

Physical Distribution Strategies and the Marketing Performance of Bottled Water Companies in Calabar, Nigeria

Dr. Eyo Emmanuel Essien¹ & Edim Eka James²

^{1,2}Department of Marketing, University of Calabar, Nigeria

Correspondence: jamesedim@gmail.com

Abstract

<https://doi.org/10.57233/gijmss.v7i1.05>

This research examined the effect of physical distribution strategies on the marketing performance of bottled water companies in Calabar. It employed a cross-sectional survey approach. Primary data were collected from 276 operational personnel of bottled water companies in Calabar through a structured questionnaire. Descriptive statistics were applied to analyze and interpret the data, while multiple linear regression was utilized to test the hypotheses. The results unveiled significant positive impacts of order processing, transportation, inventory, and warehousing management on the marketing performance of bottled water companies in Calabar, Nigeria. Therefore, the study recommends the following, among others: bottled water companies should integrate innovative technologies into their order processing systems, such as automated order placement, and order sorting software to ensure the delivery of accurate and personalized orders to customers at all times; a robust transportation management system characterized by timely carrier scheduling, clear route planning and automated carrier tracking should be in place to enable bottled water companies achieve effective distribution of products to customers when needed; and bottled water companies should prioritize inventory management through strategic inventory planning, automated inventory control and prompt inventory replacement to ensure that inventory resources required for production and customer service are consistently available in appropriate quantities and quality.

Keywords: Physical distribution, Transportation management, Warehouse management, Inventory management, Order processing

1. Introduction

Marketing performance refers to the effectiveness and efficiency with which a company's marketing efforts achieve its objectives. It involves measuring and evaluating the outcomes and impact of marketing activities on various key performance indicators (KPIs) such as sales revenue, market share, customer acquisition, customer retention, brand awareness, and customer satisfaction (Smith, 2020). Sustained improvement of marketing performance is crucial for business continuity, especially in manufacturing and processing companies. By consistently improving marketing effectiveness, companies can differentiate their products and services, attract more customers, and increase their market share. In recognition of the importance of marketing performance, manufacturing companies in Nigeria have applied several marketing strategies with the aim of

Physical Distribution Strategies and the Marketing Performance of Bottled Water Companies in Calabar, Nigeria strengthening their performance in the face of market challenges. One prominent strategy popular among bottled water processing companies in Nigeria is physical distribution (Adesina et al., 2019; Ibrahim et al., 2021; Odumosu et al., 2018; Ajayi et al., 2020; Ahmed et al., 2017).

According to Gupta (2022), physical distribution, alternatively termed logistics or supply chain management, encompasses the strategic coordination of planning, executing, and overseeing the flow and retention of goods from their inception to their utilization. This encompasses a spectrum of tasks, including but not limited to transportation, storage, inventory oversight, order completion, and customer support. However, the focus of this inquiry pertains specifically to strategies concerning order processing, transportation, inventory control, and warehouse administration. In the views of Acero *et al.* (2019), order processing management entails strategically planning, coordinating, and ensuring the efficient elicitation, organization, and delivery of customers' orders to meet their needs. Transportation management encompasses overseeing the inbound flow of materials into a company and the outbound movement of finished products and services to various consumer locations, all aimed at satisfying customer demands (Speranza, 2018). According to Kritchanhai and Meesamut (2015), inventory management is characterized by continuous planning, coordination, and control of raw materials, work-in-progress, and finished goods, aimed at maintaining optimal inventory levels, while preventing issues such as overstocking, understocking, and unforeseen stock-outs. Also, warehouse management entails guaranteeing the presence and operational efficiency of necessary facilities to safely and securely store inventory, facilitating its readiness for future sales or production purposes (Mao et al., 2018).

Around the world, bottled water companies, like most manufacturers, apply these physical distribution strategies to ensure the availability of products required to meet customers' expectations. As a developing country, manufacturing and processing companies in Nigeria face various practical, environmental, and operational challenges in their physical distribution operations on a daily basis (Obasi, 2023). Particularly, limited access to modern transportation, warehousing and inventory management facilities poses challenges for bottled water companies in their physical distribution activities. This leads to storage issues, increased handling costs, and difficulties in maintaining product quality and availability, which ultimately poses serious difficulties for bottled water companies as they try to move inventory and other input materials across the country to satisfy customer demands. Furthermore, inadequate tracking and tracing systems and a lack of

Physical Distribution Strategies and the Marketing Performance of Bottled Water Companies in Calabar, Nigeria

real-time data integration make it challenging for water processing companies in Nigeria to monitor the movement of goods along the supply chain. This lack of visibility hampers their ability to optimize inventory levels, anticipate demand, and make timely adjustments to production and distribution plans. Consequently, these practical challenges, such as poor transportation infrastructure and inadequate warehousing, result in higher transportation and storage costs for Nigerian water processing companies. This leads to production delays, stockouts, and customer dissatisfaction as well as the inability to meet customers' demand on a consistent basis. However, there is very limited research on the contributions of these physical distribution strategies to the marketing performance of bottled water companies in Calabar, Cross River State, despite the fact that they are currently in use by the companies. Without comprehensive insights into how these strategies affect marketing performance of bottled water companies in Calabar, managers may struggle to optimize their operations effectively. As such, insufficient empirical evidence hampers their ability to make informed decisions regarding resource allocation, process improvement, and overall strategic planning with respect to physical distribution. Consequently, this leads to a risk of inefficiency, missed opportunities, and potentially reduced competitiveness among bottled water companies in the market.

Therefore, this study examined the prospects of physical distribution strategies to mitigate marketing inefficiencies encountered by bottled water companies in Calabar, Cross River State. The specific objectives of the study are to: examine the effect of order processing management on the marketing performance of bottled water companies; assess the effect of transportation management on the marketing performance of bottled water companies; ascertain the effect of inventory management on the marketing performance of bottled water companies; determine the effect of warehouse management on the marketing performance of bottled water companies.

Based on that the following hypotheses are formulated:

H₁: Order processing management has a significant effect on the marketing performance of bottled water companies in Nigeria.

