Effect of logistics management and organisational performance of manufacturing companies in Rwanda: A case of Africa Improved Food Rwanda Ltd

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ABSTRACT

The general objective of this research is to assess the effect of logistics management on the organizational performance of manufacturing companies. This research was guided by the following specific objectives were to establish the effect of material requirement planning on the performance of Africa Improved Food Rwanda Ltd, assess the effect of inventory control on the performance of Africa Improved Food Rwanda Ltd and assess the effect of transportation and distribution on performance of Africa Improved Food Rwanda Ltd. Three theoretical perspectives including Logistic Management Development Theory, Contingency Theory and Theory of Change were used to explain the outsourcing decision and underpin defining logistic management. The researcher used descriptive and correlational research design basing on a case study, where quantitative approach used. The study population was 68 consisted of finance and administration department, procurement department and Suppliers and sales agents of manufacturing. The researcher used census method rather than sampling due to the small population. The research collected data through questionnaire technique, interview and Documentation technique. The data analyzed by using both descriptive statistics such as frequencies, percentages, mean and standard deviation and inferential statistics such as Pearson's correlation was employed to analyze the data. Statistical package for social sciences (SPSS 25.0) used to determine various correlation and regression analysis. The regression coefficient (B = 0.409) indicates that a 1-unit increase in Material Requirement Planning leads to a 0.409 increase in Organizational Performance, assuming other factors remain constant. The t-value (t = 6.292) is high, indicating a strong statistical impact on the dependent variable. The p-value (Sig. = 0.000) is below 0.05, confirming that the effect of Material Requirement Planning on Organizational Performance is statistically significant. The regression coefficient (B = 0.282) shows that a 1-unit increase in Inventory Control leads to a 0.282 increase in Organizational Performance, holding other variables constant. The t-value (t = 4.476) is also high, demonstrating a notable influence on Organizational Performance. The p-value (Sig. = 0.000) is below 0.05, indicating a statistically significant effect of Inventory Control on Performance of Africa Improved Food Rwanda Ltd. The regression coefficient (B = 0.251) suggests that a 1-unit increase in Transportation and Distribution results in a 0.251 increase in Organizational Performance, assuming other factors remain unchanged. The t-value (t = 3.586) is relatively high, indicating a meaningful contribution to Organizational Performance. The p-value (Sig. = 0.001) is below 0.05, confirming that Transportation and Distribution significantly affect Performance Africa Improved Food Rwanda Ltd. The study concluded that material requirement planning, inventory control, and transportation and distribution have positive and significant effects on the organisational performance of Africa Improved Food Rwanda Ltd., with material requirement planning exerting the greatest influence. Accordingly, the study recommends strengthening material planning, inventory control, and transportation systems to enhance operational efficiency, customer satisfaction, and overall organisational performance.

Keywords: Inventory Control, Logistics Management, Manufacturing Companies, Material Requirement Planning, Organisational Performance, Transportation and Distribution

I. INTRODUCTION

Manufacturing companies operate in organizing procurement as well as offering manufacturing services to clients, in order for these manufacturing companies to be successful and perform better they need to have strong and important logistical services so that activities can be achieved timely and efficiently. Logistics coordinates departments with departments for example finance and transport so that the needs of clients can effectively be met and satisfied. The strength of manufacturing companies depends largely on how string and organized the logistical departments are (Kabera & Mukanyangezi, 2024).

Logistics management is a critical component of organizational performance, particularly within manufacturing companies where the efficiency of supply chains directly impacts productivity and profitability. In Rwanda, manufacturing firms face unique logistical challenges that hinder their operational effectiveness. Inadequate transport management practices further exacerbate logistical inefficiencies within Rwandan manufacturing firms (Izabayo & Nimpano, 2025). Issues such as late deliveries, unreliable transportation schedules, and poorly maintained vehicle fleets contribute to increased operational costs and customer dissatisfaction Failure to address these issues lead to diminished market share and profitability (Gakwaya & Irechukwu, 2022).

