



COMPARATIVE STUDY OF LOGISTICS OUTSOURCING AND IN-HOUSE SERVICES ON CUSTOMER SATISFACTION AMONG NIGERIAN MANUFACTURING COMPANIES

Omona-a Hamilton Horsfall (PhD)¹, Prof. Leo U. Ukpong² and

Mrs. Uduak Joseph (Ph.D)³

¹Department of Marketing, Faculty of Business Administration, University of Uyo, Akwa Ibom State, Nigeria

²Dean, Faculty of Business Administration, University of Uyo, Akwa Ibom State, Nigeria

³Head of Department Marketing, Faculty of Business Administration, University of Uyo, Akwa Ibom State, Nigeria.

ABSTRACT: *This study compared logistics outsourcing and in-house logistics services as they affect customer satisfaction in terms of speed of service delivery, service flexibility, service dependability and service effectiveness. This study adopted survey design with questionnaire responses from 800 customers of the ten (10) outsourcing and ten (10) non-outsourcing manufacturing companies in Nigeria. A convenience sampling technique was applied and data collected were analyzed using descriptive and inferential statistics. The independent samples t-test was used to test the hypotheses at 0.05 level of significance. The result showed that the average mean ($m = 13.96$) scores value of the customers of outsourcing companies is greater than the average mean ($m = 11.63$) scores value of the customers from in-house services companies. Also, found that the mean ($M = 12.72$) scores value of the outsourcing companies' customers is greater than the average mean ($m = 10.74$) scores value of the customers from in house services companies' customers. The result also showed that the mean ($m = 13.96$) score value of the in-house services companies' customers is higher than the mean ($m = 13.72$) scores value of the outsourcing companies' customers. Based on the findings, it was recommended that manufacturing companies in Nigeria both outsourcing and in-house services should focus more on the core business activities they have advantages and can do better than its competitors. Then, outsource non-core business activities to other firms who can do it better than themselves.*

KEYWORDS: Logistics Outsourcing, In-House Services, Customer Satisfaction, Service Delivery, Manufacturing Companies, Nigeria

INTRODUCTION

Manufacturing companies are usually confronted with the important decision whether to outsource their logistics functions or to perform them in-house. Others prefer performing logistics services themselves, to maintain control of their supply chain internally.

Companies choosing to adopt in-house logistics services may have very complex supply chain and increase customer's demand challenges. In-house logistics service is a management strategy wherein a business organization uses her in-house employee to perform logistics functions. The manufacturing companies choosing to adopt in-house services typically do so for the following reasons:



- i. Logistics is already considered a core competency
- ii. In-house expertise exceeds the capabilities of most third-party logistics (3PL) service provider.
- iii. Logistics functions are too complex to use outsourcing
- iv. It is too difficult to integrate external information systems and flows.
- v. Companies know their business much better than a third-party logistics (3PL) ever could.
- vi. A belief that cost reductions would not be realized through outsourcing
- vii. It is based solely on mere belief that outsourcing strategy may be unsuccessful.

On the other hand, outsourcing has become a competitive imperative for many companies. The growth of the internet, customer revolution, product variety, and the heightened expectations of customers, have forced companies to focus on core competencies instead of vertical integration (Kulkarni and Sharma, 2008). This means that, logistics activities previously coordinated within one firm are now being allocated to different firms and coordinated actions now have to span the boundaries of these firms. Integration within a firm is thus replaced by integrative efforts across the boundaries of several firms. This trend of change in the logistics system puts the emphasis on the crucial role of businesses relationships. Logistics outsourcing is a management art wherein a business contract with a third-party logistics (3PL) service provider to provide services that might otherwise be performed by in-house employees of the outsourcing company at a minimal cost.

However, manufacturing companies adopting outsourcing or in-house method to perform its logistics functions needs to develop a competitive and consistent manufacturing strategy to cope with the dynamic business environment (Platts, Probert and Canez, 2002). The ultimate strategic goal is to develop core competencies that would satisfy the customer. The focus is on core competencies and utilizing qualified vendor to provide services that are not of the organization's core business, such that the organization's risk can be minimized and shared with its supplier. The core competencies are "the special skills, owners of intellectual technologies, innovative combinations of knowledge and unique operating business methods that provide the product or the services that customers value and want to buy" (Greaver, 2000: p 117).