H₂: Transportation management has a significant effect on the marketing performance of bottled water companies in Nigeria.

H₃: Inventory management has a significant effect on the marketing performance of bottled water companies in Nigeria.

H4: Warehouse management has a significant effect on the marketing performance of bottled water companies in Nigeria

Therefore, through hypotheses testing, the outcome of this study will contribute to existing knowledge on physical distribution by determining the contributions of strategies such as order processing management, transportation management, inventory management, and warehouse management to the marketing performance of bottled water companies in Calabar, Cross River State. Furthermore, examine this research objectives is crucial for managers in Calabar's bottled water industry to enhance their understanding and improve their company's performance in a highly competitive market landscape. The paper's structure comprises a comprehensive literature review, methodology, data analysis, discussion of findings, conclusion and recommendations.

2. Literature Review

2.1 Conceptual Review

Physical Distribution

The concept of physical distribution, also known as logistics management, encompasses the process of transferring goods from the manufacturer to the final destination (Ahmed et al., 2017). This plays a crucial role in the broader supply chain, overseeing the coordination of goods, information, and financial transactions. Physical distribution encompasses various elements, including transportation, warehousing, inventory management, and shipping. According to the Council of Supply Chain Management Professionals (CSCMP), physical distribution is defined as the set of activities concerned with the efficient and effective movement of goods from the point of production to the point of consumption (Ajayi et al., 2020). This definition underscores the significance of physical distribution in supply chain management, ensuring the timely and cost-effective delivery of goods to the end consumer. This is critical for companies that operate in highly competitive markets where delivery time and cost are significant factors in customer decision-making (Kritchanhai & Meesamut, 2015). Through efficient management of physical distribution, organizations have the opportunity to enhance customer satisfaction, boost sales, and foster brand loyalty. Additionally, Mao *et al.* (2018) asserted that beyond its influence on customer satisfaction, physical distribution plays a crucial role in determining the cost of goods sold (COGS). The expenses associated with physical distribution constitute a substantial portion of the COGS, and adept management of physical distribution holds the potential to curtail these expenditures. This can be accomplished by

Physical Distribution Strategies and the Marketing Performance of Bottled Water Companies in Calabar, Nigeria optimizing transportation routes, minimizing inventory holding costs, and adopting lean inventory management practices (Müller *et al.*, 2018).

Marketing Performance

Marketing performance refers to the assessment of the efficiency and triumph of a company's marketing endeavors in fulfilling its business aspirations and targets (James & Inyang, 2022). In essence, marketing performance is an assessment of how well a company's marketing strategies are performing and how they are contributing to the overall success of a business. According to Liu and Bai (2011), marketing performance refers to "the extent to which a firm's marketing activities are fulfilling its objectives". It encompasses a range of activities, from creating awareness of a brand, product, or service, to generating prospects, leads, and sales. It also takes into account customer satisfaction, retention, and loyalty, and overall profitability (Sheth *et al.*, 2018). In the views of Vargo and Lusch (2020), the importance of marketing performance lies in its ability to provide insights into a company's strengths and weaknesses. By measuring marketing performance, businesses can obtain valuable information on what is working well and what needs to be improved, in order to optimize their marketing strategies and achieve better results. Similarly, Thompson (2019) opined that in today's highly competitive business environment, measuring marketing performance has become increasingly crucial for businesses to thrive and succeed. Moreover, Smith (2020) observed that as marketing budgets continue to grow, marketing managers are under pressure to demonstrate their return on investment (ROI) and justify their expenditures. The higher the ROI, the more effective the marketing strategy is considered to be. Aside from ROI, businesses utilize various key performance indicators (KPIs) to gauge marketing effectiveness, including customer acquisition cost (CAC), customer lifetime value (CLV), brand recognition, and customer satisfaction (Sheth *et al.*, 2018). These measures offer a comprehensive perspective on how marketing initiatives influence diverse facets of a company.

Order Processing Management and Marketing Performance

Order processing management refers to the systematic approach used by a business to handle the orders of customers from the time they are received until they are delivered (Acero *et al.*, 2019). Effective order processing management requires efficient communication between these departments and a well-designed system to track the orders through each stage of the process. The order processing cycle starts with the entry of the order by the customer (Ajayi *et al.*, 2020). Once the order is entered, it is processed by the organization and passed to the relevant department for picking and packing. The order is then shipped and delivered to

Physical Distribution Strategies and the Marketing Performance of Bottled Water Companies in Calabar, Nigeria

the customer. Each stage of the process is critical and requires attention to detail to ensure the customer receives the correct order and within the specified time. As such, Kritchanhai and Meesamut (2015) opined that the role of order processing management is to improve marketing performance by ensuring the customer experience is seamless and enjoyable. The preceding perspective underscores the pivotal role of efficient order processing management in enhancing organizational marketing effectiveness. This assertion finds support in various research studies. For instance, Odumosu *et al.* (2018) demonstrated a noteworthy positive correlation between order processing management and the operational performance of fashion accessories manufacturers in Lagos and Ogun States, Nigeria. Similarly, Al-Majed *et al.* (2023) revealed a substantial positive impact of order processing management on the marketing performance of manufacturing firms in Kuwait. Gupta (2022) affirmed this correlation, highlighting the significant positive influence of order processing management on the operational performance of Indian manufacturing enterprises. Furthermore, Ibrahim *et al.* (2021) found empirical evidence of the beneficial effects of order processing management on customer satisfaction among manufacturers of fast-moving consumer goods in Lagos. Al-Dmour *et al.* (2022) similarly observed a significant positive relationship between order processing management and the marketing performance of manufacturing companies in Jordan.