Research conducted by Habiyambere and Akumuntu (2025) indicates that 50% of manufacturing firms in Rwanda fail to utilize modern logistics technologies, such as inventory management systems and real-time tracking, which are essential for enhancing efficiency. The underutilization of technology results in suboptimal resource management and increased lead times, further exacerbating issues related to organizational performance.

Inefficient warehouse operations, characterized by inadequate inventory tracking, suboptimal storage layouts, and poor handling procedures lead to increased operational costs and delays in order fulfillment. Research indicates that effective warehouse management is crucial for enhancing supply chain performance in Rwanda's energy sector. Manufacturing companies that fail to implement best practices in warehouse management may experience stockouts, overstock situations, and compromised product quality, all of which negatively impact organizational performance (Umutoni & Akumuntu, 2023).

As highlighted by a study from Bugri et al., (2023), only 40% of manufacturing firms reported having a dedicated logistics strategy that aligns with their overarching business objectives. This misalignment often leads to delays and ultimately affects productivity, with an average reported decline of 15% in output during periods of logistical shortcomings. Additionally, the integration of logistics into the overall supply chain management framework has not been sufficiently realized, causing fragmentation and inefficiency.

Reviewed studies gave different perceptions on effect of logistics management on the organisational performance in other manufacturing companies but left out Africa Improved Food Rwanda Ltd. This research project bridged a knowledge gap by studying how logistics management affects performance of Africa Improved Food Rwanda Ltd.

1.1 Research Objectives

The general objective of this research is to assess the effect of logistics management on the organisational performance of manufacturing companies. The Specific objectives of the study were:

i. To establish the effect of material requirement planning on the performance of Africa Improved Food Rwanda Ltd
ii. To assess the effect of inventory control on the performance of Africa Improved Food Rwanda Ltd.
iii. To assess the effect of transportation and distribution on performance of Africa Improved Food Rwanda Ltd

II. LITERATURE REVIEW

2.1. Theoretical review

The theoretical review explains the theories used to connect material requirement planning, inventory control, and transportation and distribution with organisational performance of Africa Improved Food Rwanda Ltd.

2.1.1 Logistic Management Development Theory

The concept of logistics management started to develop in literature as a scholarly study in the early 1990s. The original view of the logistics has an intra-organisational focus and concentrated primarily on the integration of internal functions of the. There is an agreement in literature on the origin of logistics management as derived from the seminal work of Harrison and Van (2021) on industrial dynamics. However, the interest in logistics management was not shown until 1980s when companies recognised the importance of customer service, reducing time-to-market and extending its boundaries to stay competitive in increasingly globalised (Netshidzivhani, 2025) and competitive markets. The scope of supply chain management has broadened over time to be focused on inter-organisational issues. A large number of terminologies have existed in literature to describe the supply chain management phenomenon such as integrated purchasing strategy, integrated logistics, supplier integration, strategic supplier alliances, supply base management, buyer-supplier partnerships, supply network, supply chain synchronisation, network logistics and supply pipeline management (Chicksand et al., 2012).

Logistics Management Development Theory posited that the evolution of logistics practices directly influences organizational performance and competitiveness (Swanson et al., 2017). In the context of Africa Improved Food Rwanda Ltd, this theory was relevant as it underscored the importance of developing efficient logistics strategies to address the unique challenges faced in the Rwandan manufacturing sector. This theory provided a framework for

understanding how systematic logistics development can contribute to the firm's overall performance and strategic positioning in the marketplace.

2.1.2 Contingency Theory

The Contingency Theory of Leadership was developed by Fred Fiedler in 1958 during his research on the effectiveness of the leader in group situations. Fiedler believed that his effectiveness in leading depends on controlling the situation and the style of Leadership. The theory argues that under different situations, different solutions may prove important (Fiedler, 1964; Fiedler, 2015). Instead of applying common management principles, the theory seeks to demonstrate that different circumstances require different organizational set ups and infrastructure (Galbraith, 2021). Organizations are limited by several factors for example size of the firm, environment and Information technology in applied is logistics management. These contingencies are designed for developing the specific structures and functions of an organization for effective and efficiency logistics management. Lawrence and Lorsch (2022) stated that in order to improve the operational capacity for producing innovative products, a company must alter its organizational features and organize its key factors to form a robust and flexible logistics (Recker & Hu, 2022).