In addition, outsourcing or in-housing services as a business strategy is expected to help the manufacturing companies to move towards having a competitive advantage and thereby serve their customers better. Today, companies are realizing the significance of quality product, quality service, and speed of service delivery, service flexibility, service dependability, service effectiveness and on time delivery which leads to customer satisfaction. Customer satisfaction is the outcome felt by those that have experienced a company's performance and have fulfilled their expectations. Outsourcing and in-house services are important supply chain. Management strategy that has received a lot of attention from manufacturing companies in Nigeria and globally. Manufacturing companies usually adopt outsourcing or in-house services as a result of stiff competition and the need for prompt responsiveness to



market demand. Besides, both strategies were designed to satisfy customers demand, reduce customer response time, reduced supply chain cost, on time delivery of goods and services.

Contract logistics and outsourcing logistics function to third party logistics (3PL) generally are the same thing (Lieb and Wassenhove, 1993). This involves the use of external firms to perform logistics activities, which have been previously performed in-house. The third-party logistics services providers may perform all the activities or some of the logistics functions within the process (Sahay and Mohan, 2006). A key rationale for such outsourcing is that with intensified global competition, firms are concentrating their energies on core business functions that are critical to survival, and leaving the rest to specialist firms (Bhatnagar and Viswanathan, 2000). Therefore, outsourcing strategy is art of replacing the in-house services by contracting it out to external companies. The replacement of in-house services is done in other to add value particularly with respect to improved customer service delivery. In the same vein, outsourcing previously adopted was unsuccessful. In this regard, one might wonder if outsourcing or in-house services actually has a significant impact on organizational performance in terms of service delivery to their customers. Therefore, the study compares outsourcing companies and in-house logistics services companies' effect on customer satisfaction in terms of speed of service delivery, service flexibility, service dependability and service effectiveness.

Statement of the Problem

Today, there is an increasing trend to outsource or to perform the same logistics functions in-house among manufacturing companies in Nigeria. The idea of outsourcing strategy and in-house services option is that, it helps companies to perform well in their core competencies in order to serve the customer adequately and indeed satisfy them.

Customer satisfaction is very fundamental of any successful business, because customer satisfaction leads to brand loyalty, positive word of mouth and repeat purchase. Customer expectations are the key factor behind satisfaction. When customers have high expectations and the really fall short, they will be disappointed and will likely rate their experience dissatisfying. Customer satisfaction is an important factor to evaluate the effect of outsourcing and in-house services. Therefore, business needs to focus on this, if they want to remain in business in the long-run.

Despite the apparent increase in logistics outsourcing and in-house services research and the growth of the Nigerian manufacturing industry. Most of the researchers focus more on the impact of the business performance in terms of profitability, costs, market share and sales growth. But the impact is not only on the business performance but also the customer's perception of the service delivery. The essence of profitability, market share and sales growth among others is a function of customer satisfaction. Customer satisfaction is the outcome felt by the customers of how products and services supplied by a company meet or surpass their expectations. Customer satisfaction is an asset that should be monitored and managed just like any physical asset. Therefore, studies that examine the effect of logistics outsourcing and in-house services on customer satisfaction in terms of speed of service delivery, service flexibility, service dependability and service effectiveness appear scare. This study was set out to compare the effect of logistics outsourcing and in-house services on customers' satisfaction among selected Nigerian manufacturing companies.



Objective of the Study

The main objective of the study is to investigate the effect of outsourced logistics services and in-house services on customer satisfaction among manufacturing companies in Nigeria. The study seeks to achieve the following specific objectives:

- i. To examine the speed of service delivery between companies that outsource logistics functions and those that do not outsource.
- ii. To determine the level of service flexibility between outsourcing and non-outsourcing companies.
- iii. To examine the level of service dependability between the firms that outsource and those that performs the functions in-house.
- iv. To ascertain the level of service effectiveness between the companies that outsource and those providing the services in-house.