Transportation Management and Marketing Performance

Transportation management refers to the coordination of different transportation modes, processes, and logistics to ensure that goods, information, or people are transported efficiently and effectively from one point to another (Müller *et al.*, 2018). The primary goal of transportation management is to reduce transportation costs, improve delivery times, enhance customer satisfaction, and increase supply chain efficiency (Ongoro & Nyabuti, 2022). According to Mugambi and Muthami (2021), transportation management plays a crucial role in improving the marketing performance of businesses. Similarly, Abdelhakim and Salem (2023) maintained that transportation management provides businesses with real-time visibility and tracking of their shipments, enabling them to manage their transportation operations effectively. By tracking shipment status, businesses can respond proactively to potential delays, manage resources efficiently, and improve overall transportation performance. The aforementioned perspective indicates that efficient management of transportation plays a pivotal role in enhancing the marketing performance of organizations. This standpoint finds support in research conducted by Gupta (2022), which demonstrated a notable beneficial impact of transportation management on the operational performance

Physical Distribution Strategies and the Marketing Performance of Bottled Water Companies in Calabar, Nigeria of manufacturing companies in India. Similarly, the findings of Al-Dmour *et al.* (2022) corroborate this view, highlighting the positive influence of transportation management on the marketing performance of manufacturing firms in Jordan. Furthermore, Al-Majed *et al.* (2023) uncovered a similar positive association between transportation management and the marketing performance of manufacturing companies in Kuwait. These results echo those of Tanaka *et al.* (2023), who identified a significant positive correlation between transportation management and the marketing performance of manufacturing companies in Japan.

Inventory Management and Marketing Performance

Inventory management refers to the process of ensuring that a business has sufficient stock of finished goods, raw materials, components to meet its business needs and customer demand (Ibrahim & El-Sherbeny, 2021). This process involves monitoring and controlling stock levels, tracking inventory turnover, and optimizing inventory purchasing and warehousing operations. Similarly, Al-Kahtani and Al-Atawi (2022) added that a critical role of inventory management is to optimize inventory turnover, which comprises the number of times a business sells or replaces its inventory during a specified period. The higher a business's inventory turnover, the shorter its inventory holding period, which means that it can reduce the amount of capital tied up in inventory, and free up more cash flow for investment or growth activities (Al-Duaij & Al-Shayea, 2021). In another view, James and Inyang (2022) observed that inventory management can also help businesses to minimize waste, reduce costs, and improve profitability. By identifying slow-moving or obsolete inventory items, businesses can take steps to either liquidate or dispose of them, freeing up valuable warehouse space and reducing storage costs. This can help to reduce overall costs and improve margins, which can translate into higher profits and better marketing performance (Wasike & Juma, 2020). The preceding perspective emphasizes the pivotal role of efficient inventory management in enhancing the marketing performance of organizations. This viewpoint finds support in research conducted by Ibrahim *et al.* (2021), indicating a notable positive correlation between inventory management and customer satisfaction among fast-moving consumer goods manufacturers in Lagos. Similarly, Al-Majed *et al.* (2023) demonstrated a significant positive association between inventory management and the marketing performance of manufacturing companies in Kuwait. Additionally, Adesina *et al.* (2019) revealed a significant positive impact of inventory management on the supply-chain performance of Nigerian manufacturing firms. These findings echo those of Tanaka *et al.* (2023), which highlighted a significant positive relationship

Warehouse Management and Marketing Performance

Warehouse management refers to the processes and activities involved in the storage, inventory control, and distribution of goods within a warehouse facility (Kirui & Nondi, 2017). Efficient management of warehouses is paramount for the prosperity of any enterprise involved in handling tangible goods. This oversight guarantees timely availability of appropriate products in correct amounts and optimal condition, thereby supporting operational success. According to Adesina *et al.* (2019), one of the key roles of warehouse management in improving marketing performance is timely and accurate order fulfillment. Customers today have high expectations when it comes to order fulfillment, with many expecting their orders to be delivered within a day or two. In addition, Wasike and Juma (2020) observed that warehouse management also plays a crucial role in reducing costs and improving profitability, which ultimately translates into improved marketing performance. By streamlining warehouse processes, optimizing staffing levels, and utilizing technology such as automation and advanced analytics, businesses can reduce the costs associated with inventory holding, logistics, and order fulfillment. This, in turn, allows businesses to offer more competitive pricing, and invest in marketing and promotional activities that can drive customer acquisition and retention (Ibrahim *et al.*, 2021). The aforementioned perspective indicates that efficient warehouse management plays a crucial role in enhancing organizational marketing outcomes. This assertion finds support in various studies. For instance, Adesina *et al.* (2019) demonstrated that effective warehouse management positively impacted the supply-chain performance of manufacturing firms in Nigeria. Similarly, Odumosu *et al.* (2018) found a significant positive correlation between warehouse management and the operational performance of fashion accessories manufacturers in Lagos and Ogun States, Nigeria. Likewise, Al-Dmour *et al.* (2022) revealed a substantial positive influence of warehouse management on the marketing performance of manufacturing companies in Jordan. This corroborates findings from Al-Majed *et al.* (2023), which highlighted the positive impact of warehouse management on the marketing performance of Kuwaiti manufacturing firms. Additionally, Tanaka *et al.* (2023) confirmed a significant positive relationship between warehouse management and the marketing performance of manufacturing companies in Japan. Therefore, we propose the following hypothesis:

2.2. Theoretical Framework

The theoretical foundation of this study lies in the resource-based view theory, introduced by Barney (1991), which serves as a managerial framework for identifying strategic resources capable of providing a competitive edge to a company. The resource-based view (RBV) theory, as elucidated by Barney (1991) is a management concept concentrating on internal organizational resources and capabilities as determinants of competitive advantage. It asserts that a company's distinctive blend of tangible and intangible resources, coupled with its organizational competencies, dictates its potential for achieving lasting competitive advantage and superior performance. The primary assertion of the RBV theory is that a company's resources and capabilities play a pivotal role in its performance and success (Barney, 1991; Helfat & Peteraf, 2003). The theory is relevant to organizational resource utilization as it emphasizes the need for firms to carefully identify, develop, and leverage their unique resources and capabilities to gain a competitive edge (McGahan, 2021). By understanding their resource strengths and weaknesses, organizations can make informed decisions about resource allocation, investment, and utilization. It encourages firms to focus on building and leveraging their distinctive capabilities rather than solely relying on external market conditions or industry factors. Moreover, Davis and DeWitt (2021) maintained that the RBV theory suggests that resources and capabilities should be aligned with the firm's strategy, and that effective resource utilization involves deploying resources in a way that supports the organization's goals and objectives. This may include investing in developing new capabilities, acquiring or divesting resources, or forming strategic alliances to access complementary resources. In this study, the relevance of the RBV theory is that it highlights the importance of internal resources and capabilities (such as physical distribution strategies) in shaping the competitive advantages of bottled water companies. It provides a framework for understanding how bottled water companies can strategically manage their resources and physical distribution capabilities to create value, sustain their competitive position, and achieve superior performance in the water processing and marketing industry. This study was therefore conducted to determine whether or not the utilization of organizational capabilities like physical distribution could improve the marketing performance of bottled water companies in Nigeria.

