

Effect of Logistics Outsourcing on Operational Performance of the Selected Manufacturing Companies in Southwestern Nigeria

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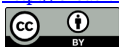
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Abstract

The study examined the effect of logistics outsourcing on operational performance of the selected manufacturing companies in Southwestern, Nigeria. These were with a view to providing information on the effect of logistics outsourcing on operational performance of the selected manufacturing companies in Southwestern, Nigeria. The article is organized progressively to elucidate on challenges being faced by producers of Fast Moving Consumer Goods and services in delivering values to their customers; and still remain in business as a going concern through outsourcing of logistics activities, despite the cost volatilities. Evidences area bound in the data was collected and analysed to draw up valid conclusions. The study adopted a descriptive survey design. Primary data on variables such as haulage, storage and facility/asset management and operational performance were obtained through the administration of questionnaire to respondents. The population of the study comprised of six hundred and twenty (620) senior managers, middle level officers and supervisors who were employees of the selected food manufacturing companies in Lagos, Oyo and Ogun states of Southwestern, Nigeria. Sample size of two hundred and sixty (260) employees of manufacturing companies in South western, Nigeria was selected for the study using Taro Yamane's formula. Data obtained for the study were analysed using figures, tables, percentages and regression analysis. Result from the study showed that logistics outsourcing ($F = 10.875, p < 0.05$) had significant effect on operational performance of the selected manufacturing companies in Southwestern, Nigeria. The study concluded that logistics outsourcing significantly enhanced operational performance of manufacturing companies.

Keywords

Outsourcing L 21, Logistics L 11, Performance P 17, Product P 24,
Manufacturing N 6

1. Introduction

Chete, Adeoti, Adeyinka and Ogundele (2021) posited that Nigerian manufacturing firms suffer acute shortages of infrastructure such as good roads, portable water, and, in particular, power supply. Consequently, these escalate their costs of production and erode their competitiveness relative to foreign firms. Same facts hold for manufacturing organizations in Nigeria particularly, in Southwestern Nigeria that is faced with challenges of increasing cost of production. While several studies (McCarthy & Anagnostou, 2004; Meixell, Kenyon, & Westfall, 2014; Zailani, Shaharudin, Razm, & Iranmanesh, 2017) made in the past have shown that efficient and effective outsourcing logistics operation can reduce operating cost and enhance future performance in developed economies, its possible effect on performance of firms in Southwestern Nigeria could still be further explained, hence this study.

Business activity in our contemporary environment is faced with lots of cost challenges, ranging from material sourcing, production overheads to cost of sales. Conversely, competition and market dynamics have made it impossible for companies to pass this ever-increasing cost to final consumers; otherwise, manufacturers of these commodities could price themselves out of market. However, one of the survival strategies available to organizations is to look inward and drive efficiency within their operations by focusing on their core functions and outsource the non-core functions to Third Party Logistics organizations called 3PLs. By outsourcing, operational cost can be reduced drastically, companies can take advantage of cost leadership to fight competition, gain market share, sustain competitive edge, attract and retain customers, increase volume and achieve their profitability objectives.

Furthermore, risk as one of the major threats to the existence of any organization and the ways to manage this, is not only to identify those risks, but to also calculate and put mitigation plans to either forestall its occurrence or reduce the impact on business continuity. Lawson, Tyler and Potter (2014) observed that the pooling effect and benefits of the economies of scale through which outsourced companies acquire assets and make them available to their clients at reduced cost, go a long way in risk management, therefore is now becoming one of the critical new tools and benefits of outsourcing.

In the same vein, manufacturing businesses grow with the complexities of managing people, check abuse of privileges, asset care, industrial relations, external stakeholders, environmental factors and statutory demands. It is not easy

to combine all the attendant problems with the primary motive of being in the business to produce the best and qualitative products for customers, hence the need for collaboration with other experts to be in charge of the non-core functions for the ultimate goal of winning at the market place.

