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### Logistic Outsourcing and its Effect on Efficiency of Consumer Food Firms: A study of Grand Cereal Company Jos, Plateau State

BY

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#### Abstract

*The study analyzed logistic outsourcing and its effect on the efficiency of consumer food firm; a study of Grand Cereal Jos Plateau State. Specifically, It analyses the effect of transportation, warehouse management, packaging and material handling on the efficiency of Grand Cereal Jos. A survey research design was adopted for the study. The population consisted of 212 employees of some selected departments concerned with outsourcing logistic services, a census sampling was adopted while primary data was obtained through the administration of a questionnaire. Multiple regression analyses was used to analyze the data obtained. The study concludes that logistic outsourcing has significant effect on the efficiency of Grand Cereal Jos. Specifically result from the regression analyses revealed that transportation, warehouse management, packaging and material handling had positive significant effect on the efficiency of Grand Cereal Jos. The study recommends amongst others that further attention should be given to optimizing contract terms and managing relationships with service providers as implementing performance metrics and regular reviews can help ensure that the outsourcing arrangement continues to deliver the desired efficiency gains.*

**Keywords:** Logistic outsourcing, transportation, warehouse management, packaging and material handling

#### Introduction

Globalization has stiffened the business environment through increased complexity, wide range of products and services, and increased demands from consumers which has necessitate companies to increased their operations. This has brought numerous challenges, ranging from material sourcing, production overheads and cost of sales. In Nigeria, significant infrastructural deficiency have continually impeded the movement of products throughout the country. Prominent amongst them are; poor road networks, unreliable power supply, and inadequate storage facilities leading to a high rate of product spoilage and a continuous decline in efficiency for companies. (Owusu, 2018). Chete, et al (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, delivery to customers and erode their efficiency.

The consumer food industries globally play crucial role in any economy, providing goods almost at the door steps of people,

employing significant number of the population and contributing to the economic development of the country. However, within the past year in Nigeria, Jumia, the continent's leading online retailer exited their food delivery services company, known as "Jumia food" which sent shockwaves through the African e-commerce spine (Owusu, 2018). Firms like Unilever announced the closing of its operations in Nigeria. According to the Daily trust news, June 25, 2024, ShopRite, a key player in the marketing and distribution of consumer goods products announced it is closing down some of its branches, particularly in Wuse zone 4 in Abuja. This worrisome trend has attracted the attention of stakeholders including the academia on alternative means of reviving this sector and protecting indigenous consumer firms such as Grand Cereal company from eminent collapse.

Grand Cereals Limited, like many other consumer goods firms, faces challenges related to the effective management of its logistics functions these is attributed to the current economic climate both within and outside the country, and the complexities of the business cycle in the contemporary dispensation as well as poor infrastructural facilities to



support efficient movement of goods. This has heighten the need for Grand Cereals to increase operational efficiency through ensuring timely delivery of their products, reduce operations lead time and minimize wastages, offer quality products and services that exceed customers' expectations, and reduce operations overhead as these would increase overall efficiency, and competitive advantage. Although, different consumer firms have adopted various mechanisms such as reconfigurations of processes; value creation processes dispersion and reduced product life cycle so as to increase efficiency in business operations (Vagadia, 2012) this has yielded little positive outcomes in terms of their efficiency.

One of the strategies gaining attention is logistics outsourcing, it is the movement of organization logistics functions to third party organization to be performed. Logistics outsourcing is the act of subcontracting logistics activities to firms equipped to provide the services (Lynch, 2004). According to Kumar, et al (2016), organizations across the world view logistics function as of strategic essence owing to competitive pressures within a given industry. This is particularly true in developed countries such as the US, UK, China, Germany and France where consumer goods firms seek ways to improve competitive advantage and more so efficiency with an inclination on the logistics function among other functions in the organization. Firms such as those in consumer food engage other organizations to provide such services as transportation management, warehousing services, packaging, IT and material handling services on the foregoing logistics function. Indeed, it is observed that firms primarily outsource such logistics function in order to reduce costs, improve product quality and enhance efficiency (Lau & Zhang, 2016) and importantly achieve a higher market share (Skjoett-Larsen, 2022). Among such organizations are, Coca-Cola Hellenic Nigerian Bottling Company, Friesland and Campina WAMCO Nigeria Plc, CHI Ltd and Rite foods Ltd.