Research Questions

The study addresses the following research questions:

- i. In what way(s) do companies that outsource logistics functions more competent in service delivery to the customer than those that perform the function in-house?
- ii. How do companies that outsource logistics services more flexible in serving customers than those that perform the function in-house?
- iii. In what way(s) do customers experience dependable service delivery with firms that outsource logistics compared to those that do not outsource?
- iv. Do organizations that outsource logistics services serve their customers more effectively than those that do not outsource?

Research Hypothesis

The following research hypotheses were formulated to guide the study:

- H_{0i}: There is no difference in service delivery time between outsourcing and non-outsourcing companies.
- H_{0ii}: There is no difference in service flexibility between outsourcing firms and non-outsourcing firms.
- H_{0iii}: There is no difference in service dependability between outsourcing and non-outsourcing companies.
- H_{0iv}: There is no difference in service effectiveness between outsourcing and non-outsourcing firm.



Significance of the Study

It is hoped that, the findings and recommendations from this study will help manufacturing companies to identify the factors that influence customer's satisfaction.

Also, it will provide insight to the manufacturing companies on the merits of focusing on core functions required by the companies. In other words, firms that focus on their core functions might do better than their competitors in serving the customers.

In addition, the customer will receive added value superior to the previous offer. It will guide suppliers and middlemen on logistics operation, in order to improve on responsiveness and operational flexibility.

It will provide insight to the government to outsource certain contract and handle some within as direct labour.

Finally, this research will serve as a guide to manufacturing companies on how to avoid business activities that may lead to dissatisfaction from customers. Though, not only positive customer satisfaction help business, but also lack of satisfaction takes on even bigger toll on the bottom line.

Scope and Limitation of the Study

The scope of the study consisted of all the customers of 10 selected in-house services manufacturing companies and 10 outsourcing adopted manufacturing companies in Nigeria.

The study is limited in scope because it used data collected from 10 selected outsourcing company's customers and 10 non-outsourcing manufacturing company's customers only, due to the non-availability of listed transactional information by most manufacturing firms.

REVIEW OF RELATED LITERATURE

The literatures on the study were reviewed on three main segments. These segments are conceptual review, theoretical review and empirical review of literatures.

Conceptual Review of Topics

To help discuss the conceptual review of the study, a conceptual model has been constructed. The conceptual model specifies that customer satisfaction is a function of transportation, warehousing, packaging and procurement outsourcing and in-house services as presented in figure 2.1