Leadership of several companies located in the Southwestern Nigeria quite understand the narratives of logistics outsourcing now and gradually changing their orientations on the issues pertaining to their non-core, but fundamental business activities, by practically engaging logistics services providers or Third-Party logistics organizations. Among such organizations are, Coca-Cola Hellenic Nigerian Bottling Company, Friesland and Campina WAMCONigeria Plc, CHI Ltd and Rite foods Ltd that have adopted logistics outsourcing techniques in their non-core operations over the past one decade. In the light of this fact it was therefore considered expedient to actually ascertain the contribution of this strategic business relationship on the performance of these manufacturing companies in Southwestern Nigeria.

To articulate the relationship between logistics outsourcing and performance of manufacturing companies in the Southwestern Nigeria, this question was answered in the study: what is the effect of Logistics outsourcing on operational performance of the selected manufacturing companies? The objective set was to examine the effect of logistics outsourcing on operational performance of the selected manufacturing companies in Southwestern Nigeria. While the hypothesis of the study is as follows: H_0 : Logistics outsourcing does not have significant effect on the operational performance of manufacturing companies

The main motivation for this study is the rapid increase in outsourcing of logistics activities in Nigeria and the benefits accrued from such activities over time to companies, their employees and other stakeholders as well as providers of the activities. This study focused on the impact and benefits of sharing identified non-core activities in manufacturing business with experts for optimal results.

The study clearly provides a useful reference on outsourcing for business practitioners to use as a business plan for outsourcing non-core functions to third parties. It helps to spread risks and focuses on matters that are vital to long-term survival and development. With the results, it is expected that many businesses will turn to logistics outsourcing to better stabilize their activities in the face of Nigeria's and the world's current economic woes.

In addition, the study also provides tremendous benefits to the policy makers (government agencies and institutions) to develop a framework and national guidelines for collaboration and trade partnership through outsourcing. Academic researchers in the same field of study will also find it useful as reference in future. Finally, the study is intended to cover areas of specific interest with potential opportunities to bridge likely gaps in previous studies.

2. Review of Empirical Studies

Somuyuwa, Odepidan and Dosunmu (2016) investigated the numerous opera-

tions that manufacturing firms outsource, in order to satisfy customer demand and satisfaction in Nigeria. According to their research, transportation operations are critical in maintaining high customer satisfaction and repeat purchases. This is due to the relative benefits of lower freight charges, less inventory in transit, and improved production planning due to greater transportation visibility.

They also discovered that companies engaged in the production of goods or services outsource peripheral or ancillary services at various levels of their operations, with haulage or redistribution of their goods being the most outsourced, indicating that transportation is a critical component of manufacturing firms' operations since it is required all through the entire process. In the same vein, because demand and supply have become international procedures, firms that operate in an international or global environment must have a short lead time. It is critical in the distribution process to ensure a proper geographical coverage while still meeting customer demand.

Musau (2016), a case study of Bidco Africa Limited, Kenya, utilised main sources to investigate the impact of strategic externalisation on organisation's performance. The study found that cost-driven outsourcing enhances short-term and long-term performance by reducing costs and risks and boosting operational efficiency. Furthermore, the report found that innovation-oriented outsourcing enables firms to create, develop and offer value to their consumers faster than their competitors. However, the success of innovation-led outsourcing has depended significantly on cost management and core competence concentration, and should thus be thoroughly examined. Finally, the research found that, focusing on outsourced services allows a company to free up resources so that its core business may be focused on, therefore, leads to increased corporate performance.

In Lin, Pekkarinen and Ma (2015), description analyses have been carried out to examine the consequences of logistics outsourcing on the company's performance in Finland. In order to check the data validity, field visits and secondary documentation have been used. It has been found, three degrees of interface or interactions which are: the design interface between goods and logistics, the interface between manufacturing and service provider and the information connection of manufacturing information systems and logistics systems. The conclusions also imply that these interfaces may be created and maintained utilising eleven fundamental S-D logic premises, in particular service-oriented, customer-oriented and streamlined perspectives.

Rahman's (2011) research was also carried out from an Australian viewpoint on outsourcing of 3PL services. This study was based on an Australian questionnaire survey. The sample was selected from the 500 biggest Australian companies, according to Dun & Bradstreet. A total of 210 firms were found for this study after banks and other financial institutions, insurance companies and real estate enterprises were removed from the list. Statistics suggested that warehouse management, order fulfilment and fleet management were the most often used

logistics services. The top three reasons why companies outsource were cost reductions, lower investment in capital and more operational flexibility. 3PL service providers were highly satisfied with 86 percent of these services saying that they would continue to utilise them in the future. On the other side, employee morale in 50% of 3PL customers was negatively affected.