2.3. Research Model Conceptualization

The research investigated the physical distribution strategies and the marketing performance of bottled water companies operating in Nigeria. Its aim was to

Physical Distribution Strategies and the Marketing Performance of Bottled Water Companies in Calabar, Nigeria

understand how physical distribution strategies could influence marketing performance within the Nigerian bottled water industry. To achieve this, a thorough examination of relevant academic literature was conducted to determine the key parameters for assessing the relationship between these variables. Drawing insights from existing research, this study identified order processing management, transportation management, inventory management, and warehouse management as proxies for physical distribution. Marketing performance, the dependent variable, was assessed through metrics such as customer order fulfillment, repeat patronage, market share, and customer loyalty. Order processing involved the systematic planning, coordination, and execution of customer orders to ensure timely delivery and meet their needs. Transportation management encompassed the oversight of material movement into the companies and distribution of finished products to consumers. Inventory management focused on the coordinated planning and control of raw materials, work-in-progress, and finished products to maintain optimal inventory levels for production and customer service. Warehouse management ensured the availability and functionality of storage facilities to securely store inventory for future sales or production. Based on prior empirical evidence, the study hypothesized a correlation between physical distribution strategies and the marketing performance of bottled water companies. A conceptual model (Fig. 1) adapted from previous research was used to illustrate this hypothesized relationship within the specific context of the study. From the model, the parameters of the independent variable (order processing, transportation, inventory and warehouse management) were adapted from James and Inyang (2022); Kirui and Nondi (2017); Wasike and Juma (2020). Whereas the parameters of the dependent variable, marketing performance – customer order fulfillment, repeat customer patronage, market share and customer loyalty were adapted from Hamid et al. (2021); Smith (2020).

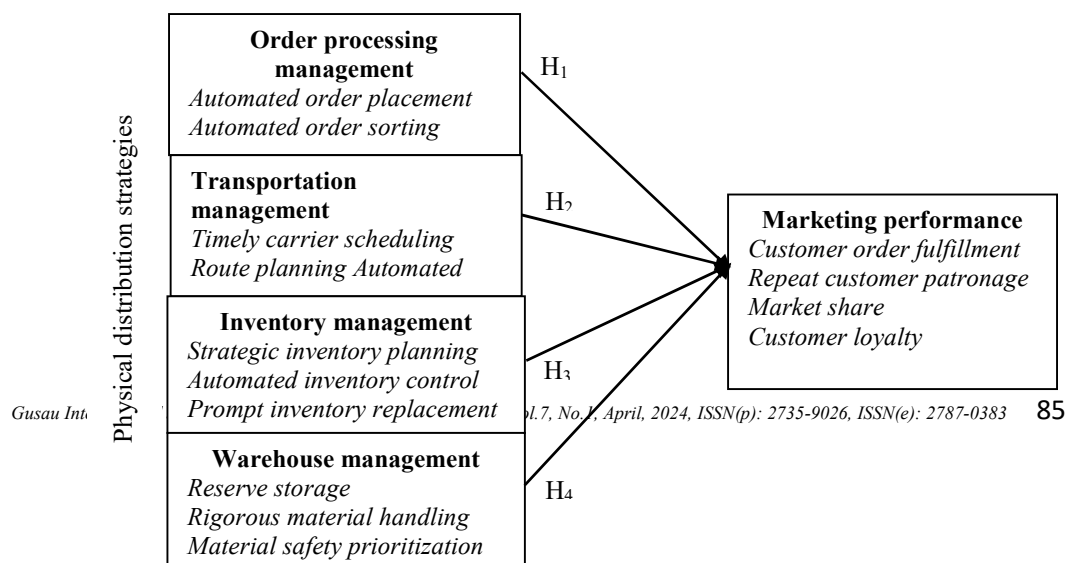


FIG. 1: Conceptual model of the study

Source: Parameters adapted from existing relevant studies

3. Methodology

Research Design

This research utilized a cross-sectional survey design, employing a structured questionnaire to gather data from managerial and executive staff of bottled water companies in Nigeria. Unlike longitudinal studies, which collect data repeatedly over time, this approach involved a one-time data collection process from participants within a brief timeframe, streamlining the effort and time required for data gathering.

Population and Sample Size

This study was conducted in Calabar, Cross River State, and ideally, it should have accommodated all bottled water companies in this city, but records of all the companies in Calabar were inaccessible to the researchers during the study due to government bureaucracy. Consequently, we targeted 14 of the most popular bottled water companies in Calabar which provided consent and cooperation for the questionnaire survey. The population of the study therefore comprised all the managerial personnel of the selected bottled water companies in Calabar. These bottled water companies are involved in the business of treating, processing, packaging, and selling bottled water to consumers in Calabar through direct and indirect distribution channels. Information from the selected companies revealed the population to comprised 1,284 operational personnel (including supply chain personnel, production personnel, procurement officers, warehousing personnel, transportation personnel, and customer service personnel). With respect to sample size, given that the population figure was precise, we employed the Taro Yamane method to establish a statistically appropriate sample size for the study. The Taro Yamane formula is stated thus:

$$n = \frac{N}{1+N(e)^2}$$

Where:

n	=	Sample size required
N	=	Finite population
I	=	Constant

$$e = \text{Margin of Error (5 percent)}$$

By simple substitution,

$$\begin{aligned} n &= \frac{1,284}{1 + 1,284 (0.05)^2} \\ &= \frac{1,284}{1 + 1,284 (0.0025)} \\ &= \frac{1,284}{1 + 3.21} \\ &= \frac{1,284}{4.21} \\ &= 304.98 \end{aligned}$$

