Journal: Texila International Journal of Management
Publisher: Texila International Journal
ISSN: 2520-310X
Volume 12 Issue 1, 2026
DOI: 10.21522/TIJMG.2015.12.01.Art013

The Effects of Inventory Management on the Performance of Humanitarian Organisations in North Central Nigeria

Ijeoma Kelechi Charles
Department of Management, Texila American University, Guyana, South America

Abstract

Performance comprises all processes, operations and human elements of an organisation. These are facilitated through the right strategies. The purpose of this study is to examine the effects of inventory management strategies on the performance of humanitarian organisations in North-Central Nigeria using the lean and competence theories. The study adopted a descriptive research design, and data were collected using a structured questionnaire. The reliability of the data collection instrument was established using a Cronbach's alpha, and validity was confirmed through validity procedures, face, and content. The target population for the study is 110 supply chain inventory practitioners in humanitarian organisations in North-Central Nigeria. Data was analysed using SPSS and represented through descriptive statistics and inferential analyses. The relationship between inventory management practices and organisational performance was determined through regression analysis. The findings clearly indicate that effective inventory practices positively and effectively affect the performance of humanitarian organisations in North-Central Nigeria. The study recommends that improving staff competence strengthens inventory management, enhancing organisational performance. Additionally, the adoption of inventory management technology helps reduce inventory levels, reducing costs by simplifying procedures and systems, hence improving the performance of humanitarian organisations in North-Central Nigeria.

Keywords: *Inventory Management, Performance of Humanitarian Organisations, Supply Chain Management, Technology Adoption.*

Introduction

Background to the Study

Organisations need to manage their supply chains effectively to thrive in business and remain competitive [1]. A supply chain is an interconnection of organisations and functions linked through services and products offered to the final customer. According to [2], supply chain is constituted by different practices and processes of managing supply chains when put together, is supply chain management [SCM].

Markets are rapidly evolving, hence forcing organisations to adjust to unforeseen fluctuating demands and disruptions [3]. Studies show that supply chain strategies play an important role of improving organisational responsiveness. The responsiveness of an organisation is determined by the way it aligns with its internal business capabilities, supply chain players, and the way their interrelationship patterns the organisation to adapt to changing business activities and conditions [4]. In addition, [5] argued that it is essential for organisations to assess the supply chain strategies they implement and ensure they align with the needs of their organisations. In a study by [2], there is a significant positive relationship between inventory management and the performance of an organisation. [6] also

Received: 22.12.2025 ***Accepted: 12.01.2026*** ***Published on: 27.02.2026***
Corresponding Author: ijeoma224@yahoo.com

stated that competition exists among organisations in the choice of strategies they adopt to increase their inventory turnover. [7] added that to ensure organisations always have stock of goods for customers' fluctuating demands, they need to hold inventory. In addition, they stated that inventory management has positive influence on organisational efficiency and sustainability.

Statement of the Problem

Today's supply chains are volatile and are characterised by uncertainty and business risks. [3] stated that supply chain strategies are pivotal for navigating heightened uncertainty by humanitarian organisations. This is evident as seen during the COVID-19 pandemic, when organisations were challenged with the unexpected spike in demand for essential goods and services, which caused a reduction in an organisation's ability to respond to demand and emergencies [8].

In a study by [9], supply chain management practices such as inventory management influenced 76% of the variation in organisational performance. A similar study by [10] stressed that inventory management practices and demand management have a high impact on the financial performance of an organisation. [11] reiterated that purchasing delays and regular stock-outs are responsible for 74% of the increase in organisational performance. While previous research [10] stated that inventory management supports to improve an organisation's operational performance, the studies do not specify its impact on the performance of humanitarian organisations. This study, therefore, responds to this gap by examining the effect of inventory management strategies on the performance of humanitarian organisations in North-Central Nigeria.

General Objective

The general objective of this study was to determine the effects of supply chain management practices on the performance of humanitarian organisations in North-Central Nigeria.