McCarthy and Anagnostou (2004) used primary sources to examine the processes and performance of outsourcing logistics by UK producer businesses. Traditional economic views on manufacturing in the UK underestimated its relevance and contribution to GDP, according to study. This was because UK industrial companies outsourced several activities, such as transportation, IT, accounting, telecommunications and legal services, in order to enhance their efficiency. This method opposed vertical integration diametrically and has resulted to an extension of the manufacturing boundary significantly, shifting transaction costs and economic value to other sectors, especially the services sector.

The typical logistics outsourcing processes and outcomes were studied by Töyli, Englem and Ojala (2016) utilising data from 223 firms in Finland. The research aims to analyse and quantify the relationships between logistics outsourcing, spending and performance, financial performance and business outsourcing in small businesses, as well as the existing state and future objectives of outsourcing logistics. According to the report, transport activities were unnecessarily externalised. Most of the firms responded that they had not outsourced or billed orders and half of them said they did not have IT logistics outsourced systems.

Materials management, value added services and IT are the areas where outsourcing is most likely to flourish. Companies that export to a medium-sized company may face greater logistics costs than other companies. To validate this conclusion, more investigation would be necessary. Outsourcing does not influence the logistical performance negatively or positively. The more outsourcing companies, the less in-house and vice versa, however, companies must watch and run carefully. The findings demonstrated in a nutshell that, management should not assume inevitable benefits from logistical externalisation, but rather look at the company-specific features that support or, under certain situations, prevent the decision of externalisation.

Hilletoft and Hilmola's (2010) study focused on standard logistics processes, supply chain strategy and management. They examined the influence on supply chain management and strategy of logistics outsourcing. The research used and analysed primary data utilising the method of regression analysis. As far as the results were concerned, outsourcing of storage, IT and customs offices have an influence on a number of supply chain management and strategy. Consequently, no statistically significant of the differences identified were detected. Integrated IT production and logistics systems, reverse logistics approaches and reengineering logistics operations might affect supply chain strategy and management.

Inhouse IT services and perhaps outsourced storage, according to research, play an important role in purchases outside the country.

In order to create a decision-making framework for the different outsourcing levels of logistics in the food chain networks, [Hsiao et al. \(2010\)](#) researched logistical outsourcing techniques and network architecture in Taiwan. Descriptive analysis for the examination of the major data was utilised in this study. The research shows that logistical tasks at all levels are outsourced for a number of reasons. There were three major determinants: asset specialisation, key proximity and complexity of the supply chain. The analysis of various outsourcing activities therefore requires knowledge of three theories: cost of transactions, resource-based and supply chain management theory.

[Gotzamani, Longinidis and Vouzas \(2010\)](#) utilised the method of regression to analyse the main data collected and looked at the logistical and financial outsourcing practises of manufacturing businesses in Greece. According to the results, in terms of quality implementation and improvement 3PL providers were ahead of manufacturing companies with in-house logistics departments. The study also revealed a relationship between the quality and financial success of 3PL providers.

In order to analyse conventional logistics outsourcing and logistics supply selection in Brazil, [Wanke, Arkader and Hijjar \(2008\)](#) employed main data and regression model. The research revealed that advanced logistics functions were related to an integrated 3PLs and the relationship between the production A-type structure and an interest in integrated 3PLs, and that V and T types are supported by functional 3PLs. Shippers with process architectures of type T and sophisticated logistics, on the other hand, have integrated 3PLs selected.

In order to study logistical outsourcing and performance in Malaysia, [Zailani, Shaharudin, Razm and Iranmanesh \(2017\)](#) employed primary data from the structured questionnaire, analysed using the regression techniques. There had been a lack of knowledge in human and physical assets as well as transaction uncertainty in the implementation of different outsourced logistics methods. The four logistics outsourcing strategies investigated in the study, especially the strategic emphasis, had a positive influence on the outsourcing of logistics performance. Although companies may think that the implementation of a logistics outsourcing strategy will save costs, this study shows that this is not the case since one of the four logistics outsourcing strategies evaluated had only contributed favourably to the financial benefit.

