

LOGISTICS MANAGEMENT ADOPTION AND MARKETING PERFORMANCE OF FOOD AND BEVERAGE INDUSTRIES IN RIVERS STATE.

Huoma Stella Johnson-Woke
&
D.C Igani (Ph.D)
Marketing Department,
Ignatius Ajuru University of Education,
Port Harcourt Rivers State.
Dukoye.igani@iaue.edu.ng

Abstract

This study examined the relationship between logistics management adoption and marketing performance of food and beverage industry in Rivers State. Two objectives, two research questions and two hypotheses were formulated to guide the study. This study adopted the correlation survey research. The population of the study comprised 30 food and beverage firms in Port Harcourt. Based on the population of the study. The study adopted a census approach with a focus on the staff (transport manager, distribution manager and warehousing manager). To ascertain the respondents, the questionnaire was distributed in batches of three (3) copies per headquarter branch. A total of ninety (90) copies of the questionnaire were distributed. Copies of the questionnaire were administered and distributed to the management staff of food and beverage firms in Port Harcourt. The reliability of the study was tested using the Cronbach Alpha method. The study employed the Spearman Rank-order Correlation Coefficient for testing the hypotheses formulated for the study. The findings of the study established that transport cost showed a positive and significant relationship with profitability growth of food and beverage industry in Rivers State. It also confirmed that warehouse cost showed a positive and significant relationship with profitability growth of food and beverage industry in Rivers State. It was concluded that logistics management cost is a precursor to profitability growth of food and beverage industry in Rivers State. The study recommends that food and beverage firms should incorporate transport management (vehicle scheduling and route planning) in their operations processes and warehouse management strategy such as just-in-time (JIT) should be used to manage the warehouse.

Keyword: Logistics Management Adoption, Management Performance, Transport Cost, Warehouse Cost and Profitability Growth

Introduction

The food and beverage industry constitutes a significant component of Nigeria's manufacturing sector, contributing substantially to employment generation and industrial output. It accounts for a large share of industrial value-added and provides livelihoods for millions of Nigerians, making it a critical driver of economic development (Taofeek & Muhammad, 2024). Despite its importance, the sector faces numerous operational challenges such as high production costs, infrastructural deficits, and intense competition, which necessitate efficient management practices particularly in logistics and supply chain operations (Taofeek & Muhammad, 2024).

Logistics management, which involves the planning, implementation, and control of the movement and storage of goods from point of origin to consumption, plays a crucial role in enhancing organizational performance. Effective logistics systems especially transportation, warehousing, and distribution have been identified as strategic tools for improving service delivery, reducing operational costs, and increasing sales growth (Bagshaw, 2017). In the

context of food and beverage firms, logistics activities are particularly important due to the perishable nature of products and the need for timely distribution.

One of the major components of logistics management is cost control, especially inventory-related costs such as ordering, holding, and stock-out costs.

Studies have shown that inefficient inventory management leads to increased operational expenses, which negatively affect profitability growth. Conversely, efficient inventory systems can significantly enhance financial performance by minimizing waste and ensuring optimal stock levels (Okeke & Ehichoya (2025). Empirical evidence further indicates that inventory flow management contributes positively to profitability growth, explaining a substantial proportion of variations in firms' return on assets (Ebirien & Ohaka, 2020).

In addition to inventory management, other logistics activities such as procurement, transportation, and supplier relationship management have been found to influence cost efficiency and organizational performance. For instance, effective procurement practices and strategic supplier partnerships have been shown to improve supply chain performance through cost reduction and operational flexibility in food and beverage firms in Rivers State (Akekue & Obieniu 2025). Similarly, strategic sourcing and supplier collaboration enhance operational efficiency and financial outcomes in the industry (Owuso et al 2025).

Within Rivers State, which is one of Nigeria's major economic hubs with a growing industrial base, the performance of food and beverage firms is closely tied to how well logistics operations are managed. The state's dynamic business environment and infrastructural challenges make logistics cost management a critical determinant of profitability growth. Studies in the region have highlighted that logistics optimization and supply chain practices directly influence cost efficiency, waste reduction, and overall firm performance (Ateke, et al. 2025). Furthermore, logistics management practices such as third-party logistics and reverse logistics have been linked to improved market performance and operational outcomes in food and beverage firms operating in Port Harcourt and its environs (Igani et al 2025).

Despite the growing body of literature on logistics and supply chain management, there remains a need to specifically examine how logistics management costs influence profitability growth within the food and beverage industry in Rivers State. Many existing studies have focused on broader supply chain performance or isolated aspects such as inventory or procurement, leaving a gap in understanding the comprehensive impact of logistics cost components on financial performance.