Contingency Theory suggested that there is no one-size-fits-all approach to logistics management; instead, organizations must adapt their logistics strategies based on specific environmental factors and internal capabilities. For Africa Improved Food Rwanda Ltd, this theory illustrated the necessity of considering various contingencies, such as market conditions, supply chain dynamics, and technological advancements when making logistics-related decisions.

2.1.3 Theory of Change

This theory was advanced by Carol Weiss (1995). The main emphasis of the theory is to identify how change is brought about and the people responsible for the change. The theory is currently represented by the logical models and presents how overall logic is used in the intervention. Being in the body of theory of change, it is applied to development evaluation domain. The theory of change is a long-term evaluation framework that describes the flow of inputs and activities of a project into outputs, outcomes and consequently impact. The theory of change does not involve in data collection exercise as an assessment criterion but creates a result framework like that of logical framework (Taplin et al., 2013).

In the context of the study examining the effect of logistics management on the organizational performance of Africa Improved Food Rwanda Ltd, the Theory of Change served as a crucial framework for delineating how specific logistics strategies and interventions can drive desired outcomes. Ultimately, employing the Theory of Change enables Africa Improved Food Rwanda Ltd to strategically align its logistics management practices with its overarching goals for growth and sustainability.

2.2. Empirical review

The empirical review summarizes previous studies related to the three specific objectives of the study and shows how earlier findings connect with the present research.

2.2.1 Material Requirement Planning and Organisational Performance

The findings of the study are anticipated to performance and impact. The study was able to obtain a 75% response rate. The study of the correlation analysis indicated there was strong positive effect of supply chain management in the identification and planning on the program performance while the regression results indicated there is a statistically significant positive of supply chain management on the program performance. The study used only qualitative data; this implies that, there is gap in methodology regarding to quantitative data. Hence, there is also the gap in contextual because the study dealt with both quantitative and qualitative data, and also the gap in context because the study did not mention how each variable of supply chain management and performance contributes to the performance of projects (Munyi, 2024).

Katile (2022) studied on the influence of material storage and maintenance on organisation performance in the private institutions in kilome division, Makueni country, Kenya. The objectives of this study focused on finding out the influence of the material storage and maintenance on organisation performance in terms of quality and efficiency operation environment in Kilome Division of Makueni Country. The study adopted descriptive survey design where four private institutions were selected through simple random technique. The fifth private institution was purposively sampled. Findings showed that that the level of material storage and maintenance provided performance in private institutions in kilome division. Findings showed that material storage and maintenance perform most when motivated employees and their work is appreciated towards organisational performance.

Naude (2013) carried a study on effective material requisition on business performance, the study used both qualitative and quantitative analysis. The primary survey demonstrated that effective material requisition is the purpose of planning, organization leaders are interested to know material requested in a month. Effective material requisition

helps the company control raw materials realizing more operating revenue and reducing supply bottlenecks and raw material shortages. Effective material requisition ensures improved and cost effective flow or resources greater potential for cooperation and customer satisfaction business supplier management and partnerships.

2.2.2 Inventory Control on Organisational Performance

Ndung'u (2021) studied on the influence of inventory management on enterprise performance in Kenya. Specifically, the study sought to establish the influence of inventory management, storage governance, operations and maintenance and monitoring and evaluation of materials on performance. The study adopted a descriptive survey research design. The target population was 413 respondents comprising 400 heads of enterprise, 11 employees and two procurement officers. Proportionate stratified sampling was used to derive a sample of 211 respondents 196 enterprise leaders, 11 employees' members and two procurement officers. Data was collected using a structured questionnaire (for household heads and program committee members), an interview schedule (for enterprise heads and employees) and an interview schedule (for procurement officers). Data analysis and presentation was conducted using descriptive statistics with the help of IBM Statistical Package for Social Scientist (SPSS), Version 20. The study established that inventory management in storage planning had a moderate positive influence on enterprise performance, and assessing materials in monitoring and evaluation had a moderate positive influence on enterprise performance.