3. Area of Study

The study focused on foods and beverages industry, specifically, it covered manufacturing food and beverages companies in the Southwestern, Nigeria. The four selected companies are: Nigerian Bottling Company (NBC) Ltd, a bottling partner of Coca-Cola Company through purchase of concentrates from Coca-Cola Ltd, bottling and sale of Finished Goods. The Southwestern operation of

NBC consists of 2 plants, Asejire and Ikeja. Secondly, Friesland Campina WAMCO Nigeria Plc, thirdly, CHI Ltd, and lastly, Rite foods Ltd, an indigenous business transformation from photography (photo tech Ltd) to gala sausage and potentially complimented that with manufacturing of non-alcoholic beverage.

Southwestern part of Nigeria comprises of Six (6) States. These are Lagos State that is along the coastline, loaded with lots of commercial activities, in fact, Lagos is the commercial hub of Nigeria, then, Ekiti State, Osun State, Ondo State, Ogun State and Oyo. The people in Southwestern Nigeria are Yorubas, who occupy major urban centres of this Geo-political Zone. The study adopted a cross-sectional survey design to examine the effect of logistics outsourcing on operational performance in four selected beverages companies in Southwestern Nigeria. In conducting this study, the quantitative research approach and the case study research design was adopted. The study was conducted using employees at the production plants and distribution centres of four manufacturing companies selected. The population of the study consisted of six hundred and twenty (620) senior managers, middle level officers and supervisors who have direct knowledge of the companies' operations. (Table 1)

The study adopted proportional stratified sampling technique to select both the participating companies and the respondents. The sample size of the participants was determined using Taro Yamane (1967) formula since the study has a definite population (Cochran, 1963) which is more appropriate when little or no information is known about population behaviour. Yamane formula is presented below:

$$n = \frac{N}{1 + Ne^2}$$

where:

n = Sample size,

required N = Population size e = level of precision (0.05).

Table 1. Study population.

	Organization	Senior Manager	Middle Level Manager	Supervisor	Total
1	Coca-Cola Hellenic Bottling co Ltd	80	120	60	260
2	Friesland and Campina WAMCO Nigeria Plc,	40	69	35	144
3	CHI Ltd	25	61	33	119
4	Rite foods Ltd	20	40	37	97
		165	290	165	620

Source: Researchers' computation, 2021.

$$n = \frac{620}{1 + 620(0.05)^2} = 243$$

Yamane formula gave 243 respondents; however, the sample size was increased to 260 respondents to compensate for the non-response rate which is common with survey studies. (Table 2)

Primary data source such as questionnaires were used to elicit responses from the participants in order to obtain primary data. The survey was administered using a drop-and-pick process and a Google Form. The respondents were employees working in the logistics and supply chain departments of the four businesses, including managers and supervisors. Other internal data that bother on sales volume, operating cost, key business indicators, contract notes and service level agreement sourced from companies' records through the contact offices of the selected organizations.

Managers and experts have created and evaluated the questionnaire for the research in order to guarantee that all the factors examined are covered. In order to evaluate the right questionnaire, 10% of the sample was made from an area not included in the research, a pilot study was undertaken. To evaluate its credibility, the study employed the test reliability test to analyse the consistency of the questionnaire across time. Among the participants in day-to-day logistics activities was the questionnaire piloted. The pilot experiment resulted in certain items being changed to clarify them before the data gathering. The researcher tested internal consistency with Cronbach (1951) alpha (SPSS version 22). (Table 3)

Table 2. Sample size and sampling techniques.