The uniqueness of this study cannot be overemphasized as it exploits on the major aspect of outsourcing that have previously not considered by scholars and how they collectively affect efficiency. Specifically, the study examined transportation outsourcing, warehouse management, packaging and material handling outsourcing as well as their effect on efficiency of Grand Cereals Limited in Jos, Plateau State.

The study is structured as follows, Introduction, Theoretical Foundation, Review of literature, Methodology Discussion of results, Conclusion and Findings.

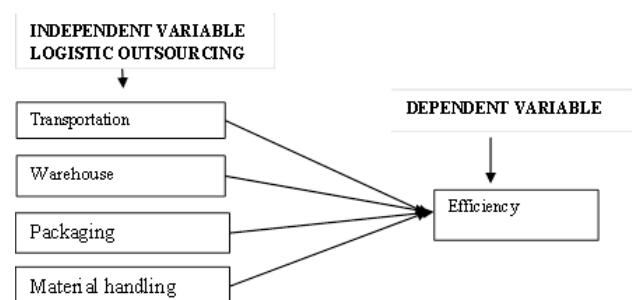
## Theoretical Foundation

The study is premise on Transaction Cost Theory (TCT), developed by Oliver Williamson in 1979, The theory provides a framework for understanding why firms choose to perform certain activities internally while outsourcing others. It assumed that cost arise due bounded rationality and opportunism. This means people are influenced by self-interest and guile. Second assumption is that transaction costs are inherent. Thirdly, organizational structure affects

transaction cost; optimal structure minimizes transaction costs. Thus, the transaction cost theory seeks to explain the motive behind companies opting to source out some of their activities to the external environment as opposed to performing these activities in-house as this has the potential to reduce cost and enable firms to concentrate of their strength thus achieving the desired level of efficiency.

The usefulness of this theory cannot be overemphasized, are it identifies some of the triggers of cost and how it can be minimized to attain the desired level of efficiency which can be achieve through outsourcing logistic services such as transportation, warehouse, packaging outsourcing and material management services.

## Conceptual Framework



**Figure 1: Conceptual Framework**

## Outsourcing Logistics and Efficiency

Outsourcing is a strategy by which an organization contracts out major functions to specialized and efficient service providers, who become valued business partners.

It can also be defined as the process of establishing and managing a contractual relationship with an external supplier for the provision of capacity that has previously been provide in-house (Prokopenko, 2017). The Council of Supply Chain Management Professionals (CSCMP) defines logistics as the portion of the supply chain process that coordinates the efficient, effective flow of goods, services, and related information from the point of origin to the point of consumption in order to satisfy customer needs (El-Sakty&Okorie, 2020). Logistic outsourcing, according to Fadile, et al (2018), is the use of external vendors to carry out some or all of an organization's typically in-house logistics functions. According to Aliona et al. (2023), outsourcing logistics assumes responsibility for non-core business processes, reduces costs and lead times from order to delivery, speeds up capital turnover, and takes use of synergies to achieve efficiency.

Efficiency is thus, a measure of inputs relative to output, in terms of quality, time, resources and cost. The efficiency of logistic outsourcing companies determines their competitiveness and success. Min and Joo (2016) studied the US logistic outsourcing companies and confirmed this relationship. It was found that the ones with higher efficiency would have higher financial performance. Efficiency is

generally evaluated from five perspectives, including quality, cost, speed, flexibility and dependability (Brown, 2015). The study examined four major aspect of logistic outsourcing to include; transportation, warehouse, packaging and material handling on efficiency measured in terms of cost reduction.

**a. Transportation management outsourcing:**

Transport management outsourcing is the upstream and downstream movement of goods/services at the firm. Most logistic costs are incurred in a firm's transport operations and thus management of transport activities is very crucial in supply chain optimization (Okyere et. al 2023). Transportation in logistics management exists as a single concept. Thus, success in the transportation is subject to well-coordinated logistics operations. In addition, firms' transportation activities are geared towards increasing customer satisfaction levels at the least possible cost. The primary motivation for outsourcing transportation management services to third-party logistics providers is to lower costs, maintain low inventory levels, and ultimately improve customer satisfaction (Lieb & Kendrick, 2022).

**b. Warehouse Management outsourcing:**

A warehouse is a storage facility for materials, semi- finished and final consumable products. Warehouse management activities involve storage, control, and internal movement of material and processing of associate transactions such as distribution, unloading, storing and selection based on information from the Bin Card. Warehouse management system enhances movement along the warehouse. It ensures both its layout and overall warehouse structure is suitable for efficient communication and effectiveness in the tracing and merchandising systems (Lahmar et.al, 2007).

