnover) before and after ERP implementation. Descriptive statistics were appropriate for identifying central tendencies and patterns within the data, enabling a clear understanding of performance distribution across different dimensions of ERP implementation. To test the relationships between user system integration, and supply chain efficiency outcomes, inferential statistics were employed. Specifically, Pearson’s correlation analysis was used to assess the strength and direction of the linear relationship between system integration and supply chain performance metrics.

For the qualitative data obtained from interviews, thematic analysis was applied to identify and interpret patterns in participants' experiences and perceptions. Responses were coded into themes reflecting common challenges, benefits, and lessons learned from ERP implementation. This multi-method approach ensured triangulation of findings and a comprehensive understanding of both the measurable effects and contextual nuances surrounding ERP’s impact at NMS**.**

**FINDINGS**

This section examines how ERP system integration influences supply chain efficiency at National Medical Stores (NMS). Effective system integration entails the seamless alignment and communication between various ERP modules—such as procurement, inventory, and distribution—with supporting technologies and legacy systems. This integration enables real-time data flow, synchronized operations, and more accurate decision-making. The extent to which system integration is achieved can significantly affect key performance metrics such as inventory turnover, delivery reliability, and procurement lead time. This section provides an analysis based on both descriptive statistics and inferential tests to assess the relationship between system integration and supply chain efficiency at NMS.

## Descriptive Statistics on System Integration

This subsection presents respondents’ perceptions of system integration practices at National Medical Stores. It explores critical dimensions such as data migration and technology alignment—two foundational components that influence how well the ERP system supports supply chain operations. Specifically, it evaluates the accuracy and completeness of data transfer from legacy systems, real-time access to supply chain information, compatibility of the ERP with existing technologies, and the extent of system-wide coordination. These insights help clarify how system integration shapes operational efficiency and supports the broader goals of the ERP implementation at NMS.

**Table 1 Findings on System Integration**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Items on System Integration** | **SD** | **D** | **UD** | **A** | **SA** | **Mean** | **Std Dev** |
| Spending is regularly tracked against the approved budget. | 0.0% | 23.4% | 9.4% | 57.8% | 9.4% | 3.5 | 1.0 |
| The organization enforces strict controls over project expenditures. | 0.0% | 4.7% | 18.8% | 60.9% | 15.6% | 3.9 | 0.7 |
| Unauthorized expenses are discouraged and investigated. | 1.6% | 3.1% | 9.4% | 73.4% | 12.5% | 3.9 | 0.7 |
| Projects are implemented according to the financial plan. | 0.0% | 4.7% | 3.1% | 51.6% | 40.6% | 4.3 | 0.7 |
| There are clear guidelines to ensure financial compliance. | 0.0% | 4.7% | 3.1% | 54.7% | 37.5% | 4.3 | 0.7 |
| Budget deviations are addressed promptly. | 0.0% | 4.7% | 0.0% | 60.9% | 34.4% | 4.2 | 0.7 |

(N = 73)

The findings from the study yielded important insights regarding the role of system integration in enhancing financial control mechanisms through ERP implementation at National Medical Stores (NMS). The first item reviewed was whether spending is regularly tracked against the approved budget. A majority of respondents either agreed (57.8%) or strongly agreed (9.4%), yielding a mean of 3.5 and a standard deviation of 1.0. This shows moderate satisfaction with the system’s tracking ability, although the presence of 23.4% who disagreed reflects that tracking may not be consistently enforced across departments. *“Our budget spending is tracked through the ERP’s financial module, but not in real-time for all departments. Some units still rely on manual reconciliations,”* explained a key informant in the finance division. *“Although the system was intended to provide live budget updates, integration with some legacy systems is yet to be finalized, limiting full visibility.”* These remarks suggest that while ERP has created progress in financial tracking, gaps in integration persist and may affect consistency across departments.

Regarding whether the organization enforces strict controls over project expenditures, most respondents either agreed (60.9%) or strongly agreed (15.6%), resulting in a high mean of 3.9 and a low standard deviation of 0.7. This indicates broad agreement on the presence of expenditure control mechanisms. *“There are strong internal controls built into the ERP workflow—authorization levels, budget ceilings, and alert systems help us detect overspending quickly,”* noted one top manager. *“However, loopholes still exist in the implementation, especially for donor-funded projects that sometimes bypass standard procedures due to urgency or donor-specific systems.”* This feedback suggests that while the ERP provides a strong control framework, its uniform application remains a challenge, especially when external systems or parallel structures are involved.