Wauters et al. (2014) examined the relationship between risk perception, attitudes toward risk, and risk management practices among farmers. The study found that risk perception and individual attitudes toward risk significantly influence the adoption of risk management strategies. Farmers who perceived higher levels of risk and exhibited greater risk aversion were more likely to implement appropriate risk management measures. The authors concluded that effective risk management requires an understanding of both the objective risks faced by organizations and the subjective perceptions and attitudes of decision-makers. The study further emphasized that policies aimed at improving risk management should account for behavioural factors, as these play a critical role in shaping management decisions and organizational resilience.

Nyang'au *et al*. (2021) add that inventory control is the single most important factor determining the organization's long term market share, profitability and customer satisfaction and therefore this implies there is a direct relationship between inventory control and customer satisfaction.

2.2.3 Transport and Distribution on Organisational Performance

Batista et al. (2019) conducted a comparative study of packaging recovery ecosystems in China and Brazil to examine the development of circular supply chains in emerging economies. Using a comparative case study approach, the authors found that effective packaging recovery systems depend on collaboration among supply chain actors, supportive institutional frameworks, and well-coordinated logistics and reverse logistics processes. The study established that integrating circular supply chain practices enhances resource efficiency, reduces waste, and improves overall supply chain performance. The authors concluded that organizations seeking to improve operational performance should strengthen coordination among supply chain stakeholders and invest in sustainable logistics and recovery systems to support long-term competitiveness.

Bobo (2021) assessed the effect of construction delivery and lead time on the performance of local road contractors in Lusaka District, Zambia. Using a quantitative research approach, the study examined how delays in the delivery of construction materials and extended lead times influence project performance. The findings revealed that timely delivery of construction inputs and effective lead time management significantly improve project completion, cost efficiency, and overall contractor performance. Conversely, delays in material delivery were associated with project cost overruns, schedule slippages, and reduced operational efficiency. The study recommended that contractors strengthen procurement planning, supplier coordination, and logistics management to minimize lead times and enhance project performance.

III. METHODOLOGY

3.1 Research Design

The study used descriptive and correlational research designs based on a case study. The quantitative approach was used to collect numerical data from employees on logistics management and organisational performance of manufacturing companies. The design established the effect of material requirement planning, inventory control, and transportation and distribution on organisational performance in Africa Improved Food Rwanda Ltd.

3.2 Study Population

The study population was 68 respondents from the finance and administration department, procurement department, suppliers, and sales agents of Africa Improved Food Rwanda Ltd. Census method was used because the population was small.

3.3 Sampling and Sample Size

The study employed a census approach rather than sampling. Since the target population consisted of only 68 respondents, all members of the population were included in the study. The census method ensured comprehensive coverage of the study population, minimized sampling error, and enhanced the reliability and validity of the findings.

3.4 Data Collection Instruments

The study used documentation, questionnaires, and interviews. Documents, studies, publications, journals, and policy reports relevant to the subject were reviewed and analyzed, while questionnaires collected responses from staff, customers, and suppliers of manufacturing companies.

Interviews were used to collect detailed views from selected respondents, and the questionnaire used closed-ended questions based on the study variables.

3.5 Validity and Reliability

The Content Validity Index was calculated using 16 items rated as relevant out of 20 items, producing a CVI of 0.8. The questionnaire data were entered in SPSS 25.0, and Cronbach's Alpha values above 80% indicated acceptable reliability of the research instrument.

3.6 Data Analysis

To investigate the effect of logistics management on the organisational performance of manufacturing companies in Rwanda, with reference to Africa Improved Food Rwanda Ltd. The data analyzed by using both descriptive statistics such as frequencies, percentages, mean and standard deviation and inferential statistics such as Pearson's correlation was employed to analyze the data. Statistical package for social sciences (SPSS 25.0) used to determine various correlation and regression analysis.