Therefore, this study seeks to fill this gap by investigating the relationship between logistics management adoption and management performance in the food and beverage industry in Rivers State. It aims to provide empirical insights that will assist managers and policymakers in developing cost-efficient logistics strategies that enhance profitability growth and ensure sustainable growth in the sector.

Statement of the Problem

The food and beverage industry in Rivers State plays a crucial role in economic development through production, employment generation, and supply of essential consumer goods. However, firms in this sector are increasingly confronted with rising operational costs, particularly those associated with logistics activities such as transportation, inventory management, warehousing, and distribution. These logistics-related costs have become a major concern due to infrastructural deficiencies, inefficient distribution networks, and supply chain complexities within the region.

Logistics management is widely recognized as a strategic function that enhances operational efficiency and organizational performance. Effective logistics systems contribute to timely delivery, cost reduction, and improved customer satisfaction. However, when logistics operations are inefficient, they lead to increased costs, delays, and wastage, which can

negatively affect firm profitability growth (Bagshaw, 2017). In the food and beverage industry, where products are often perishable and time-sensitive, poor logistics management can result in spoilage, stock-outs, and loss of revenue.

In Rivers State, empirical studies have shown that firms continue to struggle with supply chain inefficiencies and cost-related challenges. For instance, research indicates that logistics optimization is essential for achieving cost reduction, waste minimization, and efficient resource utilization among fast-moving consumer goods distributors in the state (Ateke et al, 2025). Similarly, procurement and supply chain practices have been found to significantly influence cost efficiency and operational performance of food and beverage firms in the region (Akekue & Obienu, 2025). Despite these findings, many firms still experience high logistics costs that erode profit margins and reduce competitiveness. Furthermore, inventory-related logistics costs such as ordering, holding, and stock-out costs have been identified as critical factors affecting financial performance. Inefficient inventory management increases operational expenses and reduces profitability growth, whereas effective inventory control enhances cost minimization and revenue stability (Ebirien & Ohaka 2020). This suggests that logistics cost components are directly linked to the profitability growth outcomes of firms. Therefore this study tend to investigate the relationship between logistics management adoption and management performance in the food and beverage industry in Rivers State.

Conceptual/ Operational Framework

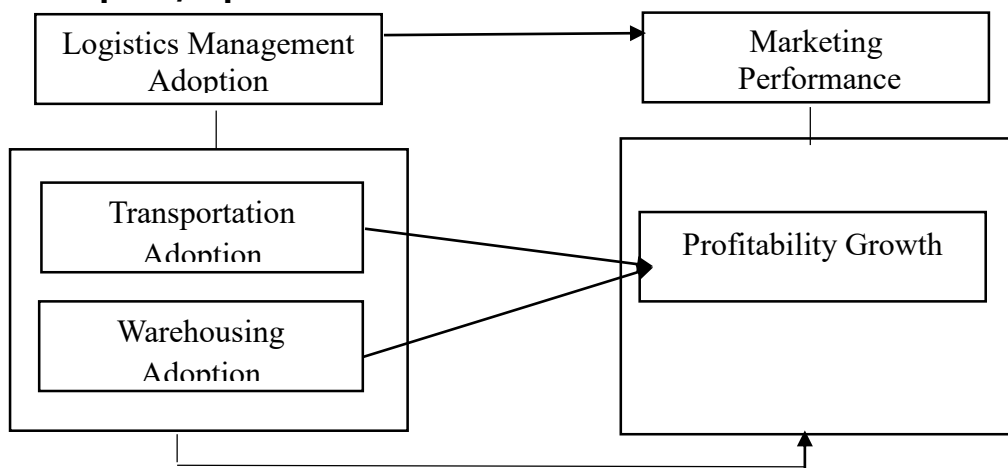


Figure 1.1: Conceptual framework of logistics management adoption and management performance Industry in River State.

Source: Taofeek & Muhammad (2024).

Aim and Objectives of the Study

The aim of this study is to examine the relationship between logistics management adoption and management performance in the food and beverage industry in Rivers State. The specific objectives are as follows: to

- i. examine the relationship between transportation adoption and profitability growth of food and beverage industry in Rivers State.
- ii. determine the relationship between warehousing adoption and profitability growth of food and beverage industry in Rivers State.