State	Population distribution per company	Population Proportion	Sample size (n)
Organization			$n = \frac{620}{1 + 620(0.05)^2} = 243$
Coca-cola Hellenic Bollting co Ltd	260	$x = \frac{260}{620} \times 100 = 41.9\%$	$n = \frac{41.9}{100} \times 243 = 101$
Friesland and Campina WAMCO Nigeria Plc	144	$x = \frac{144}{620} \times 100 = 23.2\%$	$n = \frac{23.2}{100} \times 243 = 56$
CHI Ltd	119	$x = \frac{119}{620} \times 100 = 19.2\%$	$n = \frac{19.2}{100} \times 243 = 48$
Rite foods Ltd	97	$x = \frac{97}{620} \times 100 = 15.6\%$	$n = \frac{15.6}{100} \times 243 = 38$
Total	620		243

Source: Researchers' computation, 2021.

Table 3. Reliability analysis (Cronbach's Alpha).

Construct	No. of Items	Cronbach's Alpha
Transportation Management	5	$\alpha = 0.821$
Storage Management	5	$\alpha = 0.874$
Facility/Asset Management	5	$\alpha = 0.936$
Operational Performance	6	$\alpha = 0.841$
Productivity/Productivity	4	$\alpha = 0.873$

Source: Researchers' computation, 2021.

4. Measurement of Variables

The basic variables in this study were the dependent and independent variables. The dependent variable was the company's performance measured by the operational performance. The operational performance was measured through cost reduction, reduction in road traffic/Loss time accidents, timely delivery, etc. While the independent variable was logistics outsourcing measured by variables such as transportation management (TRM), storage management (STM), and facility/assets management (FM).

5. Model Specification

The regression equation is:

$$OPP_i = \beta_0 + \beta_1 TRM_i + \beta_2 STM_i + \beta_3 FM_i + e_i \quad (1)$$

$$PRO_i = \beta_0 + \beta_1 TRM_i + \beta_2 STM_i + \beta_3 FM_i + e_i \quad (2)$$

where:

OPP = Operational Performance.

PRO = Productivity.

TRM = Transportation/haulage management.

STM = Storage Management.

FM = Facility/Asset Management.

β_0 = Constant.

B_1 = Slopes.

ε = Error term.

6. Data Analysis Techniques

The data analysis entailed the used of descriptive statistics such as percentage, mean, and standard deviation. The inferential statistics which was regression model was used to link the independent variables to the dependent variable. The results were interpreted and presented using tables via (STATA 17) software. Specifically, the data was analysed using ordinary least square regression adopting variance covariance estimates which produced standard errors robust to possible residual misnomer such serial correlation and heteroskedasticity and ordered generalized linear model which helps to factor the ordering of the out-

come variable into the estimation process. The latter also considered the proportional odd assumption.

Effect of Logistics Outsourcing Practices on Operational Performance of Manufacturing Companies

Table 4 reports the correlation analysis among the variables which shows that the logistics outsourcing practices and the productivity have negligible correlation which is less than 0.8 across the relationships. More so, the correlation among the explanatory variables indicates the existence of moderate correlation. The result shows that the explanatory variables do not have more than 0.8 correlations with each other. This implies that the models where these variables are used were free from the problem of multicollinearity, which may understate or overstate the standard error. (**Table 4**)

The study checked for multicollinearity among the independent variables as one of the assumptions of classical linear regression.

For all variables, Tolerance (Tol.) was adequate. (The Variance Inflation Factor (VIF) productivity was less than ten in all the variables, and the results were higher than 0.10. (**Table 5**)

The effect of logistics outsourcing practices on operational performance was achieved using differing measures of the constructs using both multiple regression using variance covariance estimate of the standard error which is robust to serial correlation and potential residual misnomer (model 1) and ordered generalized linear models (models 2 - 6) as displayed in **Table 5**. Analysis adopted sum score approach which was used to extract each measure of operational performance from the group of items explaining them. In essence, the average scores of the responses from each group of items measuring each performance proxies.

Table 4. Pairwise correlations.

Variables	(1)	(2)	(3)	(4)
(1) OPnew	1.000			
(2) TRMnew	0.203*	1.000		
(3) STMnew	0.313*	0.771*	1.000	
(4) FMnew	0.277*	0.631*	0.676*	1.000

*Shows significance at the 0.05 level; Source: Researchers' computation, 2021.

Table 5. Check for multicollinearity.

Variable	VIF	Tolerance
STMnew	2.89	0.345606
TRMnew	2.61	0.383378
FMnew	1.95	0.512879
Mean VIF	2.48	

Source: Researchers' computation, 2021.