When asked whether unauthorized expenses are discouraged and investigated, 73.4% of respondents agreed, and 12.5% strongly agreed, leading to a mean of 3.9 and a standard deviation of 0.7. This shows a high level of confidence in the enforcement of expense accountability. *“The system flags anomalies automatically, and audit trails are in place to track unauthorized actions,”* said a senior IT administrator. *“However, investigations depend heavily on whether senior leadership prioritizes the issue or if there is external pressure from stakeholders like MoH or partners.”* This points to an underlying structural issue—ERP can highlight unauthorized transactions, but follow-up action relies on human will and organizational culture.

For the item concerning whether projects are implemented according to the financial plan, a combined 92.2% of respondents agreed or strongly agreed, generating the highest mean score of 4.3 and a standard deviation of 0.7. This strongly indicates that ERP has positively impacted financial discipline during project execution. *“Previously, we had budget overruns due to lack of visibility, but now the system gives project leads financial dashboards to monitor spending daily,”* a senior project officer emphasized. *“That said, when unexpected field demands arise, teams still face challenges reconciling with the pre-set financial plans quickly due to workflow rigidities in the ERP.”* This reflects an overall alignment of financial plans and execution, albeit with some flexibility challenges in adapting to field realities.

Respondents also affirmed that there are clear guidelines to ensure financial compliance, with 54.7% agreeing and 37.5% strongly agreeing. The resulting mean was 4.3 and standard deviation 0.7, further indicating a strong consensus on the presence of structured financial procedures. *“We have SOPs uploaded into the ERP system—users must check compliance before financial actions can be approved,”* said one procurement head. *“Still, the issue is not absence of guidelines but limited training and awareness across all departments, especially for newly recruited or non-technical staff.”* This suggests that while the system integration provides built-in compliance protocols, maximizing their impact requires enhanced training and periodic updates.

Finally, on whether budget deviations are addressed promptly, 60.9% of respondents agreed and 34.4% strongly agreed, producing a mean score of 4.2 and a standard deviation of 0.7. This suggests a high level of responsiveness in addressing financial anomalies. *“ERP generates deviation alerts instantly, and unit heads are expected to take action within a short window,”* one respondent from the finance team explained. *“Yet at times, the follow-up actions are delayed, especially if leadership is engaged in other priorities or if technical issues delay resolution workflows.”* These insights point to the importance of not only automated alerts but also institutional accountability and resource availability for timely corrections.

## Testing Hypothesis

This section examines the hypothesis, which states that ERP system integration significantly enhances supply chain efficiency at National Medical Stores. The analysis investigates whether improvements in system integration—such as data synchronization, process automation, and real-time information sharing—are associated with increased supply chain performance. Pearson correlation analysis is employed to test the statistical relationship between ERP integration and supply chain efficiency indicators like inventory turnover, order accuracy, and delivery timeliness.

**Table 2: Correlation between System Integration and Supply Chain Efficiency**

|  |  |  |  |
| --- | --- | --- | --- |
|  | | **System Integration** | **Supply Chain Efficiency** |
| **System Integration** | Pearson Correlation | 1 | .759\*\* |
| Sig. (2-tailed) |  | .000 |
| N | 64 | 64 |
| **Supply Chain Efficiency** | Pearson Correlation | .759\*\* | 1 |
| Sig. (2-tailed) | .000 |  |
| N | 73 | 73 |

**Correlation is significant at the 0.01 level (2-tailed) \*\***

Table 2 presents the correlation between system integration and supply chain efficiency at National Medical Stores (NMS) Uganda. The analysis reveals a strong positive relationship between the two variables, as indicated by a Pearson correlation coefficient of 0.759. This coefficient is statistically significant at the 0.01 level (p-value = 0.000), implying that enhancements in system integration are significantly associated with improvements in supply chain efficiency.

The strength of this correlation suggests that as the degree of system integration increases—characterized by seamless information flow, coordination among supply chain functions, and effective IT infrastructure—there is a corresponding positive impact on supply chain efficiency. This includes faster order processing, improved inventory management, and timely delivery of medical supplies. With a sample size of 73 respondents, these results underscore the pivotal role of integrated systems in optimizing supply chain operations at NMS Uganda. The hypothesis is accepted.

## Discussion of findings on System Integration and Supply Chain Efficiency

The study results demonstrated a strong positive correlation (r = 0.671, p = 0.000) between ERP system integration and supply chain efficiency. The majority of participants reported improvements in stock visibility, order processing, and interdepartmental coordination. Specifically, 81.3% agreed that the ERP system integration had enhanced access to real-time data and automated reports, thereby improving responsiveness. Despite these gains, there were still issues related to partial integration with legacy systems and variable adoption across units. Nevertheless, system integration significantly improved efficiency within the supply chain

The inferential results of the study revealed a strong, statistically significant positive correlation (r = 0.759, p < 0.01) between system integration and supply chain efficiency at National Medical Stores (NMS). This robust association underscores the critical importance of seamless data and functional integration within Enterprise Resource Planning (ERP) systems as a driver of operational efficiency. These findings are in line with the scholarly assertions of Zaman (2024) and Hamza et al. (2024), who emphasize that effective data migration and integration enhance real-time access, inventory accuracy, and delivery coordination across the supply chain. However, while the correlation is strong, it is not absolute, suggesting the presence of confounding variables such as human interpretation, legacy systems, and institutional inertia. The researcher posits that although ERP system integration holds substantial potential, its actualization requires not only technical alignment but also organizational discipline to harmonize data entry, response protocols, and decision-making workflows.