Research Questions

The following research question guided the conduct of the study

- i. What is the relationship between transportation adoption and profitability growth of food and beverage industry in Rivers State?
- ii. What is the relationship between warehousing adoption and profitability growth of food and beverage industry in Rivers State?

Research Hypotheses: The following Research Hypotheses are formulated and as thus;

H01 There is no significant relationship between transportation adoption and profitability growth of food and beverage industry in Rivers State

H02 There is no significant relationship between warehousing adoption and profitability growth of food and beverage industry in Rivers State

Literature Review

Concept of Logistics Management Adoption

Logistics is the process of planning, implementing and controlling procedures for the efficient and effective transportation and storage of goods including services and related information from the point of origin to the point of consumption for the purpose of conforming to customer requirements, and it includes inbound, outbound, internal and external movements (Lambert & Stock, 2008). Logistics management is a subset of supply chain management which is involved in planning, executing and controlling the seamless and timely flow as well as storage of products, services and relevant information from source or origin to the place of consumption in order to satisfy the requirements of customers (Amin & Shahwan, 2020). To Abdul et al. (2019), logistics management is a supply chain management component that is used to meet customer demands through the planning, control and implementation of the effective movement and storage of related information, goods and services from origin to destination.

Logistics management helps companies reduce expenses and enhance customer service. (Fugate et al., 2010). Logistics encompasses all of the information and material flows throughout an organization. It includes everything from the movement of a product or from a service that needs to be rendered, through to the management of incoming raw materials, production, the storing of finished goods, its delivery to the customer and after-sales service (Ittmenn & King, 2010). The commonality of the recent definitions in logistics is that it is a process of moving and handling goods and materials, from the beginning to the end of the production, sale process and waste disposal, to satisfy customers and add business competitiveness (Tseng et al., 2005).

Logistics management cost refers to the total expenses incurred in planning, implementing, and controlling the efficient movement and storage of goods, services, and related information from the point of origin to the point of consumption. These costs are associated with various logistics activities such as transportation, warehousing, inventory management, order processing, packaging, and distribution. Logistics cost is a critical component of overall operational cost and plays a significant role in determining the profitability growth and competitiveness of an organization.

According to Christopher (2016), logistics cost encompasses all expenditures related to the flow and storage of goods within the supply chain, and effective management of these costs is essential for achieving competitive advantage. Similarly, Ballou (2004) defines logistics cost as the sum of all costs incurred in providing customer service, including transportation, warehousing, inventory carrying, and order processing costs. These definitions emphasize that logistics cost is not limited to a single activity but is a combination of multiple interrelated cost elements within the supply chain.

Transportation adoption

Transportation adoption is a major component of logistics management cost and refers to the expenses incurred in moving raw materials, work-in-progress, and finished goods from one location to another within the supply chain.

It plays a critical role in determining the efficiency of logistics operations and significantly influences the overall cost structure and profitability growth of firms. According to Ballou (2004), transportation adoption represents the charges associated with the physical movement of goods between different points in the supply chain, and it often accounts for the largest share of total logistics costs. Similarly, Christopher (2016) describes transportation adoption as a key driver of supply chain efficiency, emphasizing that effective transportation management can reduce total logistics cost while improving customer service levels.

Nyaberi and Mwangangi (2014) explained that the movement of goods from the point of production to the point of consumption is done through various modes of transportation. Depending on the transportation load, number of delivery points, existing distribution centres, product value, frequency of delivery, urgency and the cost economics, different types of networks are used. Transportation adoptions are influenced by several factors, including distance, mode of transport, fuel prices, shipment size, infrastructure quality, and delivery urgency. In developing economies such as Nigeria, transportation adoption is often higher due to poor road networks, traffic congestion, and fluctuating fuel prices, all of which increase the cost of moving goods across locations.

Warehousing adoption

Warehousing adoption is an essential component of logistics management cost and refers to the expenses incurred in storing goods from the point of production until they are needed for distribution or sale. It involves all costs associated with the operation and maintenance of storage facilities, including handling, security, utilities, and administrative activities. Warehousing plays a critical role in ensuring the availability of goods, maintaining product quality, and facilitating efficient distribution within the supply chain.

According to Gurtu (2021), warehousing adoption includes all expenses related to the storage and handling of goods, such as facility costs, labor, and inventory handling charges. Similarly, Chen (2025), defines warehousing adoption as the cost incurred in holding inventory within a storage system while ensuring that goods are preserved and readily accessible for distribution. These definitions highlight that warehousing is not merely about storage but also involves value-adding activities that enhance supply chain efficiency.