Specific Objectives

1. To assess the effect of inventory management practices on the performance of humanitarian organisations in North-Central Nigeria.
2. To ascertain the extent of the inventory management practices on the performance of humanitarian organisations in North-Central Nigeria.

Research Questions

1. What is the effect of inventory management practices on the performance of humanitarian organisations in North-Central Nigeria.
2. What is the extent of the effect of inventory management practices on the performance of humanitarian organisations in North-Central Nigeria.

Theoretical Framework

This study adopts the Competence Theory and Lean Theory.

Competence Theory

Competence theory was established by [12] and was defined as the fundamental characteristic of an individual that is responsible for superior performance in each job or situation. Competence theory is important for this research because it is widely accepted that when personnel who handle inventory processes possess the right competencies, they perform more effectively, hence making immense contributions to the outcomes that enhance organisational performance [13].

Lean Theory

Lean theory is linked to Just-in-Time (JIT), which is a system that controls inventory on a pull mechanism rather than the traditional push methods [14]. Lean theory encourages

minimising buffer stock by eliminating waste, hence increasing the profits the organisations make [15]. Hence, the main goal is to optimise inventory control by lowering inventory carrying costs, minimising on-site stock levels, encouraging flexibility in ordering decisions, and improving efficiency.

Conceptual Framework

The conceptual framework is a visual illustration of the independent variables and the dependent variables of the study variables (Figure 1).

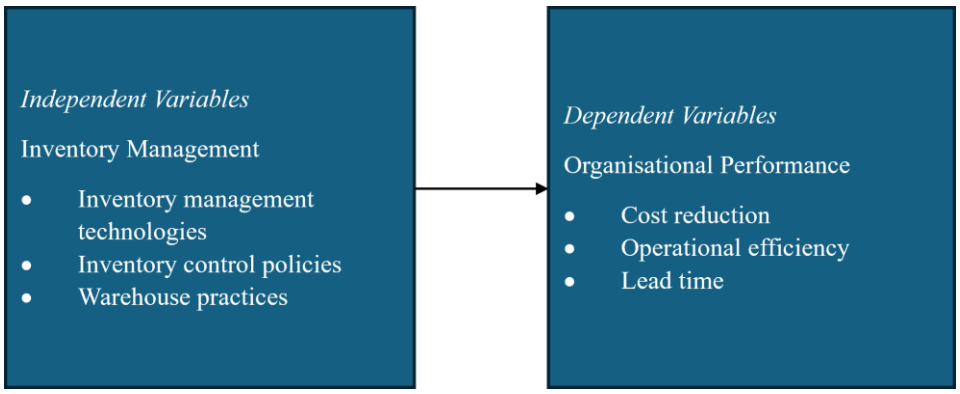

Figure 1. Conceptual Framework for the Effects of Inventory Management on Organisational Performance

Source: Charles, I. K. (2025). Inventory Management and Organisational Performance Model. Texila American University.

Inventory Management

Inventory management is very crucial in an organisation. Efficient and proper management of inventory aids in reducing operational costs and increases the organisation's productivity [16]. Inventory management practices that support the running of inventory processes. First is the adoption of inventory management policies, which are structured frameworks, valuation methods, inventory definitions, procedures for adjustments, classifications, procedures for disposal, and reserves. These policies are structured mainly to enhance organisational performance. They also include procedures for document handling, stock replenishment, inventory level controls, stock taking procedures, internal requisitions, dispatch processes, and the security and organisation of the warehouse.

It is worth noting that inventory policies, if poorly designed and implemented, can result in operational inefficiencies and financial losses [17]. Furthermore, proper documentation is important, as discrepancies may negatively impact the effectiveness of an organisation [16].

Empirical Review

Inventory Management

[18] assessed the factors affecting organisational development of inventory management practices in small and medium enterprises (SMEs). Adopting a descriptive survey, the study presented the role of human resources in inventory management. The study showed that human resources and information systems have positive impact on inventory management. It recommended the update of organisational data and prioritising the development and adoption of inventory management practices.