∴ n = 305 personnel approximately

Following that, we utilized a stratified random sampling approach to choose elements for inclusion in the questionnaire survey. This method is a type of probability sampling where the researcher divides the total finite population into separate strata, from which potential respondents or sample elements are selected for the investigation. In this case, the researcher subdivided the population (operational personnel) of the study into fourteen (14) distinct strata comprising the key departments involved in physical distribution functions in the selected bottled water companies. This involved categorizing the operational personnel into fourteen discrete strata, each delineated by the key departments integral to the physical distribution functions within the selected bottled water companies. Such a stratification strategy allowed for a more comprehensive analysis by ensuring representation from various facets of the organizational structure. By delineating the population in this manner, the researcher aimed to capture the multifaceted dynamics inherent in the physical distribution processes of the bottled water industry. Consequently, the operational personnel of the companies were drawn from the selected strata as displayed in Table 1 to participate in the questionnaire survey.

Table 1: Stratified sampling process

SN	Water Companies	Personnel population	Sample	
1	Blue Rose Water	126	$\frac{126}{1,284} \times 305$	= 29.99 ≈ 30
2	Lura Water	137	$\frac{137}{1,284} \times 305$	= 32.54 ≈ 33
3	Brightpack Table Water	80	$\frac{80}{1,284} \times 305$	= 19.00 ≈ 19
4	Mabis Water	145	$\frac{145}{1,284} \times 305$	= 34.44 ≈ 34

Physical Distribution Strategies and the Marketing Performance of Bottled Water Companies in Calabar, Nigeria

5	Marian Table Water	161	$\frac{161}{1,284} \times 305$	= 38.24 \approx 38
6	Unical Table Water	70	$\frac{70}{1,284} \times 305$	= 16.63 \approx 17
7	Amet Table Water	91	$\frac{91}{1,284} \times 305$	= 21.62 \approx 22
8	Bella Table Water	55	$\frac{55}{1,284} \times 305$	= 13.06 \approx 13
9	AquaPrime Table Water	93	$\frac{93}{1,284} \times 305$	= 22.09 \approx 22
10	Miradalen Table Water	75	$\frac{75}{1,284} \times 305$	= 17.12 \approx 17
11	Tropical Table Water	87	$\frac{87}{1,284} \times 305$	= 20.67 \approx 21
12	Zeoma Table Water	45	$\frac{45}{1,284} \times 305$	= 10.69 \approx 11
13	Lasena Alkaline Mineral Water	63	$\frac{63}{1,284} \times 305$	= 14.96 \approx 15
14	Dascom Table Water	56	$\frac{56}{1,284} \times 305$	= 13.30 \approx 13
		1,284	305	305

Source: Authors' computation (2024)

Source and Methods of Data Collection

This research utilized primary data gathered from managerial and executive staff of bottled water companies located in Calabar. A 5-point Likert scale questionnaire was employed to collect data, facilitated by a team of five enumerators to ensure the questionnaires secure administration and retrieval. The questionnaire incorporated parameters assessing physical distribution strategies, sourced from various studies (James & Inyang, 2022; Kirui & Nondi, 2017; Wasike & Juma, 2020), and parameters evaluating marketing performance, derived from other sources (Hamid et al., 2021; Smith, 2020). Specifically, statements (1-3) evaluated order processing management; statements (4-6) focused on transportation management; statements (7-9) addressed inventory management; statements (10-12) tackled warehouse management; and statements (13-16) assessed marketing performance.

Questionnaire Reliability and Data Analytical Method

The research questionnaire's reliability was verified using the Cronbach alpha reliability method. A preliminary version of the questionnaire was distributed to 30 randomly selected employees from a bottled water company in Calabar as part of a small-scale survey. The gathered data underwent coding and entry into the

Physical Distribution Strategies and the Marketing Performance of Bottled Water Companies in Calabar, Nigeria
Statistical Package for the Social Sciences (SPSS 23) for reliability assessment. Following analysis, the instrument was deemed reliable and suitable for field administration as all measurement scales yielded Cronbach alpha coefficients exceeding the threshold of 0.7 (Refer to Table 2).

Table 2: Summary of reliability results

SN	Variables	No. of items	Alpha coefficients
1	Order processing management	3	.749
2	Transportation management	3	.803
3	Inventory management	3	.782
4	Warehouse management	3	.727
5	Marketing performance	4	.751
		16	

Source: Authors' Analysis Via SPSS 2024

After establishing the statistical reliability of the questionnaire, it was chosen for use in field surveys, enabling the acquisition of primary data for the research. Subsequently, the gathered data underwent analysis and interpretation utilizing descriptive statistics. Meanwhile, the study's hypotheses underwent testing via multiple linear regression, employing the following model:

$$\text{MKTPERF} = a + \beta_1\text{OPM} + \beta_2\text{TRAM} + \beta_3\text{IVEM} + \beta_4\text{WHM} + e$$

Where:

MKTPERF = Marketing performance

a = Intercept (or constant)

$\beta_1\text{OPM}$ = Coefficient of order processing management

$\beta_2\text{TRAM}$ = Coefficient of transportation management

$\beta_3\text{IVEM}$ = Coefficient of inventory management

$\beta_4\text{WHM}$ = Coefficient of warehouse management

e = Error margin (5 percent)

4. Data Analysis and Discussion

In the survey, we distributed 305 questionnaire copies to employees at various bottled water companies. Of these, 276 questionnaires, or 90.5 percent of the total, were successfully collected and deemed usable. The remaining 29 questionnaires, constituting 9.5 percent of the total, were not retrieved. Therefore,

Physical Distribution Strategies and the Marketing Performance of Bottled Water Companies in Calabar, Nigeria
our analysis relies on data from 276 respondents, which represents 90.5 percent of the original sample size.

The independent variables consist of order processing management, transportation management, inventory management, and warehouse management. Whereas, Dependent variable is Marketing performance.