Marketing Performance

Marketing performance refers to the effectiveness and efficiency with which managers utilize organizational resources human, financial, and material to achieve set goals and objectives. It encompasses the ability of management to plan, organize, lead, and control organizational activities in a way that maximizes productivity and ensures long-term sustainability.

According to Kotler (2011), performance is fundamentally about achieving results through people by setting clear objectives and ensuring that organizational efforts are aligned toward those goals. Similarly it is emphasized that effective management performance is grounded in core functions such as planning, organizing, commanding, coordinating, and controlling.

Management performance is a critical determinant of organizational effectiveness and success. It reflects how well managers coordinate resources, make decisions, and lead teams to achieve desired outcomes. By integrating both financial and non-financial measures, organizations can gain a comprehensive understanding of managerial effectiveness and continuously improve performance.

Profitability growth

Profitability growth is a fundamental concept in business and financial management that refers to the ability of an organization to generate earnings relative to its costs, expenses, and resources over a given period. It is a key indicator of a firm's financial health, efficiency, and long-term sustainability. Profitability growth shows how well a company utilizes its resources to produce profit and is often used by managers, investors, and stakeholders to evaluate business performance.

According to Brigham and Houston (2019), profitability growth is the net result of a firm's operating policies and decisions, reflecting how effectively a company manages its revenues and expenses. Ross et al. (2016) define profitability growth as the firm's ability to generate profit from its assets and operations, indicating the efficiency of management in utilizing available resources. Profitability growth is commonly measured using financial ratios, which provide insight into different aspects of a firm's performance.

Profitability growth is influenced by several factors, including cost management, pricing strategies, operational efficiency, and market conditions. In the context of logistics management, controlling logistics costs such as transportation, warehousing, and inventory costs is essential for improving profitability growth. High logistics costs reduce profit margins, while efficient logistics systems enhance cost savings and revenue generation.

Empirical studies have shown that effective cost management practices, particularly in logistics and inventory systems, have a significant positive impact on profitability growth. For example, efficient inventory management reduces holding costs and minimizes waste, thereby improving financial performance (Ebirien & Ohaka, 2020). Similarly, logistics optimization has been linked to improved operational efficiency and increased profitability growth in manufacturing firms (Ateke et al., 2025). In the food and beverage industry, profitability growth is especially sensitive to cost fluctuations due to the perishable nature of products and the need for efficient distribution systems. Poor cost management can lead to spoilage, wastage, and reduced revenue, while effective logistics and operational strategies can enhance profitability growth and competitiveness.

In Rivers State, firms in the food and beverage sector must continuously strive to improve profitability growth by managing logistics costs effectively, optimizing operations, and adapting to environmental challenges such as infrastructural constraints and fluctuating input costs. Profitability growth is a crucial measure of organizational success, reflecting the ability of a firm to generate returns from its operations. Effective management of logistics costs is essential for enhancing profitability growth and ensuring long-term sustainability in the food and beverage industry.

Theoretical Review

Coordination Theory

The study was anchored on the coordination theory. The coordination theory is a body of principles about how activities can be coordinated, that is, about how actors can work together harmoniously (Hewitt, 1986). There are theories, concepts, and results from many different fields that could both contribute to and benefit from the development of such general theories. For instance, it is clear that questions about how people coordinate their activities are central to parts of organization theory, sociology, social psychology, anthropology, linguistics, law, and political science. Important parts of economics and management science also analyze how people can coordinate their work with a special focus on rational ways of allocating resources (Miller et al., 1988). Smith (1981) explains that in the coordination theory, the common problems have to do with coordination: How can overall goals be subdivided into actions? How can resources be allocated among different actors? How can information be shared among different actors to help achieve the overall goals? In its attempts to find generalizations that

apply across disciplines and across levels of analysis, coordination theory resembles earlier work on systems theory and cybernetics. Many researchers agree that the major components of coordination include goals, activities, actors and interdependencies (Huberman, 1988). It is worth noting that Logistics management involves fulfilment of various organizational goals, by performing several activities (inbound logistics, outbound logistics, warehousing, distribution, materials handling, etc) so as to serve the customers profitably. Such logistic activities are interdependent and they have to be well coordinated for the firm to succeed.