Descriptive statistics involved the use of means, relative frequencies and standard deviation, tables and other graphical presentations as appropriate used to present the data collected for ease of understanding and analysis. Measurement of variables were used and carried out with the aid of Statistical Package for Social Sciences (SPSS) version 25.

The researcher used correlation analysis to determine the strength between logistics management and organisational performance of manufacturing companies in Rwanda. Multiple linear regressions with multiple regression analysis, examine the effects of multiple predictor variables (rather than a single predictor variable) on the dependent measure.

A multiple regression model used to test the significance of the effect of independent variables on the dependent variables. Based on this, these models were used to test the effects of each predicator such as material planning, inventory control and transportation on organisational performance of manufacturing companies, the regression model adopted as the analytical model for research.

Model Specification

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$$

Where : Y = Organisational Performance
β_0 = Model Constant
β_1-β_3 = Model Coefficients
ε = Error Term (unknown random error assumed as normally distributed)
X_1 = Material Requirement Planning
X_2 = Inventory Control
X_3 = Transportation and Distribution

The researcher assured respondents of anonymity and the information given was treated professionally and for the purpose of the study anonymity of the respondents by coding them instead of reflecting the names was used. Confidentiality is the standards that were applied in order to help protect the privacy of research participants. The researcher kept privacy of the respondent by meeting them where they prefer.

IV. RESULTS & DISCUSSION

This section presents and discusses the findings on the effect of logistics management on organisational performance at Africa Improved Food Rwanda Ltd. The results are presented using descriptive and inferential statistics, including tests of normality, correlation analysis, regression analysis, analysis of variance (ANOVA), and hypothesis testing.

Table 1

Test of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Organisational Performance	0.194	68	0.079	0.924	68	0.061

a. Lilliefors Significance Correction

Source: Field Data (2025)

Table 1 presents the results of the normality test for organisational performance. The Kolmogorov–Smirnov test ($p = 0.079$) and the Shapiro–Wilk test ($p = 0.061$) were both statistically non-significant ($p > 0.05$), indicating that the data were approximately normally distributed. Therefore, the assumption of normality was satisfied, justifying the use of parametric statistical techniques, including Pearson's correlation and multiple regression analysis.

Table 2

Correlations Matrix Results

		Material Requirement Planning	Inventory Control	Transportation and Distribution	Organisational Performance
Material Requirement Planning	Pearson Correlation	1	.533**	.565**	.790**
	Sig. (2-tailed)		0	0	0
	N	68	68	68	68
Inventory Control	Pearson Correlation	.533**	1	.530**	.713**
	Sig. (2-tailed)	0		0	0
	N	68	68	68	68
Transportation and Distribution	Pearson Correlation	.565**	.530**	1	.702**
	Sig. (2-tailed)	0	0		0
	N	68	68	68	68
Organisational Performance	Pearson Correlation	.790**	.713**	.702**	1
	Sig. (2-tailed)	0	0	0	
	N	68	68	68	68

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

Source: Field Data (2025)

From the correlation matrix Table 2, the results indicate a strong positive correlation ($r = 0.790$, $p = 0.000$) between Material Requirement Planning and performance of Africa Improved Food Rwanda Ltd. Since the p-value (0.000) is below 0.05, the relationship is statistically significant. The findings show a strong positive correlation ($r = 0.713$, $p = 0.000$) between Inventory Control and Performance of Africa Improved Food Rwanda Ltd. The p-value (0.000) is below 0.05, confirming that the relationship is statistically significant. The analysis reveals a strong positive correlation ($r = 0.702$, $p = 0.000$) between Transportation and Distribution and performance of Africa Improved Food Rwanda Ltd, with a p-value (0.000) below 0.05, the relationship is statistically significant.

Overall, the findings confirm that all three logistics management components Material Requirement Planning, Inventory Control, and Transportation and Distribution have a strong positive and statistically significant relationship with performance of Africa Improved Food Rwanda Ltd. The positive relationship between material requirement planning and organisational performance corroborates the findings of Bobo (2021), who reported that effective planning and timely delivery of materials significantly improve project performance. Similarly, Habiyambere and Akumuntu (2025) found that effective inventory planning enhances supply chain performance in manufacturing firms.