For the decision criteria: If the probability (P) falls below .05, we accept the alternative hypothesis; otherwise, we reject the null hypothesis.

Table 3: Model summary of the effect of physical distribution strategies on the marketing performance of bottled water companies in Nigeria

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.614 ^a	.426	.416	2.31909

a. Predictors: (Constant), Order processing management, transportation management, inventory management, and warehouse management

Source: Authors' Analysis Via SPSS 2024

Table 4: ANOVA^a of the effect of physical distribution strategies on the marketing performance of bottled water companies in Nigeria

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	998.147	4	998.147	201.320	.000 ^b
	Residual	1343.491	271	4.958		
	Total	2341.638	275			

a. Dependent Variable: Marketing performance

b. Predictors: (Constant), Order processing management, transportation management, inventory management, and warehouse management

Source: Authors' Analysis Via SPSS 2024

Table 5: Coefficients of the effect of physical distribution strategies on the marketing performance of bottled water companies in Nigeria

Model	Unstandardized Coefficients	Std. Error	Standardized Coefficients	t	Sig.
1 (Constant)	B		Beta		
	16.042	.827		19.403	.000

Order processing management	.344	.073	.332	4.720	.000
Transportation management	.345	.087	.309	3.980	.000
Inventory management	.234	.028	.411	3.652	.002
Warehouse management	.538	.086	.360	6.262	.000

a. Dependent Variable: Marketing performance

Source: Authors' Analysis Via SPSS 2024

The findings depicted in Tables 3, 4, and 5 highlight the influence of physical distribution strategies on the marketing performance of bottled water businesses in Nigeria. In Table 3, the summary model illustrates a very high correlation of 61.4 percent between the independent variable (physical distribution strategies) and the dependent variable (marketing performance), as indicated by the R column. Moreover, the coefficient of determination (R^2) of 0.426 suggests that approximately 42.6 percent of the variability in marketing performance can be attributed to physical distribution strategies. This implies that changes in the application of these strategies can potentially impact marketing performance by up to 42.6 percent, holding other factors constant. The statistical significance of the F-test (201.320, $P < 0.05$) in Table 4 confirms the validity of the regression model, supporting the conclusion that physical distribution significantly influences the marketing performance of bottled water companies in Nigeria.

Table 5 presents the coefficients, offering insight into the predictive capacity of each physical distribution strategy on marketing performance. All four strategies—order processing management, transportation management, inventory management, and warehouse management—demonstrate significant predictive power for marketing performance, as indicated by their p-values being below the error margin of 0.05 and positive t-test values. This suggests a direct and positive relationship between these strategies and marketing performance. Additionally, the standardized beta coefficient column in Table 5 delineates the individual contributions of each strategy to the model. Inventory management emerges as the most influential, with a beta coefficient of 0.411 (41.1 percent), followed by warehouse management at 0.360 (36.0 percent), and transportation management with the lowest contribution at 0.309 (30.9 percent). Further analysis reveals that the p-values for all independent variables (order processing management = 0.000, transportation management = 0.000, inventory management = 0.002, and warehouse management = 0.000) are below 0.05, leading to the rejection of null hypotheses and acceptance of alternative hypotheses. This underscores the significant positive influences of order processing, transportation, inventory, and

Physical Distribution Strategies and the Marketing Performance of Bottled Water Companies in Calabar, Nigeria
warehouse management on the marketing performance of bottled water companies in Nigeria.

These findings underscore the importance of effective physical distribution strategies in enhancing marketing performance within the bottled water industry context in Nigeria. They emphasize that efficient order processing ensures timely fulfillment of customer orders, while effective transportation management ensures the smooth movement of products to distribution points. Additionally, well-managed inventory helps in maintaining optimal stock levels to meet demand, while efficient warehouse management ensures proper storage and handling of goods. Overall, these findings provide valuable insights for managers in the bottled water industry in Nigeria, indicating areas where improvements in physical distribution management can lead to tangible benefits in marketing performance. It also emphasizes the need for companies to focus on enhancing their operational efficiencies in order processing, transportation, inventory, and warehouse management to stay competitive and succeed in the market.

Discussion of Findings

The test of hypothesis one demonstrated that order processing management significantly enhances the marketing performance of bottled water companies in Nigeria. This outcome aligns with previous research by Odumosu et al. (2018) and Al-Majed et al. (2023), indicating a strong positive correlation between order processing management and operational performance. This suggests that optimizing order processing is integral to the physical distribution aspect and can substantially boost marketing outcomes for bottled water companies in Nigeria. Also, the test of hypothesis two revealed that transportation management had a significant positive effect on the marketing performance of bottled water companies in Nigeria. This finding is corroborated by Gupta (2022) and Al-Dmour et al. (2022), affirming the significant impact of transportation management on operational performance. Thus, enhancing transportation management emerges as a critical component of physical distribution, capable of enhancing the marketing performance of bottled water companies in Nigeria. The implication of this finding in the context of bottled water companies is that effective order processing management involves streamlining processes to ensure timely delivery, accurate order fulfillment, and customer satisfaction. The study's finding suggests that bottled water companies in Calabar that excel in managing their order processing systems experience improved marketing performance compared to those with less efficient systems. It underscores that a well-managed order processing system can positively impact marketing performance by

Physical Distribution Strategies and the Marketing Performance of Bottled Water Companies in Calabar, Nigeria facilitating smooth transactions, meeting customer expectations, and fostering repeat business. In the competitive market for bottled water in Calabar, where consumers have various options to choose from, companies that can efficiently process orders may gain a competitive edge by offering superior service and reliability. Furthermore, the significance of this finding extends beyond operational efficiency to strategic advantage. This is because in a market where customer satisfaction and brand loyalty play pivotal roles, the ability to effectively manage order processing can contribute to long-term success of bottled water companies, bolstering their market position and profitability over time.