Empirical Review

Christian et al (2024) examined the relationship between logistics management and operational efficiency of Food and Beverage Firms in Port Harcourt. Two objectives, two research questions and two hypotheses were formulated to guide the study. This study is anchored on the positivist research paradigm; this study adopted the correlation survey research. The population of the study comprised 30 food and beverage firms in Port Harcourt. Based on the population of the study, which is 30 food and beverage firms, the study adopted a census approach with a focus on the staff (inventory manager, distribution manager and warehousing manager). To ascertain the respondents, the questionnaire was distributed in batches of three (3) copies per headquarter branch. A total of ninety (90) copies of the questionnaire were distributed. Copies of the questionnaire were administered and distributed to the management staff of food and beverage firms in Port Harcourt. The reliability of the study was tested using the Cronbach Alpha method. The study employed the Spearman Rank-order Correlation Coefficient for testing the various hypotheses formulated for the study. The findings of the study established that transport management showed a positive and significant relationship with operational efficiency of food and beverages firms in Port Harcourt. It also confirmed that inventory management showed a positive and significant relationship with operational efficiency of food and beverages firms in Port Harcourt. It was concluded that logistics management is a precursor to operational efficiency of food and beverages firms in Port Harcourt.

The study recommends that food and beverage firms should incorporate transport management (vehicle scheduling and route planning) in their operations processes and inventory management should be enhanced as it will help to improve productivity within the organization

Chen, (2025) examined the correlation between the efficiency of logistic warehouses and costs, specifically in the domain of environmentally conscious supply chain administration. A quantitative research approach was used for gathering data through a survey instrument based on a questionnaire. The survey was conducted among employees of logistics warehouses in China, and subsequent data analysis was conducted using statistical methodologies. The findings indicate significant positive correlations between logistics warehouse efficiency and factors such as warehouse layout and design; inventory management and material flow; loading, unloading, and sorting of goods; shipping and distribution processes; and green supply chain management. Similarly, logistics warehouse costs show significant positive correlations with factors such as energy consumption, labor costs, waste disposal and environmental remediation costs, inventory holding costs, and green supply chain management. The findings underscore the significance of sustainable practices, offering valuable insights for logistics management practitioners.

Ganiyu and Sulaiman (2024) examined the effect of transport management on delivery speed; evaluate the influence of inventory management on organisational productivity; and ascertain the effect of information flow management on operational efficiency. Coca-Cola Nigeria Plc, and Cadbury Nigeria Plc, Lagos State were purposively selected for the study, and the study's population includes 883 employees of the studied firms. Two hundred and seventy-five (275)

employees were selected using a simple random sampling technique. The survey data collected were analysed using descriptive statistics to achieve the mean and frequency distribution percentage of data collected, and an inferential statistical tool (linear regression analysis) was used to test the study hypotheses with the aid of SPSS version 26. The findings of the study showed that transportation management affected delivery speed with an R-value of 0.605; that there was a strong relationship between inventory management and organisational productivity with an R-value of 0.811, and that there was a strong relationship between information flow management and operational efficiency with a Pearson correlation value of 0.796. This study, therefore, recommended that factors associated with logistics management need to be considered by the organisations in their strategic plans as it will contribute significantly to the sustainable development of the Nigeria economy.

Igani and Garba (2025) investigated logistic operation management and business success of maritime firms in Port Harcourt the objective of the study was to determine the relationship between logistic operation management and business success of the maritime firms in Port Harcourt. This research question was posed and two [2] research hypotheses were raised to guide the conduct of the study. The population of the study comprised of 110 managers of the maritime firms in Port Harcourt. The correlation research design was adopted for in the study, and spearman rank order correlation was used to test SPSS version 2.0. the result of the study was that there is a significant strong and positive relationship between logistics operation management and business success of maritime firms in Port Harcourt, based on the results, the finding were that, there is a significant strong and positive relationship between materials handlings with profitability growth and markets have growth, we therefore, concluded that there is a strong and positive relationship between operations manufactured and business success of maritime firms in Port Harcourt, we therefore recommended that firms should adopt modern material, handlings technologies to enhance their capacity for manufacturing goods efficiently, which will contribute to both the market share and probity.

Methodology

This study adopted the correlation survey research. Correlation survey research is a non-experimental research in which the researcher measures two variables and assesses the statistical relationship between them. The population of the study comprised 30 food and beverage firms in Port Harcourt, culled from www.directory.org.ng. Based on the population of the study, which is 30 food and beverage firms, the study adopted a census approach with a focus on the staff (transport manager, distribution manager and warehousing manager). To ascertain the respondents, the questionnaire was distributed in batches of three (3) copies per headquarter branch. A total of ninety (90) copies of the questionnaire were distributed. Copies of the questionnaire were administered and distributed to the management staff of food and beverage firms in Port Harcourt. The reliability of the study was tested using the Cronbach Alpha method, the result stood at 0.87 higher than the benchmark of 0.70. The study employed the Spearman Rankorder Correlation Coefficient for testing the various hypotheses formulated for the study with the aid of the Statistical Package for Social Sciences (SPSS) Version 23.0.