The analysis tested the hypothesis of the study which states that “Logistics outsourcing does not have significant effect on the operational performance of manufacturing companies”. The focused factors were summarized into three main divisions: transportation management (TRM), storage management (STM), and facility/assets management (FM), while the dependent variable was the operational performance of manufacturing companies in the Southwestern, Nigeria. It can therefore be noted that the coefficients and the standard errors are not varying between the two models. For the purpose of this study, model 1 will be used to interpret the relationship between the variables.

The results showed that the independent variables were positively (except TRM which is also not significant) related to productivity, storage management (STM) and facility asset management (FM) were statistically significant to operational performance of the manufacturing companies ($t = 0.122$, $p < 0.05$ and $t = 0.08$, $p < 0.05$ respectively). The beta (β) weight of individual variable revealed that storage management (STM) had the strongest effect (38.8%) on operational performance; followed by facility/assets management (FM) with impact of 21.3%; while transportation management had the least impact (1.6%) on the operational performance of the manufacturing companies.

In addition, the results showed that logistics outsourcing practices had combined significant effect on the operational performance of the companies ($F = 18.16$, $p < 0.05$). Thus, the practices explained 27.3% variation in the companies’ operational performance (see R^2). (Table 6)

Table 6. Multiple regression model of logistics outsourcing practices and operational performance of manufacturing companies.

VARIABLES	(1) OLS vce (robust)	(2) Increase in production	(6) Clients demand	(11) Faster response to changes in production	(16) Reduction in Production Cost
TRM new	0.144 (0.119)	1.173 (0.349)	1.540 (0.503)	1.076 (0.372)	2.013*** (0.725)
STM new	0.154 (0.094)	2.920* (0.739)	3.488* (1.135)	1.881** (0.572)	1.307 (0.379)
FM new	0.419* (0.072)	4.011* (1.492)	5.958* (2.082)	3.781* (0.916)	1.062 (0.283)
Increase in production		.			
Constant	0.867* (0.299)				
Observations	260	260	260	260	260
R-squared	0.273				
r2_p	.	0.208	0.291	0.139	0.0456

Robust standard errors in parentheses; * $p < 0.01$, ** $p < 0.05$, *** $p < 0.1$; Source: Researchers’ computation, 2021.

7. Discussion of Findings

The study investigated the effects of logistics outsourcing on operational performance and productivity of manufacturing companies in Nigeria. The study used primary data and was conducted using selected manufacturing companies in south-west, Nigeria. The study found that all the stated indexes (operating profit, overhead cost, operational efficiency, customer service index, asset utilization and maintenance, product availability index) were responsible for choosing third party management option. The operating profit, operational efficiency, customer service index, asset utilisation and maintenance, and product availability before outsourcing was low consistently while the overhead cost before outsourcing kept increasing. This agreed with the study of [Zailani et al. \(2017\)](#), and [Rahman \(2011\)](#) who carried out an exploratory study of outsourcing 3PL services in Australian. The study used descriptive technique to analyse samples gotten from companies listed in Dun & Bradstreet's 500 largest Australian firms.

The study showed that the extent of logistics outsourcing among manufacturing companies in Southwestern, Nigeria was high. The logistics outsourcing for all the stated variables were above average. This agreed with [Rahman \(2011\)](#) who investigated logistics outsourcing practices in Malaysia, and Australia respectively. These studies concluded that the extent of logistics outsourcing practices employed by manufacturing firms were above average.

The study discovered that logistics outsourcing practices among manufacturing firms in the Southwestern Nigeria has been very effective. The reduction on transportation cost and the associated risks, proper storage management, reduction in warehouse cost, and asset/facility management has been very effective.

Finally, the study concluded that logistics outsourcing does significantly predict operational performance of manufacturing companies in the Southwestern, Nigeria. This agreed with the studies of [Musau \(2016\)](#) that cost driven outsourcing led to improved organizational performance by increasing operational efficiency and reduction in costs and risks associated with production. Also, [Solakivi et al. \(2011\)](#), concluded in their studies that there is a significant relationship between logistics outsourcing, operational performance and productivity.