In testing hypothesis two, the result indicated that transportation management has a significant positive effect on the marketing performance of bottled water companies, Calabar. This finding is backed by the study of Gupta (2022), which revealed that transportation management had a significant positive influence on the operational performance of Indian manufacturing companies. The finding also aligns with the study of Al-Dmour *et al.* (2022), which revealed that transportation management had a significant positive influence on the marketing performance of manufacturing companies in Jordan. In the context of bottled water companies in Nigeria, this finding revealed that transportation management is a critical dimension within the framework of physical distribution. Its significance lies in its ability to optimize the movement of goods, particularly bottled water products, from production facilities to end consumers. By ensuring timely and efficient delivery processes, transportation management not only enhances operational efficiency but also directly influences marketing outcomes. As such, this finding underscores the interconnectedness of transportation management operations and marketing strategies, emphasizing the need for integrated approaches in enhancing overall business performance. Moreover, within the specific context of Nigeria's bottled water industry, where market dynamics and consumer preferences continually evolve, the role of transportation management becomes even more pronounced. This is because in a country characterized by diverse geographical landscapes and infrastructural challenges, effective transportation management becomes a catalyst for ensuring product availability and accessibility across various market segments. As such, the research finding not only validates the importance of transportation logistics but also underscores its strategic relevance in navigating the complexities of the Nigerian market landscape.

Similarly, the test of hypothesis three revealed that inventory management has a significant positive effect on the marketing performance of bottled water

Physical Distribution Strategies and the Marketing Performance of Bottled Water Companies in Calabar, Nigeria companies, Calabar. This finding is backed by the study of Ibrahim et al. (2021), which revealed that inventory management had a significant positive impact on customer satisfaction towards manufacturers of fast-moving consumer goods in Lagos. The finding is also backed by the study of Al-Majed et al. (2023), which revealed that inventory management had a significant positive influence on the marketing performance of Kuwaiti manufacturing companies. In the context of this study, therefore, the implication of this finding is that inventory management has been proven to be an essential dimension of physical distribution which possesses the capacity to significantly improve the marketing performance of bottled water companies in Nigeria. It shows that by efficiently managing their inventory, bottled water companies can better meet consumer demand, optimize production schedules, and minimize stockouts or excess inventory, all of which are pivotal in enhancing their marketing effectiveness. The finding also indicates that effective inventory management enables bottled water companies to maintain adequate stock levels to meet customer demand while avoiding overstocking, which can tie up financial resources and lead to wastage. Moreover, it allows companies to respond promptly to market fluctuations and changing consumer preferences, thus ensuring their products remain competitive and relevant in the marketplace. The positive effect observed in the finding suggests that bottled water companies employing robust inventory management practices are better positioned to capitalize on market opportunities, improve customer satisfaction, and ultimately drive revenue growth.

Finally, in testing hypothesis four, the findings revealed that warehouse management has a significant positive effect on the marketing performance of bottled water companies, Calabar. This finding is backed by the study of Adesina et al. (2019), which revealed that warehouse management had a significant positive impact on the supply-chain performance of manufacturing firms in Nigeria. The finding is also backed by the study of Odumosu et al. (2018), which revealed that warehouse management had a significant positive relationship with the operational performance of fashion accessories' manufacturers in Lagos and Ogun States, Nigeria. The implication of this finding, in the context of this study, is that warehouse management has been proven to be an essential dimension of physical distribution which possesses the capacity to significantly improve the marketing performance of bottled water companies in Nigeria. The finding further implies that effective warehouse management not only ensures the availability of products but also contributes to overall operational efficiency and cost-effectiveness. It shows that by optimizing inventory levels and minimizing stockouts, bottled water companies can avoid lost sales opportunities and

maintain customer satisfaction. Moreover, well-managed warehouses facilitate smoother logistics operations, enabling companies to respond promptly to market fluctuations and capitalize on emerging opportunities. In addition, the research finding underscore that bottled water companies that prioritize efficient warehouse operations are better equipped to adapt to market changes, maintain competitive advantage, and ultimately achieve sustainable growth. As such, the research findings emphasize the need for bottled water companies in Calabar to recognize warehouse management as a critical driver of marketing performance and allocate resources accordingly to enhance their operational efficiency and market competitiveness.

5. Conclusion and Policy Implications

The results from the study revealed significant positive correlations between order processing, transportation, inventory management, warehousing management, and the marketing performance of bottled water companies in Nigeria. This implies that the application of these physical distribution strategies in the operations of bottled water companies has the capacity to substantially enhance operational and marketing performance. Hence, this study concludes that physical distribution strategies are significantly essential to the marketing operations of bottled water companies in the Nigerian context. Based on the conclusions drawn, the following recommendations are proposed for potential adoption:

- i. Bottled water companies should integrate innovative technologies into their order processing systems, such as automated order placement, and order sorting software to ensure the delivery of accurate and personalized orders to customers at all times.
- ii. A robust transportation management system characterized by timely carrier scheduling, clear route planning and automated carrier tracking should be in place to enable bottled water companies achieve effective distribution of products to customers when needed.
- iii. Bottled water companies should prioritize inventory management through strategic inventory planning, automated inventory control and prompt inventory replacement to ensure that inventory resources required for production and customer service are consistently available in appropriate quantities and quality.
- iv. Bottled water companies should improve warehouse management by ensuring the availability of reserve storage, engage in automated material handling in order to guarantee availability of products for the market and that products are produced under sanitary conditions to safeguard consumers' health.