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.887[a]	0.787	0.777	0.12714	1.621

a. Predictors: (Constant), Transportation and Distribution, Inventory Control, Material Requirement Planning
b. Dependent Variable: Organisational Performance
Source: Field Data (2025)

Table 3 shows R value (0.887) represents the multiple correlation coefficient, which indicates the overall strength of the relationship between the independent variables and the dependent variable. The R-Square value (0.787) indicates that 78.7% of the variation in Organizational Performance can be explained by the independent variables (Material Requirement Planning, Inventory Control, and Transportation and Distribution). This means that logistics management accounts for a significant proportion of performance improvement at Africa Improved Food Rwanda Ltd. The Durbin-Watson statistic (1.621) is within the acceptable range, it suggests that there is no severe autocorrelation, confirming that the regression assumptions are valid. In agreement with Mena and Nalwaya, (2022) A logistic management is the network of all the individuals, organizations, resources, activities and technology involved in the creation and sale of a product. A logistics encompasses everything from the delivery of source materials from the supplier to the manufacturer through to its eventual delivery to the end user.

Table 4
ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.813	3	1.271	79.438	.000[b]
	Residual	1.034	64	0.016		
	Total	4.848	67			

a. Dependent Variable: Organisational Performance
b. Predictors: (Constant), Transportation and Distribution, Inventory Control, Material Requirement Planning
Source: Field Data (2025)

The Analysis of Variance (ANOVA) in Table 4 evaluates the overall significance of the regression model used to assess the effect of logistics management components (Material Requirement Planning, Inventory Control, and Transportation and Distribution) on Organizational Performance at Africa Improved Food Rwanda Ltd. The ANOVA test determines whether the independent variables collectively explain a significant proportion of the variation in the dependent variable. The F-statistic (F = 79.438) measures the overall strength of the regression model. A higher F-value indicates that the model significantly explains the variation in the dependent variable (Organizational Performance). The p-value (Sig. = 0.000) is well below the significance threshold of 0.05, confirming that the regression model is statistically significant. This means that the combination of Material Requirement Planning, Inventory Control, and Transportation and Distribution significantly influences organizational performance. In line with Olaniyan et al. (2020) Logistics management has become a major component of business success and performance globally, traditionally, logistics has been seen as an instrumental activity directly associated with transportation or handling.

Table 5
Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	0.289	0.277		1.043	0.3		
	Material Requirement Planning	0.409	0.065	0.468	6.292	0	0.605	1.653
	Inventory Control	0.282	0.063	0.322	4.476	0	0.639	1.565
	Transportation and Distribution	0.251	0.07	0.267	3.586	0.001	0.608	1.645

a. Dependent Variable: Organisational Performance
Source: Field Data (2025)

$$Y = \beta 0 + \beta 1X1 + \beta 2X2 + \beta 3X3 + e$$

From Table 5, the regression equation derived is:

Organizational Performance=0.289 + 0.409 (Material Requirement Planning) + 0.282 (Inventory Control) + 0. 251 (Transportation and Distribution) + 0.277

The regression analysis revealed that all three logistics management practices had a positive and statistically significant effect on organisational performance at Africa Improved Food Rwanda Ltd. Material requirement planning had the strongest positive effect on organisational performance ($\beta = 0.409$, $p < 0.001$), followed by inventory control ($\beta = 0.282$, $p < 0.001$) and transportation and distribution ($\beta = 0.251$, $p = 0.001$). These findings indicate that while all dimensions of logistics management significantly contribute to organisational performance, material requirement planning exerts the greatest influence.

The significant effect of material requirement planning is consistent with Bobo (2021), who found that effective planning of material deliveries and lead time management significantly improve project performance by reducing delays, enhancing operational efficiency, and ensuring timely completion of activities. The findings suggest that effective material requirement planning enables manufacturing firms to optimize resource utilization, minimize stock-outs, and improve production continuity, thereby enhancing organisational performance.