[19] conducted a study on the effect of inventory management and innovation on organisational performance in Tehran. It adopted a descriptive research design to examine the relationship between technological innovation, inventory management, technological innovation and organisational performance, and inventory management and organisational performance. They concluded that technological innovations have positive influence on inventory management.

Furthermore, [20] investigated the impact of inventory management on the performance of SMEs in Nigeria using the descriptive survey. The finding revealed that inventory management positively affects organisational performance. The authors recommended that organisations should increase the engagement of the management during the development as well as implementation stages for full adoption.

Research Methodology

Research Design

The research adopted a descriptive research design to assess the current situation of the supply chain of humanitarian organisations in North-Central Nigeria. [21] stated that descriptive designs are effectively applicable for expressing characteristics of the variables of the study. Descriptive research designs are appropriate for answering research questions to describe current situations.

Target Population

The target population for the study was 110 inventory management specialists in selected humanitarian organisations in North-Central Nigeria. Inventory and Warehouse Managers across the organisations were used as the unit of observation for data collection.

Sampling Frame, Sampling Technique, and Sample Size

The sampling frame comprised 110 inventory management specialists in selected humanitarian organisations in North-Central Nigeria. Considering the relatively small size of the population, the study maintained a census approach by collecting data from all the members of the population. Census methods are beneficial for a manageable target population and reduce sampling bias and ensure a wide coverage of study elements [22].

Data Collection Instrument

Data collection was done using structured questionnaires. A questionnaire is defined as a tool comprising a series of items designed to obtain relevant information from the participants of the study [23]. In addition, it stated that questionnaires support in eliminating interviewer-related bias and minimize measurement errors that may undermine the validity and reliability of the study results. Furthermore, the questionnaire supported the efficient access to the respondents, as the standardised format reduces biases related to distribution.

Ethical Consideration

Ethical considerations were observed strictly for this study. The topic and purpose of the research were provided to the participants. Participants were requested to fill out the consent section before data was collected. In addition, participants' anonymity and confidentiality were ensured, and they were informed that the data provided was for academic purposes. Finally, participation was voluntary, and respondents could withdraw their participation at any time without being confronted or penalty.

Data Availability

Data for this study were derived from primary sources through structured questionnaires sent out electronically to the participants. The participants comprised inventory and warehouse management practitioners with at least five years of experience in selected humanitarian organisations in North-Central Nigeria. Due to confidential and ethical procedures observed, the datasets are not publicly available.

Contribution of the Author

The study was conceptualised by the author. The methodology, design and structuring of the models were carried out by the author. Furthermore, questionnaires were sent out by the author, as well as data extraction, cleaning, and coding. Formal analysis was also carried out by the author with the support of data analysis specialists to generate data for further

analysis of the results. Finally, the creation, preparation and presentation of the completed published document was done by the author.

Funding for Study

This research was funded by the author's organisation, the International Committee of the Red Cross (ICRC), by making full payment of the tuition fee at the commencement of the PhD program. The organisation was not involved in the study design, data interpretation, or any other processes involved in the preparation of the manuscript for this research.

Pilot Study

A pilot study refers to a pretest. It is a relatively small-scale investigation, preliminarily conducted to examine the practicability, timing, and cost of the research procedure. It also refines the study design before the main data collection is carried out. A pilot test was carried out by the researcher to evaluate the reliability and validity of the questionnaire. The pilot test allowed the permitted the researcher to tackle issues that could have restricted the effectiveness of the results and findings of the study. 10% which is ten participants, participated in the pilot study.

Participants were selected from selected organisations such as Médecins Sans Frontières (MSF), International Committee of the Red Cross (ICRC), Norwegian Red Cross (NRC), World Food Programme (WFP), amongst others, in North-Central Nigeria. Data collected during pre-testing were excluded from the final analysis, and all the participants who participated in the pilot test were excluded from the actual study.