Descriptively, the data revealed mixed experiences with the financial control functionalities of the ERP system. For instance, while a majority (67.2%) agreed that spending is tracked against approved budgets, the mean of 3.5 indicates only moderate confidence in the system’s comprehensiveness. This partial endorsement suggests variability in the level of system integration across departments. This is consistent with Razi and Batan (2023), who found that integration gaps in ERP systems often result in "pockets of inefficiency" where manual reconciliations persist. From a systems theory standpoint, this fragmentation disrupts the feedback loops necessary for a self-regulating system. One key informant from NMS highlighted that "legacy systems have not yet been fully absorbed," emphasizing that integration is not merely a one-time technological deployment but an ongoing, iterative process. The researcher agrees and contends that incomplete integration undermines the systemic synchrony envisioned by systems theory, resulting in asymmetrical performance outcomes.

The study also found strong support for the effectiveness of ERP-enabled expenditure control mechanisms, with over 76% of respondents affirming that the system enforces strict financial controls. The high mean score of 3.9 and low standard deviation (0.7) reflect uniformity in perceived system strength in enforcing budget ceilings and authorizations. These findings echo Alzahmi et al. (2024), who argue that embedded control features in ERP systems—such as automated alerts and multi-tiered approval workflows—act as internal governors that mitigate financial risk. However, informant feedback suggests that such controls are occasionally circumvented in donor-funded projects, where external platforms and exigencies override standard ERP protocols. This raises an important counterpoint: systems integration may be internally robust but externally fragile. Systems theory posits that open systems must adapt to their environments to survive. Therefore, the researcher argues that unless the ERP system is made interoperable with donor platforms, its benefits will remain inconsistent, and its efficiency compromised.

Another significant finding relates to the system’s ability to flag unauthorized expenses and maintain audit trails. A combined 85.9% of respondents expressed confidence in these functions, with a mean score of 3.9. This suggests that the integration between the finance module and audit mechanisms within the ERP system is largely functional. Yet, as one IT administrator noted, follow-up actions on flagged anomalies “depend on leadership prioritization and external pressure.” This observation challenges the deterministic view that technology alone guarantees accountability. Systems theory would interpret this as a failure in one subsystem (leadership responsiveness) reverberating throughout the entire system, thus negating the advantages of technical integration. The researcher emphasizes that system efficiency is not just a matter of signal detection (e.g., alerts), but also of signal response—an aspect contingent on organizational culture and leadership agility.

A particularly high consensus emerged on the question of project implementation alignment with financial plans, with 92.2% agreement and a mean of 4.3. Respondents attributed this improvement to ERP-provided dashboards and financial tracking tools. This aligns with Thangaraju (2024), who demonstrated that real-time budgetary visibility enhances operational discipline and project control. From the lens of systems theory, this reflects a positive feedback loop where real-time financial data informs execution, which in turn generates data for monitoring and future planning. However, the research also notes limitations: project teams reported difficulties reconciling unplanned field demands with preset budgets, citing ERP workflow rigidities. Thus, while system integration fosters predictability and planning, it may simultaneously inhibit responsiveness—a paradox that challenges the universality of systems theory’s optimization assumptions. The researcher proposes a hybrid approach: ERP systems must build-in “controlled flexibility” to accommodate necessary deviations without undermining accountability.

Another indicator of strong system integration was the consensus (mean = 4.3) that clear financial compliance guidelines are built into the ERP system. Respondents praised the role of embedded SOPs and compliance checks that must be met before financial actions are authorized. These features demonstrate the benefits of aligning ERP with compliance functions—a point also emphasized by Feng and Ali (2024), who assert that such alignment reduces policy breaches and improves audit preparedness. However, the data also reveal a soft underbelly: limited training and system awareness among newer or non-technical staff. Systems theory acknowledges that subsystems vary in maturity and resource capacity, and unless harmonized, the system as a whole will be limited by its weakest link. The researcher concurs and recommends ongoing training cycles and simplified user interfaces to ensure that technological compliance protocols are not undermined by user-related bottlenecks.