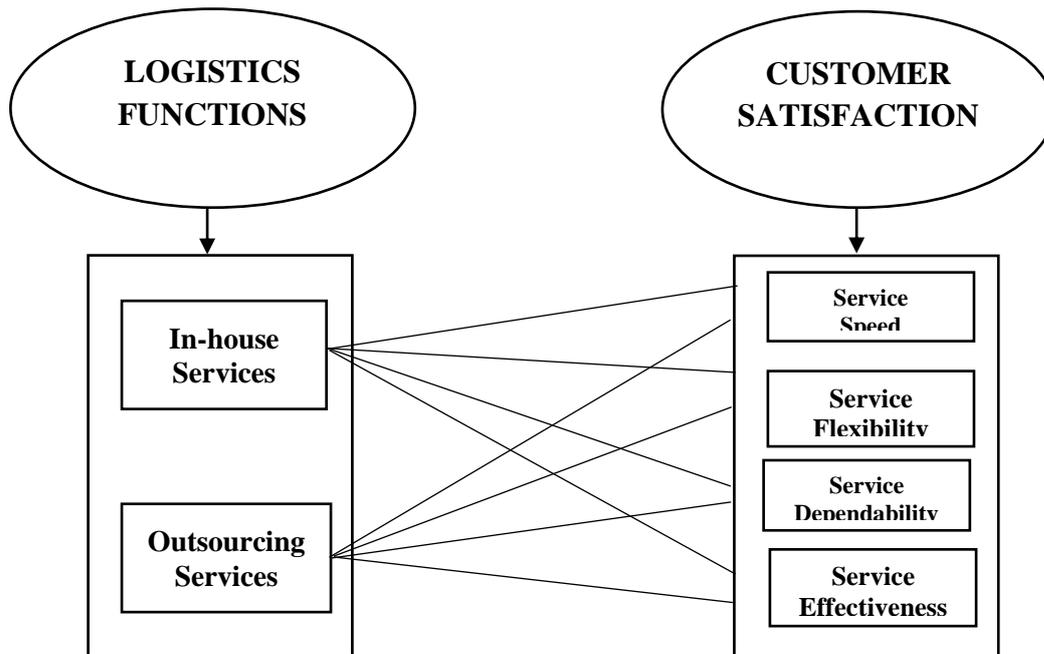


Figure 2.1: Conceptual Model Showing the Relationship Between the Independent and Dependent Variables.

Source: Researcher's conceptualization (2017).

Outsourcing

Outsourcing is not a recent phenomenon; it has been in existence as long as work specialization. In fact, companies have been known to have used outsourcing in some form or the other for a long time now. Typically, companies outsource those functions that are considered non-core to their business or function in which specialized skills are needed and cheaply available in the open market.

Outsourcing is a management tool wherein a business contract with a third-party logistics service provider (3PL) to provide services that might done by the employees of the outsourcing companies. Outsourcing is the art of one firm contracting out some of the logistics functions with another company to provide services for the outsourcing company. The recipients of outsourced logistics activities are generally, but not necessarily in the same country. When a business organization on another continent receives such services, for example china, it is called offshore outsourcing. Offshore outsourcing is the practices of hiring an external services provider to perform certain logistics functions in a country other than the one where the products or services are developed or actually manufactured. But if Nigeria base firm outsourcing logistics functions to a company in Niger Republic which is outside the country, but on the same continent is said to be near shore outsourcing.

Outsourcing has become one of the most important management concepts for the past 75 years as listed by the Harvard Business Review. This concept has become a readily accepted



method of increasing performance of non-supply chain functions (Gottfredson, Puryear and Philips 2005). Outsourcing strategy allows business organization to concentrate on their core competencies to provide a differentiated level of customer services, and to take advantage of higher business operational flexibility. Outsourcing helps the organization to gain competitive advantage and customer satisfaction. Because of these benefits mentioned earlier, companies have diverted their attention to carry out outsourcing (Bolumole, Frankel and Naslund, 2007). Lieb (1992:p30) defined outsourcing “as the hiring of external firms to provide logistics services that have been previously performed within the business organization. Oshei, Kotlarsky and Willcocks (2011:p207) defines outsourcing “as contracting with third service providers for the management and accomplishment of a certain areas of work for a specific period of time, cost and length service” outsourcing is a contract.

Services agreement which a business organization hires out all or part of its logistics functions to an external firm. Despite the diversities of outsourcing definitions, authors agreed that the decision to outsource bothers on reliance of firms as an external source of input service processes or other value-adding activities (Amiti and Wei, 2005, Gillery and Rasheed, 2000). Before now business organizations only trusted themselves and as a result, they performed all business activities. Because, they kept a firm grip on everything like packaging, procurement and production as well as the distribution of the finished products to the markets. Companies believed that they could perform all business activities better than anybody else and that belief also applied to the logistics functions. But, in the course of the years, business organization began to shift from this full autonomy in the field of logistics.

Dimensions of Logistics Functions among In-house Services and Outsourcing Manufacturing Companies

The study considered four (4) logistics functions which include, transportation, warehousing, packaging and procurement that are common among our studied organizations. The study explains the various logistics functions mentioned above. These functions are usually offered by the third-party logistics (3PL) service providers and manufacturing companies performing the same functions in-house. There are other logistics functions such as: inventory control, customs brokerage, information technology, among others (Chopra and Meindl 2010; Hilletoth 2010; Mangan, Lalwani; Butcher and Javadpour, 2012). But the four logistics functions, which have been listed above are carefully chosen for this study. The choice of the four (4) logistics functions is that, it is commonly used among the logistics outsourcing and non-outsourcing manufacturing companies of this study.