Data Analysis and Presentation

This is the systematic process of organising, interpreting, and presenting data collected [24]. Descriptive statistics, which included frequencies, percentages, means, and standard deviations used to analyse the quantitative data using SPSS software. Inferential statistics, specifically regression and correlation analysis, were used to determine the relationship between inventory management technologies, warehouse practices, and inventory control practices and independent variables and cost reduction, operational efficiency, and lead time reduction as dependent variables. Findings were presented with graphical illustrations and tables extracted from SPSS results. Analysis of variance (ANOVA) presented the statistical significance of the regression model. This was used to ascertain how the changes in the independent variables individually and collectively affect the dependent variable.

Research Finding and Discussion

Descriptive Findings and Analysis

In this section, the result of the descriptive statistical analysis is presented. This includes the mean and standard deviation. The findings are presented according to the objectives of the study.

The main objective of the study was to assess the effect of inventory management on the performance of humanitarian organisations in North Central Nigeria. Table 1 presents the descriptive result, which indicates that all the participants have strongly agreed that their organisations have adopted policies to guide replenishment of stocks, as backed by a mean of 3.8124 and a standard deviation of 0.6372. Participants also agreed that there are safety measures for handling inventory in their organisations, evident by a mean record of 3.7152 and a standard deviation of 0.8325. In addition, the participants agree that organisations adopt inventory enhanced technologies to manage inventory with a mean of 3.5478 and a standard deviation of 0.7389. Furthermore, respondents agreed that their organisations use established policies to dispatch and receive inventory as supported by a mean of 3.4542 and a standard deviation of 0.7281. This also applies to policies related to handling of inventory guidelines and documents on items disposal supported by a

mean of 3.339 and standard deviation of 0.8829. The participants further agreed that their organisations practice standardized warehouse management practices seen with a mean of 3.102 and standard deviation of 0.8073. In addition, inventory practices have a positive effect on the organisations' overall performance as seen by of 3.642 and a standard deviation of 07371. The overall aggregate mean of 3.896 and a standard deviation of 0.7662 affirm that the participants support the response with minimal variation.

Table 1. Inventory Management

Practice	**Mean**	**Std. Deviation**
The organisation has instituted formal policies to guide stock replenishment activities.	3.8124	0.6372
The organisation has safety measures implemented for handling inventory	3.7152	0.8325
The organisation has adopted modern technologies to enhance inventory management processes.	3.5478	0.7389
The organisation has established policies for receiving and dispatch of inventory	3.4542	0.7281
The organisation has policies on the handling of inventory-related documents and guidelines on the disposal of items	3.339	0.8829
The organisation has implemented standardized warehouse management practices.	3.3102	0.8073
Inventory management practices have a positive effect on the organisation's overall performance.	3.3642	0.7371
Aggregate	3.5061	0.7662

Source: Survey Primary Data

Correlation Results

Table 2 shows the correlation analysis. Pearson's correlation coefficient, ranging from -1 to +1, was used because the data was discrete. Positive relationships are recognised by positive coefficients, whereas negative relationships are recognised by negative coefficients.

Table 2. Pearson Correlation Analysis

		Inventory Management	**Performance**
Inventory management	Pearson Correlation	1	
	Sig. (2-tailed):		
	N	150.4	
Performance	Pearson Correlation	0.834**	1
	Sig. (2-tailed)	0.000	
	N	150.4	150.4

Source: Survey Primary Data

The Pearson correlation coefficient for inventory management demonstrated a strong and positive correlation with organisational performance, with a Pearson correlation coefficient of 840.5 and a significance value of 0.000<0.05. This indicates that there is a positive and strong relationship between inventory management practices and organisational performance.

Regression Results

Regression analysis was used to determine the extent or amount of variation to which inventory management (independent variable) influences the performance of humanitarian organisations (dependent variable). Table 3 presents the model summary.

Table 3. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.862a	0.759	0.760	0.2445

a. Predictors: (Constant), Inventory management

Source: Survey Primary Data

The R-squared value of 0.759 indicates that about 75.9% of the variance in organisational performance is explained by inventory management factor. The remaining 24.1% is attributable to other factors not included in the model. The adjusted R-squared value of 0.760 further confirms the model's robustness.