The positive effect of inventory control supports the findings of Habiyambere and Akumuntu (2025), who reported that effective inventory management significantly improves supply chain performance through enhanced inventory accuracy, optimal stock levels, and operational efficiency. The present findings imply that maintaining effective inventory control systems enables manufacturing firms to reduce inventory-related costs, improve product availability, and strengthen overall organisational performance.

Similarly, the positive and significant effect of transportation and distribution is consistent with the findings of Izabayo and Nimpano (2025), who established that transport management practices significantly enhance organisational performance through improved delivery reliability and operational efficiency. The findings are further supported by Bugri et al. (2023), who concluded that effective logistics management contributes to improved organisational productivity and competitiveness. In addition, Batista et al. (2019) emphasized that efficient logistics coordination and distribution systems enhance supply chain performance by facilitating the timely movement of products and strengthening coordination among supply chain partners. Collectively, these findings underscore the importance of transportation and distribution in improving customer satisfaction, operational efficiency, and organisational performance.

Table 6

Hypotheses Test

Null Hypotheses	Sig. level	Decision
H_{01}: There is no significant effect of material requirement planning on performance of Africa Improved Food Rwanda Ltd.	p<0.05	Rejected
H_{02}: There is no significant effect of inventory control on performance of Africa Improved Food Rwanda Ltd	p<0.05	Rejected
H_{03}: There is no significant effect of transportation and distribution on performance of Africa Improved Food Rwanda Ltd.	p<0.05	Rejected

Source: Field Data (2025)

The hypothesis testing was conducted to determine whether the independent variables (Material Requirement Planning, Inventory Control, and Transportation and Distribution) have a statistically significant effect on Organizational Performance at Africa Improved Food Rwanda Ltd. The significance level (p-value) was set at 0.05, meaning that if $p < 0.05$, the null hypothesis (H_0) is rejected, confirming a significant effect of the variable on performance.

V. CONCLUSION & RECOMMENDATIONS

5.1 Conclusion

The study concludes that Material Requirement Planning significantly improves organizational performance at Africa Improved Food Rwanda Ltd. Effective material planning enhances decision-making, reduces lead time, prevents stock-outs, and improves product quality, leading to improved business efficiency. The strong statistical relationship between Material Requirement Planning and Organizational Performance highlights its critical role in ensuring operational success. Organizations that invest in structured material planning processes are more likely to experience higher productivity, reduced costs, and better resource utilization.

The study concludes that Inventory Control is a key determinant of Organizational Performance. Proper inventory management reduces holding costs, improves stock accuracy, enhances demand forecasting, and strengthens financial management. The strong correlation and regression results indicate that businesses with efficient inventory control systems experience improved cash flow, reduced operational risks, and better customer satisfaction. It is evident that maintaining accurate inventory records and optimizing stock levels are essential strategies for enhancing performance of Africa Improved Food Rwanda Ltd.

The study concludes that Transportation and Distribution play a significant role in Performance of Africa Improved Food Rwanda Ltd. A well-managed transportation system ensures cost efficiency, product quality maintenance, timely delivery, and accurate distribution, all of which enhance customer satisfaction and business success. The findings suggest that companies with strong logistics and distribution networks minimize operational inefficiencies, reduce transportation costs, and improve overall service delivery. Efficient transportation and distribution strategies are essential for achieving higher performance of Africa Improved Food Rwanda Ltd

5.2 Recommendations

Based on the findings, the study recommends that management should support procurement officers in material planning to minimize stock-outs and ensure inventory levels are aligned with market demand. In addition, the company should strengthen inventory control practices within the procurement department, as the current inventory control system has not adequately improved product quality.

Furthermore, management should ensure that the transport department delivers company goods in good condition to both existing and potential customers. This should be complemented by ensuring that goods are transported to the correct destinations in a timely manner, thereby enhancing customer satisfaction, strengthening customer relationships, and improving overall service delivery.

5.3 Suggestion for further research

Future research may explore additional logistics management dimensions such as warehousing technology, supplier integration, logistics information systems, and cold chain management in manufacturing companies in Rwanda.

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Declaration of Interest

The authors declare that they do not have any known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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