Transportation Function

The transportation operation in the supply chain process determines the efficiency of distributing or moving products to the market. This operation could be done in-house or outsourcing it out to a vendor. Manufacturing companies taking a decision on logistics outsourcing or in-house services implementation need an effective management capability to achieve their set objectives. A strong system of business environment needs a clear frame of in-house services or logistics outsourcing strategy to link the production and distribution procedures of the manufacturing firms. So, whatever strategy the manufacturing companies which to adopt, the objective is to serve the customer on-time and appropriately.

Warehousing Function



The warehouse functions usually provide a secure and reasonable place for products and materials to be stored. With physical distribution, storage is often associated with warehousing, including material handling performed in the warehouse.

In addition to storing of goods, sorting, marketing and assembling goods and materials for shipment are also part of material management in the warehousing activities; therefore, to improve on customer's service, the in-house services and outsourcing services are adopted by manufacturing companies in order to satisfy their respective customers.

Packaging Function

Packaging function is the physical wrapping or container for a product. Packaging activities is done in-house or service providers. It is done in-house where in-house expertise exceeds the capabilities of most external suppliers. Some specialized manufacturing firms which produce specific products, often lack capabilities or resources needed to perform functions such as packing, labeling of products and product assembling. On the other hand, external companies take on the task of performing logistics functions as it is easier to consolidate all the necessary information and ship it to the customers. Packaging function and labeling are mainly performed as a single activity.

Procurement Function

Procurement or purchasing is one of the logistics functions of the logistics system. Procurement function is strategic weapon manufacturing firms can source effectively that can create a competitive advantage by building better value in their own products. Dwyer and Tanner (2002) developed two sets of purchasing methods. The traditional purchasing philosophy and adversarial purchasing philosophy. The adversarial purchasing philosophy is to have several vendors for each product. While the alternative approach of procurement is called the traditional purchasing philosophy which involve partnership purchasing or preferred external supplier system. The outsourcing companies prefer the traditional purchasing philosophy while the in-house services companies in most cases adopted the adversarial purchasing philosophy and set a method of supply chain management control. The both procurement philosophy approach was developed in order to increase competition for the buyer's business.

Outsourcing Process

Outsourcing process is a set of procedure that establish and management of a contractual agreement with an external firm for the provision of logistics services that has been previously provided in-house (Momme, 2002).

Step 1; Understanding Company Goals and Objectives: Management taking outsourcing decisions have to be taken within the framework of a company's goals and objectives

Step 2; A Strategic Vision and Plan: Outsourcing companies must incorporate her long-term and short-term strategic vision and plan when drafting the outsourcing contractual agreement.



Step 3; Selecting the Right Vendor: The outsourcing companies will engage in selecting activities which include; collecting external suppliers background information, supplier intelligence and evaluation of this information in order to select the right vendor.

Step 4; Management of the Relationship: Relationship management is an essential requirement for outsourcing contractual agreement to succeed.

Step 5; A properly Structured Contract: Structuring an outsourcing contract requires expertise experience and carefulness to have all the necessary clauses, incentives and scope for growth.

Step 6; Open Communication: To coordinate outsourcing relationship with an external supplier open communication is essential.

Step 7; Senior Executive Support: Outsourcing decision in an organization must consider the inputs from the senior executives.

Step 8; Use of Outsider Expertise: The use or involving outsider expertise is necessary to have things done right.

Customer Satisfaction

In today's competitive business environment goods and services at the right time to the customer is the key to a sustainable – competitive advantage. Customer satisfaction forms the bases of any successful business. Hence, customer satisfaction leads to brand loyalty, repeat purchase and positive word of mouth. The overall purpose of customer's satisfaction is to achieve long-term commitment from customers. The commitment will definitely be built upon positive relationship between a company and its customers.

In a competitive market place where business competes for customers, satisfaction is seen as a major differentiator and has become increasingly a key element of company's strategy (Gitman and McDaniel, 2005). Kotler and Armstrong (2013.p137) defined customer satisfaction "as the extent to which customers perceived a product performance matches a buyers' expectation". To hold on a satisfied customer, companies must set it right on achieving 100% satisfaction for every one of the customers. Customer satisfaction is the total percentage of customers, who's reported an experience with a company, its products, and services rating exceed specified satisfaction needs or goals (Farri, Neil, Philip and David, 2010). The customer satisfaction being extremely important to the business in its own right, we believe that this measure indicates who the customer experience affects future sales and revenue. European integration studies (2011:p1155) defined customer satisfaction "as an increasing clients' wish to purchase new items or repurchase the goods and services of the company".