Table 4. Analysis of Variance

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	200.2383	2	100.1196	1551.009	.000b
1 Residual	9.5688	137.7	0.0621		
Total	209.8071	139.5			

a. Dependent Variable: Performance
b. Predictors: (Constant), inventory management
Source: Survey Primary Data

The Analysis of Variance (ANOVA) result in Table 4 demonstrates that the model is statistically significant (F = 1551.009; p = 0.00, < 0.05). Therefore, influence inventory management meaningfully explains variations in the performance of humanitarian organisations in North-Central Nigeria.

Discussion

The findings demonstrate that inventory management practices are well established among humanitarian organisations in North-Central Nigeria and play a significant role in enhancing organisational performance. High mean scores indicate that formal stock replenishment policies, safety measures, and the adoption of modern technologies are widely implemented, reflecting structured and proactive inventory systems.

The strong positive correlation between inventory management and performance confirms that effective control of inventory contributes substantially to improved operational outcomes. Furthermore, the regression results reveal that inventory management explains a large proportion of the variance in organisational performance, underscoring its strategic importance.

The statistically significant ANOVA result further validates the robustness of the model. Overall, these results suggest that strengthening inventory management practices can enhance operational efficiency, cost reduction, and lead time in humanitarian operations.

Conclusion

The study concludes that inventory management practices play a critical role in improving organisational performance. Safety measures, proper stock replenishment policies, warehouse management systems, and technological adoption positively impact the performance of humanitarian organisations.

The consistent adoption of these practices contributes to shorter lead times, lower operational costs, and improved operational efficiency among humanitarian organisations in North Central, Nigeria.

This in turn improves service delivery quality, enhances responsiveness to humanitarian emergencies, increases beneficiary coverage, and promotes more effective utilisation of limited donor and operational resources.

Recommendations

The study recommends the adoption and consistent application of inventory management technologies, warehouse practices and inventory control policies. These practices are essential for maintaining optimal stock levels to reduce stockouts and overstock situations, simplifying internal processes, and ultimately improving organisational performance.

Humanitarian organisations should invest in modern inventory management systems to enhance accuracy, reduce lead times, reduce costs and increase operational efficiency within humanitarian organisations in North Central, Nigeria.

Ethical Approval

This study was conducted in accordance with the ethical standards of Texila American university. Participation in the study was voluntary, and participants gave consent before providing responses for the research.

Conflict of Interest

There is no conflict of interest in collecting data, literature review, and manuscript writing. All processes have been followed ethically and objectively.

Acknowledgement

Sincere gratitude is extended to Prof. Egbunu for his guidance throughout the study. I appreciate the significant knowledge and guidance his experience has given me. Through his supervision, the study's depth and quality have significantly improved. I am incredibly appreciative of his contributions.

References

[1]. Menesha, A. H., & Mwanaumo, E. T., 2023, Supply chain management practice and competitive advantage: Systematic literature review. *Logistic and Operation Management Research (LOMR)*, 2(2), 44–57.

[2]. Adebiyi, S. O., Adediran, A. S., Shodiya, A. O., & Olusola, T., 2021, Supply chain management practices and manufacturing firms' performance: Professionals' experience in Nigeria. *Economics and Culture*, 18(2), 28–40. https://doi.org/10.2478/jec-2021-0012

[3]. Agrawal, S., Agrawal, R., Kumar, A., Luthra, S., & Garza-Reyes, J. A., 2023, Can Industry 5.0 technologies overcome supply chain disruptions? — A perspective study on pandemics, war, and climate change issues. Operations Management Research. *Springer*. DOI: 10.1007/s12063-023-00410-y.