**c. Packaging outsourcing.**

packaging outsourcing is the outsourcing of packaging tasks to expert providers. It encompasses activities such as filling, packing and labeling. Businesses often engage the services of contract packaging services when they do not have the facilities, machinery or expertise to carry out quality packing tasks in-house. In some instances, packaging companies may handle the packaging, design and production more efficiently, speeding up your time to market and allowing you to dedicate your valuable resources to growing your business which invariably lead to efficiency (Antonio & Joao, 2011).

**d. Material Handling Outsourcing**

Material handling is the movement of materials and goods from one location to another. It includes protecting, storing, and controlling the materials, from manufacturing to distribution. Material handling equipments utilizes manual, semi-automated, and automated equipment to assist the movement and storage of materials and finished goods. Material handling outsourcing entails third party service provider carrying out this function, for the company. Major player here are forklift companies. Usually employed by large manufacturing plants, aviation industry and shopping companies (Satya & Shivamurti 2018).

## Empirical Review

Studies relating to logistic outsourcing were reviewed below; Sidi & Nyaberi (2024), conducted a study on 'Transport Outsourcing and Supply Chain Performance in the Pharmaceutical Industry in Mombasa County'. The study used descriptive cross-sectional research design targeting 36 pharmaceutical firms comprising 4 local pharmaceutical manufacturing, 35 importing firms, and 34 drug wholesalers and retailers in Mombasa County. The study found that that transport outsourcing had a significant association with the improvement of the supply chain performance of the pharmaceutical industry in Mombasa County Kenya.

Yang et al. (2024) explored logistics outsourcing in their research titled "Logistics outsourcing strategy with online freight platforms." This study focused on manufacturers and third-party logistics service providers (TLSP). The findings revealed that differences in service levels and prices significantly influence outsourcing strategies, and contrary to expectations, the emergence of OFPs does not necessarily threaten TLSP operations.

In a related development, Andrejić and Pajić (2024) conducted a study on Strategies for Effective Logistics Outsourcing: A Case Study in the Serbian Market," The study examined logistics outsourcing processes in businesses within the Serbian market. Through an in-depth case study, they analyzed various logistics activities such as transportation, customs clearance, warehousing, and software implementation. The findings emphasized the advantages of outsourcing multiple services rather than singular ones, enhancing operational efficiency while highlighting the risks of dependency and potential loss of control.

Adonye et al. (2024) investigated logistics outsourcing strategies in the Niger Delta oil and gas sector in their research titled "Evaluation of Logistics Outsourcing Strategies in the Oil and Gas Companies in Niger Delta Region." The study adopted a cross-sectional research design and examined 51 oil and gas companies in the region. Using descriptive statistics and SPSS for analysis, the study found several challenges in outsourcing logistics, including inadequate technology, mismatched service quality, and delays in service provision

Li et al. (2024) explored "Original equipment manufacturer with remanufacturing: Outsourcing strategy and organizational structure." The population was original equipment manufacturers (OEMs) with both manufacturing and remanufacturing divisions. The study employed game-theoretic models to assess the impact of outsourcing decisions and organizational structure, though the sample size was unspecified. The results indicated that the cost advantage of suppliers and remanufacturing savings significantly influenced outsourcing decisions.

Mbanje (2024) carried out a study on "The influence of business process outsourcing on the productivity of mobile telecommunication companies." The study focused on mobile telecom companies in Southern Africa, with a sample size of

210 employees. The methodology involved structured closed-ended questionnaires and descriptive and chi-square tests to analyze data. The findings revealed a statistically significant relationship between business process outsourcing (BPO) and firm productivity, highlighting BPO's positive impact on operational efficiencies and productivity levels in mobile telecom operators.

Guchhait (2024) conducted a study titled "A decision-making problem for product outsourcing with flexible production under a global supply chain management." This research focused on the factors influencing product outsourcing decisions within the context of a global supply chain, considering international taxes, dollar rates, and tariffs. The study used a classical optimization technique to determine the global optimum profit for global supply chain management. It highlighted that flexible production, production-transportation lead time, and two-stage safety factors of retailers are crucial in decision-making. The findings showed that profits are higher when retailers are located in low-economy countries with high service levels, while retailers in high-economy countries with no service experience a 57.98% loss compared to the original profit.