However, in conducting research on customer satisfaction, company usually ask customer whether their product or services satisfy their expectations. Thus, the important factors behind satisfaction are the expectations of customers. Customers are likely to rate their experience as dissatisfying when their expectations are not meet. For instance, a very wealthy resort place might get a lower customer satisfaction rating than a less expensive budget motel even when its facilities and services are better and superior in absolute terms (Farri et al, 2010). Schiffman and Kanum (2004) defined customer satisfaction "as the individual's



perception of the performance of the products or services in relation to his or her expectations”.

Customer satisfaction is an ideal concept and the real manifestation of the level of satisfaction depends on a number of both physical and psychological variables which correlate with satisfaction behaviours characteristics such as referrals rate and repeat purchase. The state of satisfaction can also vary depending on other available options the customer may have and other goods and services against which the customer can compare the organization's products. The National Business Research institute (1982) suggested possible dimensions that one can use in measuring customer satisfaction. They include: quality of service delivery, the expeditious delivery, handling customer complaints, customer response time and patronage. These indicators are also called the drivers of customer's satisfaction. To create new customers' and maintain old customers, firms must have good knowledge of the level of satisfaction the customer have with each variant to have a competitive advantage.

Measures Customer Satisfaction

The measures of customer satisfaction are indicators to examine customer satisfaction. Companies can achieve increased customer satisfaction, loyalty through their speed in service delivery, dependable service and service effectiveness. Delivery services of high quality are an important strategy for firms that seek to create and provide value to their customers (Gronroos and Ravald, 2011). The study examined customer satisfaction in terms of speed in service delivery, flexibility, dependability and service effectiveness. We can briefly discuss the four (4) measures of customer satisfaction mentioned above.

i. Service Speed

The speed in service delivery is one of the test variables to measure customer satisfaction in the study. The speed in service is a customer-driven operation service that reflects a clear understanding of the time, It takes to ship and receive goods to the customers. It also requires a cross-functional effort of the organization to follow the needs and expectation of the customers getting their order on-time. Manufacturing companies both outsourcing and non-outsourcing focus on the competitive priorities of development speed in service delivery with time-based competition. Therefore, manager carefully defines the steps and time needed to deliver a product or service. Then, critically analyze each step in serving the customer to determine whether time can be saved without hurting quality (Ritzman and Krajewaki, 1999).

ii. Service Flexibility

The concept of service flexibility is the ability of the organization to respond to changing circumstances in business activities towards customer satisfaction. The idea of this concept is to compare the services of the outsourcing strategy and that of the in-house services strategy to ascertain how fast both manufacturing companies who chose to outsource or perform logistics functions in-house respond to the need of their customers. Also, to examine about changes in demand are met in a timely order by both manufacturing companies of the study.

iii. Service Dependability

Service dependability is how reliable the customer feels about the company in terms of meeting delivery schedules or promises. Delivery dependability is the capability to deliver



correct products in the correct quantity. In other words, service dependability is keeping delivery promises. The focus here is how both business strategies (i.e, outsourcing and in-house services) keeping their service delivery promises to their customers. Because, keeping delivery promises in turn build trust and long-term relationship with the customers.

iv. Service Effectiveness

Service effectiveness is doing what you are supposed to do adequately to accomplish a purpose; producing the expected results for customer satisfaction. In general, service effectiveness is described as the capability of producing a specific desired effect or “getting the right things done” (Druker, 2004). From the definition above, it becomes apparent that service delivery effectiveness is related to the degree to which a logistics system’s objective has been achieved. This indicate that, an effective service delivery is the one that have the ability to deliver the outcomes for which it was originally plan and developed (Kingman Brundage, 1991). Scholars have argued that the main objective of service delivery effectiveness is to bridge the gap between customer expectations and experience (Lovelock, 1984 and Armistead, 1990).