The relationships between logistics outsourcing and operational performance was significantly predicted at ($R^2 = 0.113$, $F = 10.875$, $p < 0.01$) which implied that the overall model was significant, the null hypothesis (H_{01}) was rejected while the alternative hypothesis was accepted: Hence, logistics outsourcing does significantly predict operational performance of manufacturing companies in the Southwestern, Nigeria.

Findings from the study provided insight into the effectiveness of logistics outsourcing on operational performance and productivity of manufacturing companies in the Southwestern, Nigeria. The coefficient of variation (R) 0.336, and 0.522 depicted a positive relationship between logistics outsourcing, operational performance, and productivity.

The study therefore, concluded that logistics outsourcing does significantly

predict operational performance of manufacturing companies in the Southwestern, Nigeria; logistics outsourcing does significantly predict the productivity of manufacturing companies in the Southwestern, Nigeria. Based on the findings and conclusion reached, the study recommends as follows: Providers of Logistics services should be mindful on the need to provide excellent services at a minimal level of cost, otherwise high-cost impact could be a form of disincentive to engage the service or sustain the business relationship. They can offer creative services like co-location or shared cost to utilize resources at optimal level and also, third party logistics service providers should create a repository of business information and intelligence as a value-added offering to their clients to stimulate growth, perfect hiring/engagement of workforce and stay ahead of competition.

The study helped in creating additional knowledge based on logistics as it relates to performance of manufacturing companies. It also helped to improve understanding on logistics outsourcing among the manufacturers. Furthermore, It has provided information on the effect of outsourcing on organizational performance, thereby assisting organisations to identify their core functions or areas in business value chain to focus on those core imperatives while they give out the non-core, but important aspects of the job to the professionals who are experts in those responsibilities for ease of operations.

8. Suggestions for Further Studies

The study focused on logistics outsourcing and performance of manufacturing companies in food and beverages in Lagos, Oyo and Ogun states of Southwestern states of Nigeria, this limits the scope of researcher, hence, further studies could be explored in other sectors of manufacturing companies. In addition, manufacturing companies are located in all the states of Nigeria, this can further stimulate research interests with a wider geographical spread in Nigeria.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

- Chete, L. N., Adeoti, J. O., Adeyinka, F. M., & Ogundele, O. (2021). *Industrial Development and Growth in Nigeria: Lessons and Challenges*. No. wp-2014-019, WIDER Working Paper Series from World Institute for Development Economic Research (UNU-WIDER). <https://doi.org/10.35188/UNU-WIDER/2014/740-0>
- Cochran, W. G. (1963). *Sampling Techniques* (2nd ed.). John Wiley & Sons, Inc.
- Cronbach, L. J. (1951). Coefficient Alpha and the Internal Structure of Tests. *Psychometrika*, 16, 297-334. <https://doi.org/10.1007/BF02310555>
- Gotzamani, K., Pantelis, L., & Vouzas, F. (2010). The Logistics Services Outsourcing Dilemma: Quality Management and Financial Performance Perspectives. *Journal of Supply Chain Management*, 15, 438-453. <https://doi.org/10.1108/13598541011080428>