Chukwu et al. (2024) examined "The Effect of Logistics on the Performance of Transportation Firms in Enugu State, Nigeria." The study aimed to investigate the effect of logistics demand planning and storage and material handling on the performance of selected transportation firms in Enugu State, including ABC Transport, Peace Mass Transit, Young Shall Grow, and Enugu State Transport Company. The research involved a sample size of 400 respondents drawn from a population of 1,052 staff members. Using single regression analysis, the study found that logistics demand planning significantly affected the safety of transportation.

## Methodology

The study adopted a survey research design. This design was chosen because it is an efficient method for establishing the relationship between variables (Sekaran, 2003). The population of the study focuses on staff in the account, admin, supply chain, and production departments of Grand Cereals Limited, totaling 212 employees, because these departments are integral to logistics operations and organizational efficiency. A census sampling technique was adopted since the population was not large. The data was obtained through close ended questionnaire while regression analysis was used in analyzing the study.

## Validity of Instrument

Content validity ratio (CVR) was calculated for each item. Items that were not significant at critical level or have a minimum value of CVR, P less than 0.5 were eliminated with CVR values ranging between -1 (perfect disagreement) and +1 (perfect agreement) with CVR values above zero Law she (1975). CVR is a linear transformation of a proportional level of agreement on how many experts" within a panel rate an item "essential" calculated in the following way.

$$CVR = n_e - \frac{\left(\frac{N}{2}\right)}{\frac{N}{2}}$$

Where;

CVR= is the content validity ratio.

$n_e$  = is the number of panels members indicating the item is "essential".

$N$  = is the tested number of panel members.

$$(1) \frac{7 - \left(\frac{8}{2}\right)}{\left(\frac{8}{2}\right)} = \frac{7 - 4}{4} = \frac{3}{4} = 0.75$$

$$(2) \frac{6 - \left(\frac{7}{2}\right)}{\left(\frac{7}{2}\right)} = \frac{6 - 3.5}{3.5} = \frac{2.5}{3.5} = 0.70$$

$$(3) \frac{5 - \left(\frac{6}{2}\right)}{\left(\frac{6}{2}\right)} = \frac{5 - 3}{3} = \frac{2}{3} = 0.65$$

$$(4) \frac{7 - \left(\frac{8}{2}\right)}{\left(\frac{8}{2}\right)} = \frac{7 - 4}{4} = \frac{3}{4} = 0.75$$

The final evaluation to retain the item based on the CVR depends on the number of panel members that indicates an item "essential".

**Table 1: Content Validity Ratio**

Variables	Questions/items	N	Ne	CVR Value
<b>Transportation management outsourcing</b>	4	8	7	0.75
<b>Warehouse management outsourcing</b>	4	7	6	0.70
<b>Packaging outsourcing</b>	5	6	5	0.67
<b>Material handling outsourcing</b>	5	7	6	0.70
<b>Efficiency</b>	5	8	7	0.75

Source: Field Survey (2024)

**Table 3. Cronbach Alpha Reliability Ratio**

Items	Cronbach's Alpha	Composite reliability	Average Variance Extracted (AVE)
<b>Transportation management outsourcing</b>	0.7	0.8	0.6
<b>Warehouse management outsourcing</b>	0.9	0.7	0.7
<b>Packaging outsourcing</b>	0.8	0.7	0.7
<b>Material handling</b>	0.9	0.8	0.7



<b>outsourcing</b>				
<b>Efficiency</b>	0.7	0.7	0.9	0.6

**Source:** Field Survey (2024)

### Model Specification

This study formulates the following model to be used by the researcher in the investigation. Thus, this regression equation could be expressed as follows:

### Models' variable

Efficiency (E) = Logistic Outsourcing (LO)

$$E = \beta_0 + \beta_1 \text{TMO} + \beta_2 \text{WMO} + \beta_3 \text{PO} + \beta_4 \text{MHO} + \varepsilon \dots\dots\dots (1)$$

Where:

TMO= Transportation Management outsourcing

WMO= Warehouse Management outsourcing

PO= Packaging outsourcing

MHO= Material handling outsourcing

E = Efficiency

$\varepsilon$  = is error term.