References

- Abdelhakim, A. M., & Salem, H. M. (2023). Enhancing physical distribution strategies in the Egyptian manufacturing sector: A supply chain perspective. *International Journal of Physical Distribution & Logistics Management*, 42(2), 175-193.
- Acero, R., Torralba, M., Pérez-Moya, R., & Pozo, J. A. (2019). Order processing improvement in military logistics by Value Stream Analysis lean methodology. *Procedia Manufacturing*, 41, 74-81.
- Adesina, O. A., Okoye, E. O., & Adeleke, A. O. (2019). Enhancing supply chain performance through effective physical distribution strategies: A case study of Nigerian manufacturing firms. *International Journal of Business and Management*, 35(2), 78-93.
- Adesina, O. A., Okoye, E. O., & Adeleke, A. O. (2019). Enhancing supply chain performance through effective physical distribution strategies: A case study of Nigerian manufacturing firms. *International Journal of Business and Management*, 35(2), 78-93.
- Ahmed, S. K., Adeleke, S. A., & Ogungbemi, A. F. (2017). An empirical investigation of the factors influencing the adoption of physical distribution strategies in Nigerian manufacturing firms. *Journal of Supply Chain Management*, 42(2), 98-114.
- Ajayi, A. O., Yusuf, O. R., & Olaleye, O. A. (2020). The role of technology in optimizing physical distribution strategies: A study of Nigerian manufacturing firms. *Journal of Manufacturing Technology Management*, 37(1), 45-61.
- Al-Dmour, R., Al-Bakri, A., & Almajali, D. (2022). Physical distribution strategies and marketing performance of manufacturing companies: A Jordanian perspective. *Journal of Business and Industrial Marketing*, 40(3), 520-537.
- Al-Kahtani, S. S., & Al-Atawi, A. R. (2022). Effective physical distribution strategies for Saudi Arabian manufacturing companies: An empirical investigation. *Journal of Business Logistics*, 47(1), 63-80.
- Al-Majed, A., Al-Dhubaib, A., & Al-Shammari, M. (2023). Impact of physical distribution strategies on marketing performance: Evidence from Kuwaiti manufacturing companies. *International Journal of Logistics Management*, 45(2), 273-291.
- Barney, J. B. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99-120.

- Davis, G. F., & DeWitt, T. (2021). Organization theory and the resource-based view of the firm: The great divide. *Journal of Management*, 47(7), 1684-1697.
- Gupta, R. K. (2022). Assessing the effectiveness of physical distribution strategies in the Indian manufacturing sector: A case study of selected firms. *International Journal of Logistics and Supply Chain Management*, 55(3), 189-205.
- Gupta, S., & Singh, R. (2023). Physical distribution optimization for sustainable manufacturing: A Canadian perspective. *International Journal of Production Economics*, 202, 99-115.
- Hamid, A. A., Yousif, A. B., Rahman, N. S., & Alshareef, S. K. (2021). Supplier relationship management quality and marketing performance: Does strategy matter? *Polish Journal of Management Studies*, 24(2), 136-155.
- Helfat, C. E., & Peteraf, M. A. (2003). The dynamic resource-based view: Capability lifecycles. *Strategic Management Journal*, 24(10), 997-1010.
- Ibrahim, M. A., & El-Sherbeny, A. (2021). Optimizing inventory management and physical distribution in Egyptian manufacturing companies. *Journal of Operations and Supply Chain Management*, 12(3), 123-142.
- Ibrahim, S. O., Mohammed, A., & Bello, I. A. (2021). Evaluating the effectiveness of physical distribution strategies in improving customer satisfaction: Insights from Nigerian manufacturing firms. *Journal of Logistics and Supply Chain Management*, 48(3), 214-230.
- James, E. E., & Inyang, I. B. (2022). Logistics management and marketing performance of small and medium-sized manufacturing firms. *Logistics Management*, 5(1), 1-15.
- Kirui, M. T. & Nondi, R. (2017). Effects of logistics management on the organizational performance of shipping firms in Mombasa County. *Strategic Journal of Business & Change Management*, 4(3), 821 – 839
- Kritchanchai, D., & Meesamut, W. (2015). Developing inventory management in hospitals. *International Journal of Supply Chain Management*, 4(2), 11-19.
- Liu, W., & Bai, X. (2011). Measuring marketing performance: A review and critique. *Journal of Business Research*, 64(11), 2-1269.
- Mao, J., Xing, H., & Zhang, X. (2018). Design of an intelligent warehouse management system. *Wireless Personal Communications*, 102(2), 1355-1367.
- McGahan, A. M. (2021). Integrating insights from the resource-based view of the firm into the new stakeholder theory. *Journal of Management*, 47(7), 1734-1756.

- Physical Distribution Strategies and the Marketing Performance of Bottled Water Companies in Calabar, Nigeria*
- Mugambi, P. N., & Muthami, J. N. (2021). Logistics outsourcing and physical distribution performance: A study of manufacturing firms in Kenya. *African Journal of Business Management*, 15(2), 45-63. D
- Müller, S., Schmidt, H., & Wagner, K. (2018). The impact of digitalization on marketing performance: An empirical analysis of German firms. *Journal of Marketing Management*, 33(4), 245-261.
- Obasi, K. J. (2023). Manufacturing: The key to economic growth and shared prosperity in Nigeria. *Economic and Policy Review*, 21(1), 41-46.
- Odumosu, O. M., Abayomi, T. O., & Adegoke, T. O. (2018). Analyzing the impact of physical distribution strategies on operational performance: Evidence from Nigerian manufacturing firms. *Journal of Applied Business Research*, 27(4), 156-173.
- Ongoro, S., & Nyabuti, A. (2022). Physical distribution strategies and firm performance: Evidence from the Kenyan manufacturing sector. *Journal of Business Logistics*, 46(3), 219-235.
- Sheth, J. N., Newman, B. I., & Gross, B. L. (2018). Why we buy what we buy: A theory of consumption values. *Journal of Business Research*, 22(2), 159-170.
- Smith, A. (2020). Measuring marketing performance: A comprehensive framework for analysis. *Journal of Marketing Research*, 45(2), 112-129.
- Tanaka, K., Yamamoto, M., & Suzuki, T. (2023). Physical distribution strategies and marketing performance of manufacturing companies in Japan. *Journal of International Marketing*, 37(4), 789-807.
- Thompson, R. K. (2019). Expectations, performance evaluation, and consumers' perceptions of quality. *Journal of Marketing*, 57(4), 18-34.
- Vargo, S. L., & Lusch, R. F. (2020). Evolving to a new dominant logic for marketing. *Journal of Marketing*, 68(1), 1-17.
- Wasike, E. R. & Juma, D. (2020). Influence of logistics management practices on the logistic performance of humanitarian organizations in Kakamega County, Kenya. *International Journal of Scientific and Research Publications*, 10(9), 97-109