- Hilletofth, P., & Hilmola, O.-P. (2010). Role of Logistics Outsourcing on Supply Chain Strategy and Management: Survey Findings from Northern Europe. *Strategic Outsourcing: An International Journal*, 3, 46-61. <https://doi.org/10.1108/17538291011023070>
- Hsiao, H. I., van der Vorst, J. G. A. J., Kemp, R. G. M., & Omta, S. W. F. (O.) (2010). Developing a Decision-Making Framework for Levels of Logistics Outsourcing in Food Supply Chain Networks. *International Journal of Physical Distribution & Logistics Management*, 40, 395-414. <https://doi.org/10.1108/09600031011052840>
- Lawson, B., Tyler, B., & Potter, A. (2014). Strategic Suppliers' Technical Contributions to New Product Advantage: Substitution and Configuration Options. *Journal of Product Innovation Management*, 32, 760-776. <https://doi.org/10.1111/jpim.12235>
- Lin, Y., Pekkarinen, S., & Ma, S.-H. (2015). Service-Dominant Logic for Managing the Logistics-Manufacturing Interface: A Case Study. *The International Journal of Logistics Management*, 26, 195-214. <https://doi.org/10.1108/IJLM-08-2013-0095>
- McCarthy, I., & Anagnostou, A. (2004). The Impact of Outsourcing on the Transaction Costs and Boundaries of Manufacturing. *International Journal of Production Economics*, 88, 61-71. [https://doi.org/10.1016/S0925-5273\(03\)00183-X](https://doi.org/10.1016/S0925-5273(03)00183-X)
- Meixell, M. J., Kenyon, G. N., & Westfall, P. (2014). The Effects of Production Outsourcing on Factory Cost Performance: An Empirical Study. *Journal of Manufacturing Technology Management*, 25, 750-774. <https://doi.org/10.1108/JMTM-10-2011-0099>
- Musau, C. N. (2016). *The Impact of Strategic Outsourcing on Organizational Performance: A Case Study of Bidco Africa Limited*.
- Rahman, S. (2011). An Exploratory Study of Outsourcing 3PL Services: An Australian Perspective. *Benchmarking: An International Journal*, 18, 342-358. <https://doi.org/10.1108/14635771111153527>
- Solakivi, T., Töyli, J., Engblom, J., & Ojala, L. (2011). Logistics Outsourcing and Company Performance of SMEs. *Strategic Outsourcing: An International Journal*, 4, 131-151. <https://doi.org/10.1108/17538291111147982>
- Somuyuwa, A., Odepidan, O., & Dosunmu, A. (2016). Purchasing and Supply Chain Management. *European Journal of Logistics*, 4, 1-10.
- Töyli, J., Engblom, J., Ojala, L., & Solakivi, T. (2011). Logistics Outsourcing and Company Performance of SMEs: Evidence from 223 Firms Operating in Finland. *Strategic Outsourcing: An International Journal*, 4, 131-151. <https://doi.org/10.1108/17538291111147982>
- Wanke, P., Arkader, R., & Hijjar, M. (2008). The Relationship between Logistics Sophistication and Drivers of the Outsourcing of Logistics Activities. *Journal of Brazilian Administration Review*, 5, 260-274. <https://doi.org/10.1590/S1807-76922008000400002>
- Yamane, T. (1967). *Statistics: An Introductory Analysis* (2nd ed.). Harper and Row.
- Zailani, S., Shaharudin, M. R. Razmi, K., & Iranmanesh, M. (2017). Influential Factors and Performance of Logistics Outsourcing Practices: An Evidence of Malaysian Companies. *Review of Managerial Science*, 11, 53-93.

Appendix. Questionnaire

Department of Management and Accounting, Faculty of Administration,
Obafemi Awolowo University, Ile-Ife.

Dear respondent,

This questionnaire is designed to elicit information on **Logistics Outsourcing and Performance of manufacturing organizations**. Kindly respond to each question honestly. It is to be noted however, that the questionnaire is strictly for research and academic purposes, hence the confidentiality of all information supplied I assured.

Thank you.

Section A: Socio-Demographic Characteristics of Respondents

1	Gender:	Male	Female:				
2	Age (years)	20 - 30	31 - 40	41 - 50	51 - 60	61 - 70	71 and above
3	Educational Qualification:	ND/ A-Level	HND/ B.Sc.	Masters	Ph.D.	Others	
4	Years of experience:	1 - 5 years	6 - 10 years	11 - 15 years	16 years and above	61 - 70	
5	Position:	Entry level	Lower Mgt	Middle Mgt	Senior Mgt		

Section B: Effect of Logistics Outsourcing on Operational Performance of Manufacturing Companies

6. Please indicate [] your opinion on the effect of logistics outsourcing on the operational performance of your organisation.

1 = Very Low, 2 = Low, 3 = Average, 4 = High, 5 = Very High

S/N	Operational Performance	1	2	3	4	5
i.	Increase in sales					
ii.	Inventory accuracy					
iii.	Reduced road traffic/Loss time accidents					
iv.	Cost reduction					
v.	Timely delivery of services					
vi.	Increase in revenue					

Thank You for Your Effort.