$\beta_0$  = the regression constant

$\beta_1, \beta_2, \beta_3$  and  $\beta_4$  = coefficients for the independent variables

## Discussion of Result

### Model Analysis

**Table 3: Model Analysis**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.510 <sup>a</sup>	.212	.202	3.12583

a. Predictors: (Constant), Transportation management outsourcing, packaging management outsourcing, Material handling management outsourcing, Warehouse management outsourcing

The model demonstrates a moderate correlation between the predictors and the dependent variable, with an R Square value indicating that about 21.2% of the variation in the dependent variable can be explained by the independent variables. While this indicates that the predictors have some influence, the relatively low R Square suggests that other variables not included in the model could be significant in explaining the variation in the dependent variable. The adjusted R Square, which is slightly lower than the R Square, accounts for the number of predictors in the model, offering a more conservative estimate of the model's explanatory power. The standard error indicates the average distance of the observed values from the regression line, suggesting that there is room for improvement in the model's predictive accuracy.

## Analysis of Variance (ANOVA) for the Regression Model

**Table 4. Analysis of Variance (ANOVA)**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regr essio	1540.899	4	308.000	31.52	.000 <sup>b</sup>

n			
Resid ual	526.995	209	2.521
Total	2066.995	214	

a. Dependent Variable: Efficiency

b. Predictors: (Constant), Transportation management outsourcing, packaging management outsourcing, Material handling management outsourcing, Warehouse management outsourcing

Table 4. reveal that, the regression sum of squares is significantly high (1540.000), indicating that a substantial portion of the variability in efficiency is explained by these predictors. Concurrently, the residual sum of squares (526.995), shows that much less variability remains unexplained by the model. The mean square values reinforce this, with the regression mean square at 308.000 and the residual mean square of 2.521. The F-statistic of 31.52, highlight the significant impact of the independent variables on efficiency. While the p-value was highly significant at 0.000, confirming that the strong relationship between the predictors and efficiency is not due to chance.

## Regression Coefficient

**Table 5: Coefficients**

Model	Unstandardized Coefficients	Standard Error	T	Sig.
	B	Std. Error	Beta	
1 (Constant)	30.191	2.896	10.424	.000
Transportation management outsourcing	.588	.280	.086	1.095 .002
Warehouse management outsourcing	.241	.286	.341	2.473 .000
Packaging management outsourcing	.103	.198	.402	.029 .007
Material handling management outsourcing	.113	.390	.107	1.251 .001

The regression coefficients table provides insights into the effects of various types of outsourcing on the efficiency of Grand Cereals Limited, Jos, Plateau State. The unstandardized

coefficients (B) represent the change in efficiency for each unit increase in the independent variables, while the standardized coefficients (Beta) allow for comparison of the relative importance of each variable. The significance levels (Sig.) help determine whether the effects of the independent variables on efficiency are statistically significant.

**Ho<sub>1</sub>: Transportation management outsourcing has no significant effect on the efficiency of Grand Cereals Limited, Jos, Plateau State.**

Result from table 5. shows that the coefficient for Transportation Management Outsourcing is 0.588, with a p-value of 0.002. Since the p-value is less than the standard significance level of 0.05, the null hypothesis is rejected. This indicates that transportation management outsourcing has a statistically significant effect on the efficiency of Grand Cereals Limited.

**Ho<sub>2</sub>: Warehouse management outsourcing has no significant effect on the efficiency of Grand Cereals Limited, Jos, Plateau State.**

From table 5. it revealed that the p-value is much lower than 0.05, which implied that the null hypothesis is rejected. This result shows that warehouse management outsourcing has a significant and positive effect on efficiency.

**Ho<sub>3</sub>: Packaging management outsourcing has no significant effect on the efficiency of Grand Cereals Limited, Jos, Plateau State.**

The coefficient for Packaging Management Outsourcing is 0.103, with a p-value of 0.007. Since the p-value is below 0.05, the study rejects the null hypothesis. This implies that packaging management outsourcing significantly influences efficiency.

**Ho<sub>4</sub>: Material handling management outsourcing has no significant effect on the efficiency of Grand Cereals Limited, Jos, Plateau State.**

The coefficient for Material Handling Management Outsourcing is 0.113, with a p-value of 0.001. As the p-value is less than 0.05, we reject the null hypothesis. This result suggests that material handling management outsourcing significantly affects profitability.

## Discussion of Findings

These findings are interpreted in the context of existing literature, theoretical frameworks, and practical implications for the company.

### Transportation Management Outsourcing

The results indicate that transportation management outsourcing has had a significant positive impact on various aspects of the company's operations. Respondents strongly agreed that outsourcing led to improvements in the quality of transportation services, ensured timely deliveries, reduced maintenance costs, and mitigated transportation risks. These findings align with Sidi and Nyaberi's (2024) who also found that transport outsourcing significantly improved supply chain

performance by enhancing route planning and management systems.