[4]. Razak, G. M., Hendry, L. C., & Stevenson, M., 2023, Supply chain traceability: A review of the benefits and its relationship with supply chain resilience. *Production Planning & Control*, 34(11), 1114–1134. https://doi.org/10.1080/09537287.2021.1983661

[5]. Tiwari, M., Bryde, D. J., Stavropoulou, F., Dubey, R., Kumari, S., & Foropon, C., 2024, Modelling supply chain visibility, digital technologies, environmental dynamism and healthcare supply chain resilience: An organisation information processing theory perspective. *Transportation Research Part E: Logistics and Transportation Review*, 188, 103613. https://doi.org/10.1016/j.tre.2024.103613

[6]. Ogunjimi, J. A., 2020, Corporate social responsibilities and firm performance. *Asian Business Research Journal*, 5, 55–61. https://doi.org/10.20448/journal.518.2020.5.55.61

[7]. Chopra, S., & Meindl, P., 2019, Supply Chain Management: Strategy, Planning, and Operation (7th ed.). *Pearson Education*.

[8]. International Rescue Committee, 2020, 2020 annual report. International Rescue Committee. https://www.rescue.org/sites/default/files/document/6069/2020-irc-annual-report.pdf

[9]. Ng'ang'a, R. W., & Nderui, N., 2025, Supply chain management strategies and performance of humanitarian organisations in Nairobi City County, Kenya. *International Journal of Social Sciences Management and Entrepreneurship*, 9(1), 761–773.

[10]. Badu, J. K., & Vitor, A., 2021, Influence of inventory and demand management on performance in humanitarian firms. *International Journal of Operational Research*, 14(1), 78–95.

[11]. Ng'ang'a, R. W., 2023, Effects of procurement delays and stock-outs on organisation performance. *East African Journal of Supply Chain Research*, 5(4), 102–121.

[12]. McClelland, D. C., & McBer, R., 1985, The leadership motive profile. *McBer & Company*.

[13]. Beer, K., 1990, Inventory Management. London: *SAGE Publication*, Inc.

[14]. Kros, J. F., Falasca, M., & Nadler, S. S., 2016, Performance outcomes and success factors of industrial vending solutions. *International Journal of Operations & Production Management*, 36(10), 1359–1381. https://doi.org/10.1108/IJOPM-01-2015-0034

[15]. Eroglu, C., & Hofer, C., 2011, Lean, leaner, too lean? The inventory-performance link revisited. *Journal of Operations Management*, 29(4), 356–369. https://doi.org/10.1016/j.jom.2010.05.002

[16]. Mowen, M. M., & Hansen, D. R., 2021, Cornerstones of managerial accounting (4th Canadian ed). *Toronto: Cengage Learning Canada*, Inc.

[17]. Rushton, A., Croucher, P., & Baker, P., 2022, The handbook of logistics and distribution management: Understanding the supply chain (7th ed). *London: Kogan Page*.

[18]. Kimanthi, B., 2021, Effects of Inventory Management on the Financial Performance of State Corporations in Kenya, A case of Postbank Kenya. *International Journal of Management and Commerce Innovations*, 3(1), 621-641.

[19]. Koloubandi, A., Mehrmanesh, H., & Norouzi, Y., 2020, The effect of strategic planning and innovation on organizational performance (Case Study: Tehran Municipality). *Croizatia*, 92(2), 64–72.

[20]. Ogidiolu, A., Akinosun, O., & Ajakore, O., 2024, Inventory management practices and SMEs' performance in Lagos State, Nigeria. *International Journal of Research and Innovation in Social Science*, *VIII*(V), 958–979. https://dx.doi.org/10.47772/IJRISS.2024.805068

[21]. Render, B., Stair, R. M., & Hanna, M. E., 2012, Quantitative Analysis for Management, 11th edition. *New Jersey: Prentice Hall*.

[22]. Bernard, H. R., 2011, Research methods in anthropology: Qualitative and quantitative approaches. *Rowman Altamira*.

[23]. Kowalczyk, M., & Buxmann, P., 2015, An ambidextrous perspective on business intelligence and analytics support in decision processes: Insights from a multiple case study. *Decision Support Systems*, *80*, 1–13. https://doi.org/10.1016/j.dss.2015.08.010

[24]. Seltman, H. J., 2014, Experimental design and analysis. Pittsburgh, *PA: Carnegie Mellon University*. Retrieved from http://www.stat.cmu.edu/~hseltman/309/Book/Book.pdf on 2nd December 2025.