Importance of Customer Satisfaction

To research the behaviour of customers, the customers are used as a unit of analysis for making marketing strategies and adopt the marketing mix to their needs. It is assume that marketing always follows the needs for the customers as a basic assumption in the development of a suitable strategy that leads to customers’ satisfaction. In a general term, it is the main satisfaction of the product and services as a whole that merits attention. Because, the customer’s future buying and consuming behaviour is influence by their satisfaction.

In addition, manufacturing companies have need for measuring satisfaction of their customers. Dutka (1993) identified several possible uses of information about customer satisfaction. They include:

- i. The results of customer satisfaction can help the organization to understand the current standard of customers’ level.
- ii. The important customer’s requirements can easily be identify through customer satisfaction result.
- iii. The information about customer satisfaction result can help company monitor the dimension over time.
- iv. It provides comparison to other organization.

Theoretical Review of Literature

The study adopted two main theories, Core Competence (CC) by Prahalad and Hamel (1990) and Resource Based View (RBV) by Barney and Hesterly (1996) theories. The main premise of the Core Competence Theory is that, the core business function of an organization shall remain in-house. While the core premise of the resource-based view theory is that, organization with organized resourced may lack capabilities to perform certain business function may seek to partner with 3PL to achieve a competitive edge.



Empirical Review of Literature

Recent literatures indicate that different scholars have studied outsourcing and in-house services. Hence, a summary of a few was considered in this study. They include, Munovi, 2015; Dominick, 2014; Rajee and Akinlabi, 2013; Ogolo, 2013; Akinbola, 2012; Dogerlioglu, 2012; Muweesi, 2011; Chopra and Meindl, 2010; and Bolat and Yilmaz, 2009 on variables of outsourcing and in-house services reveals that, studies that examine the effect of logistics outsourcing and in-house services on customer satisfaction in terms of speed of service delivery, service flexibility, dependability and service effectiveness appear scare.

METHODOLOGY

Research Design/Population of the Study

The study adopted survey research design. The target population for the study consisted of all customers (i.e, Dealers) of outsourcing and non-outsourcing manufacturing companies operating in Nigeria. The total of 10 outsourcing company's customer is 15, 891 while, the total of 10 in-house services company's customer is 15,667. Therefore, the total targeted population of the study was 31, 558. The choice of both outsourcing and in-house services companies is borne out of the fact they have adopted logistics outsourcing strategy and in-house service for at least five (5) years or more respectively. The 10 selected out-sourcing and 10 selected non-outsourcing manufacturing companies are below:

Table: 10 Selected Out-Sourcing and 10 Selected Non-Outsourcing Manufacturing Companies

| S/No | Outsourcing companies for transportation, procurement, packaging warehousing, etc. | In-house services companies for transportation, procurement, packaging, warehousing, etc. |
|------|--|---|
| 1. | May and Baker Nig. Plc. | 1. Friesland Campina Food Wamco Nig. Plc. |
| 2. | Flour Mills Nig. Plc | 2. PZ Industries Plc. |
| 3. | Nigeria Breweries Plc | 3. Unilever Nigeria Plc. |
| 4. | Nestle food Nigeria Plc | 4. Honey Well Flour Mill Nig. |
| 5. | Cadbury Nigeria Plc. | 5. Dufil Prima Foods Plc. |
| 6. | 7up Bottling Company | 6. Promasidor |
| 7. | International Breweries Plc | 7. Dangote Flour Mills |
| 8. | Fan Milk Plc | 8. Coca-Cola Nig. Plc. |
| 9. | Nascon Allied Industries Plc. | 9. Vita Foam Nig. Plc |
| 10. | Royal Salt Limited | 10. Mouka Foam Nig. Ltd. |

Source: Field data, (2017)

Sample Size/Sampling Technique

The sample size of 800 respondents was considered for the study. Taro Yamane's formula was applied to determine the sample size, because the total number of customers both companies is known. However, the lists of customers were provided through the sales



operation units of outsourcing and in-house services companies. The total number of outsourcing customers (i.e, dealers) as at the time of the study was 15,891 and the total number of in-house services customers (i.e, dealers) as at the time of the study was 15,667, the total of both outsourcing and in-house services customers was 31, 558. Substituting the figure into the Taro Yamane's formula. This formula is concerned with applying a normal approximation with a confidence level of 95% and a limit of tolerance level (error level) of 5%.