### Warehouse Management Outsourcing

The findings on warehouse management outsourcing reveal a generally positive perception among respondents. The data shows that outsourcing has effectively reduced capital expenditure, labor costs, and overheads, while also improving inventory accuracy and operational lead times. This finding accuracy aligns with Li et al. (2024) who highlighted the benefits of warehouse outsourcing in enhancing company performance and agility during crises. Their case study demonstrated that total outsourcing of warehousing constraints led to significant operational improvements.

### Packaging Outsourcing

Packaging outsourcing was found to have a positive impact on efficiency, particularly in terms of reducing capital investment and labor costs, accessing high-quality packages, and minimizing wastages. These findings support the notion that outsourcing packaging functions can lead to significant cost savings and operational efficiencies, allowing the company to focus on its core activities. This finding resonates with Yang et al. (2024), who explored logistics outsourcing strategies involving online freight platforms. Their study showed that outsourcing could lead to significant improvements in operational efficiency.

### Material Handling Outsourcing

The results for material handling outsourcing demonstrate strong agreement among respondents on the benefits of outsourcing in this area. The high mean scores for efficiency improvements, elimination of material wastages, and the use of advanced technologies indicate that outsourcing has significantly enhanced the company's material handling processes. This corroborates the findings of Andrejić and Pajić (2024). Their case study on logistics outsourcing in the Serbian market emphasized the benefits of enhanced efficiency and streamlined operations through effective logistics partnerships. These findings are consistent with the literature on supply chain management, which emphasizes the role of outsourcing in improving operational performance and scalability. However, the slightly lower score for risk reduction suggests that while outsourcing has been effective in many areas, there may still be challenges related to managing risks such as theft and damages.

This study seeks to explore how logistics outsourcing, specifically in transportation management, warehouse management, packaging, information management, and material handling management, affects the efficiency of Grand Cereals Limited in Jos, Plateau State.

## Conclusion

This study has systematically examined the effect of various outsourcing practices on the efficiency of Grand Cereals Limited, Jos, Plateau State. The findings indicate that all four areas of logistics outsourcing, such as Transportation Management, Warehouse Management, Packaging and Material Handling have a positive and significant effect on the

company's efficiency. These findings demonstrate that outsourcing various operational functions can lead to significant improvements in efficiency for Grand Cereals Limited. The positive impact across all areas underscores the strategic importance of logistics outsourcing as a tool for enhancing efficiency.

## Recommendations

Based on the study's findings, the following recommendations are made:

- i. While transportation management outsourcing has shown positive results, further attention should be given to optimizing contract terms and managing relationships with service providers. Implementing performance metrics and regular reviews can help ensure that the outsourcing arrangement continues to deliver the desired efficiency gains.
- ii. Despite the benefits of warehouse management outsourcing, the company should focus on developing robust risk management strategies to address potential challenges. This includes ensuring that outsourcing partners adhere to high standards of service and have contingency plans in place for disruptions.
- iii. To maximize the benefits of packaging outsourcing, Grand Cereals Limited should regularly evaluate the packaging processes and seek opportunities for further optimization. This may involve exploring innovative packaging technologies and practices that can reduce costs and improve sustainability.
- iv. The benefits of material handling outsourcing can be further enhanced by focusing on continuous improvement and technological advancements. Regular assessments of material handling processes and investments in new technologies can help maintain efficiency and sustainability.

## Suggestions for Further Studies

Future research should explore the long-term impact of outsourcing on efficiency by considering a broader range of industries and regions, including comparisons between companies that extensively outsource and those that do not. Additionally, studies could investigate the role of specific factors such as technological advancements, economic fluctuations, and regulatory changes on the effectiveness of logistics outsourcing strategies. Examining the potential risks associated with outsourcing, such as loss of control over critical operations and dependency on external service providers, would also be valuable.

## Contribution to Knowledge

This study has explicitly explored specific logistics outsourcing variables such as transportation, warehouse, packaging, and material handling outsourcing, and their effects on efficiency particularly in a consumer firm; providing a comprehensive knowledge on each of these variables, which previous studies failed to explicitly capture. Theoretically, transaction theory was used in the study to justify the need for firms to consider outsourcing key aspect

of operations to enhance efficiency and reduces considerable amount of cost.

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