Analysis and Interpretation

Bivariate Analysis

Hypothesis 1

H₀₁: Transportation adoption does not have significant relationship with profitability growth of food and beverage industry in Rivers State.

Correlation Analysis Showing the Relationship between transportation adoption and profitability growth of food and beverage industry in Rivers State.

Correlations

| | | | Profitability growth | Transportation adoption |
|----------------|-------------------------|-------------------------|----------------------|-------------------------|
| Spearman's rho | Profitability growth | Correlation Coefficient | 1,000 | .793 |
| | | Sig. (2-tailed) | | .000 |
| | | N | 80 | 80 |
| | Transportation adoption | Correlation Coefficient | .793 | 1,000 |
| | | Sig. (2-tailed) | .000 | |
| | | N | 80 | 80 |

** . Correlation is significant at the 0.05 level (2-tailed).

The result in table above shows that spearman's rank correlation coefficient (rho) is calculated at 0.79. The value is significant; hence it suggests that a strong relationship exist between transportation adoption and profitability growth. The positive sign of this correlation coefficient gives the evidence that profitability growth is positively related to transportation adoption of Food and beverage industry in Rivers State, i.e. an effective management of Transportation adoption is likely to generate high profitability growth in Food and beverage industry in Rivers State. Given the significant 2-tail value (PV) = 0.000 < 0.01, the researcher therefore rejects the null hypothesis of no significant relationship between transportation adoption and profitability growth, and conclude that a significant relationship exist between them.

Hypothesis 2

H₀₂: Warehousing adoption does not have significant relationship with profitability growth of Food and beverage industry in Rivers State.

Correlation Analysis Showing the Relationship between Warehousing adoption and Profitability growth of Food and beverage industry in Rivers State.

Correlations

| | | | Profitability growth | Warehousing adoption |
|----------------|----------------------|-------------------------|----------------------|----------------------|
| Spearman's rho | Market Share | Correlation Coefficient | 1,000 | .616 |
| | | Sig. (2-tailed) | | .000 |
| | | N | 80 | 80 |
| | Warehousing adoption | Correlation Coefficient | .616 | 1,000 |
| | | Sig. (2-tailed) | .000 | |
| | | N | 80 | 80 |

** . Correlation is significant at the 0.05 level (2-tailed).

The result in table above shows that spearman's rank correlation coefficient (rho) is calculated at 0.61. The value is significant; hence it suggests that a strong relationship exist between warehousing adoption and profitability growth. The positive sign of this correlation coefficient gives the evidence that profitability growth is positively related to warehousing

adoption of Food and beverage industry in Rivers State, i.e. an effective management of warehousing adoption is likely to generate high profitability growth in Food and beverage industry in Rivers State. Given the significant 2-tail value (PV) = 0.000 < 0.01, the researcher therefore rejects the null hypothesis of no significant relationship warehousing adoption and profitability growth, and conclude that a significant relationship exists between them.

Discussion of Findings

From the analysis carried out, it was discovered that transport cost showed a positive and significant relationship with profitability growth of food and beverages industry in Rivers State. This finding is supported by the study of Abdul et al. (2019) who submitted that transportation management had significant positive influences on organizational performance of Dangote Flour Mills, and also Musau et al. (2017) who concluded that Transport Management has a significant effect on organizational performance which is measured by effectiveness.

Again, the analysis revealed that warehouse cost showed a positive and significant relationship with profitability growth of food and beverages industry in Rivers State. This finding is supported by the study of Anichebe and Agu (2013) who concluded that there is a significant relationship between good inventory management and organizational productivity. The third hypothesis was able to measure the impact of information flow management on Employees efficiency. Also, Ristovska et al. (2017) conducted a study to explore the impact of logistics management strategies on the performance of manufacturing companies. The study found that inventory management, storage and warehousing management, transportation management and information management had significant positive impacts on the performance of Macedonian manufacturing companies

Conclusion

This study examined the relationship between logistics management adoption and management performance of food and beverages industry in Rivers State.

Recommendations

In line with the findings and conclusion, the study recommends that:

1. Food and beverage firms should incorporate transport management (vehicle scheduling and route planning) in their operations processes.
2. Warehouse management strategy such as just-in-time (JIT) should be used to manage the warehouse.

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