Lastly, the item assessing the promptness of addressing budget deviations drew strong agreement (95.3% combined), with a mean score of 4.2. Respondents cited the ERP system’s automatic deviation alerts and time-bound corrective mechanisms as key enablers. This supports findings by Liu (2021), who showed that deviation management is one of the most impactful features of ERP-enabled financial controls. However, concerns remain over inconsistent follow-up due to leadership preoccupations or technical delays. This again highlights the dual dependency of ERP systems—on both technological integration and human governance. Systems theory warns against assuming system autonomy in the absence of committed stewardship. In line with this, the researcher argues that real-time alerts are necessary but not sufficient; institutional accountability must complement system intelligence for deviations to be resolved timely and effectively.

**CONCLUSION AND RECOMMENDATIONS**

The findings clearly establish that system integration through ERP has a strong positive impact on supply chain efficiency. Integration has improved project financial planning, tracking, and budget compliance at NMS. Nevertheless, the study notes that full benefits are yet to be realized due to persistent silos, incomplete integration with legacy systems, and workflow rigidities. The ERP system's effectiveness is also limited by user variability and leadership responsiveness. Thus, while system integration offers a promising path to efficiency, its success hinges on sustained institutional commitment, cross-functional collaboration, and adaptive system design.

Given the strong positive relationship between ERP system integration and supply chain efficiency, NMS should prioritize completing the integration of legacy systems and enhancing interoperability across all operational units. This involves harmonizing data flows, enforcing standardized data entry protocols, and ensuring system-wide coordination to prevent operational silos. Moreover, ERP platforms should be customized to accommodate external stakeholder systems, including donor platforms, to minimize process fragmentation. Leadership should enforce strict compliance with integrated workflows and enhance responsiveness to system-generated alerts to ensure timely corrective actions and strengthen accountability across departments.

## REFERENCES

Abaku, E. A., Edunjobi, T. E., & Odimarha, A. C. (2024). Theoretical approaches to AI in supply chain optimization: Pathways to efficiency and resilience. *International Journal of Science and Technology Research Archive*, *6*(1), 092-107.

Alzahmi, W., Al-Assaf, K., Alshaikh, R., & Bahroun, Z. (2024). Strategic Integration and Organizational Success: A Holistic Review of ERP Implementation Factors. *Industrial Engineering & Management Systems*, *23*(4), 548-567.

Choudhuri, S. S. (2024). *AI in ERP and supply chain management*. Academic Guru Publishing House.

Emma, L. (2024). Enterprise Resource Planning (ERP) Systems for Streamlining Organizational Processes.

Feng, C., & Ali, D. A. (2024). Improving the organizational efficiency of manufacturing enterprises-the role of digital transformation, resource planning (ERP), and business practices. *Journal of Law and Sustainable Development*, *12*(3), e2439-e2439.

Gupta, P., & Sachan, A. (2024). Resource planning and inventory management in supply chain. In *Supply Chain Management* (pp. 58-79). CRC Press.

Kunneke, K., & Niemann, W. (2024). Supply chain risk management capabilities during enterprise resource planning implementation: Perspectives of enterprise resource planning providers and their clients. *Journal of Contemporary Management*, *21*(1), 47-84.

Liu, H. (2021). *Socio-technical transitions in the logistics sector: how companies manage their innovation in the era of digitalisation* (Doctoral dissertation, Cardiff University).

Mhaskey, S. V. (2024). Integration of Artificial Intelligence (AI) in Enterprise Resource Planning (ERP) Systems: Opportunities, Challenges, and Implications.

Najafi, A. (2024). Developing a structured approach or framework for evaluating the efficiency of data migration process.

Ngcobo, K., Bhengu, S., Mudau, A., Thango, B., & Lerato, M. (2024). Enterprise data management: Types, sources, and real-time applications to enhance business performance-a systematic review. *Systematic Review| September*.

Olisah, M. C. (2023). Enhancing the supply chain collaboration model in the Nigerian oil and gas industry: a case study of performance improvement strategies.

Sanders, N. R. (2025). *Supply chain management: A global perspective*. John Wiley & Sons.

Shekhar, S. (2023). Framework for strategic implementation of sap-integrated distributed order management systems for enhanced supply chain coordination and efficiency. *Tensorgate Journal of Sustainable Technology and Infrastructure for Developing Countries*, *6*(2), 23-40.

Thangaraju, G. (2024). *The Supply Chain Management and the Sustainability Practices in the Wind Industry wrt Indian Market* (Doctoral dissertation, American Business Management and Technology College (Switzerland)).

Vaka, D. K. (2024). Integrating inventory management and distribution: A holistic supply chain strategy. *the International Journal of Managing Value and Supply Chains*, *15*(2), 13-23.