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

Where, n = sample size sought
 e = Level of significance (degree of tolerable error, 5%)
 N = Total population
 1 = Constant

Outsourcing companies' computation:

$$n = \frac{15,891}{1 + 15,891(0.5)^2} = \frac{15,891}{1 + 15,891 \times 0.0025} \quad n = 390.17$$

In-house services companies' computation.

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

$$n = \frac{15,667}{1 + 15,667(0.5)^2} = \frac{15,667}{1 + 15,667 \times 0.0025}$$

$$n = 390.041$$

Outsourcing total after computation = 390.17

In-house services companies total = 390.041

Total = 780.211

However, 780.211 divided by 20 companies = 39.01055 each but the researcher deliberately increases the figure from 39.01055 to 42 customers (dealers) per companies (i.e., 42 x 20 to have the total of eight hundred and forty (840). Therefore, 420 copies of the questionnaire were retrieved from the respondents. Eight (8) representing 1.9% were not retrieved. Twelve (12) copies representing 2.9% out of the retrieved questionnaire copies representing 2.9% out of the retrieved questionnaire were discarded, because they were not completely or properly filled. Four hundred (400) copies representing 95.2% response rate were correctly filled and



returned which were thus useful for the study. Base on this regard, forty (4) customers each were selected from the 10 outsourcing manufacturing companies. Similarly, 420 copies of the questionnaire were distributed to the 10 in-house services companies. Out of this number, 410 copies were retrieved from the respondents. Ten (10) copies representing 2.4% were not retrieved while, ten (10) copies out of the retrieved questionnaire representing 2.4% were discarded, because they were not completely or properly filled. But, four hundred (400) copies representing 95.2% response rate were correctly filled and returned, which were valid for the study. We then, select 40 customers each from the in-house services companies. Considering both customers of the outsourcing and the in-house services companies, we have the total of 800 useful questionnaire for the study. The implication of this is that all further analysis made in this study was based on the 800 valid set of questionnaires. Hence, the sample size of the study.

The convenience sampling method was used in the selecting the 800 respondents. This method allowed the researcher to reach out to accessible respondents. The research instrument adopted for the study was a structured questionnaire. Also, two sets of variables were measured for the study. These were independent variables which are logistics outsourcing and in-house logistics services. The dimensions are transportation, warehousing packaging and procurement. The dependent variable is the customer satisfaction in terms of speed of service delivery, service flexibility, service dependability and service effectiveness.

Method of Data Analysis

Both descriptive and inferential statistics was used. The descriptive statistics include, frequency count and simple percentage. The descriptive statistics was used to summarize, qualify and describe the characteristics of data distribution. The inferential statistics adopted was the independent samples T-test. The independent samples T-test was used to test the four (4) hypotheses. The Minitel's Software was used to generate the results. The choice of independent samples T-test statistics is appropriate for comparing two groups' means by testing the difference in their mean scores. It is suitable for making reject, accept decision and to draw inference.

RESULTS AND DISCUSSION

Hypothesis One

H0₁: There is no difference in the speed of service delivery between outsourcing and non-outsourcing companies.

Table 4.6: Two Sample T-Test and C1: Out.1 Vs In.1

| Respondent | N | Mean | StDev | SE Mean |
|------------|-----|-------|-------|---------|
| Out. 1 | 400 | 13.96 | 1.05 | 0.053 |
| In. 1 | 400 | 11.63 | 2.33 | 0.12 |

Source: Field Data (2017): Computed by the Researcher using data obtained from the Outsourcing and in-house Services Companies' Customers



Key:

Out. 1: Outsourcing Companies' Customers

In-1: In-house services Companies' Customers

Difference = μ (Out.1) - μ (In.1)

Estimate for Difference: 2.332

95% CI for Difference: (2.082, 2.583)

T-Test of Difference = 0 ($V_s \neq$): T – Value = 18.27

P. Value: = 0.000

• **Results:**

1. The result of the independent samples T-test shows that the p-value (0.000) is less than (0.05) significant level.
2. Outsourcing companies' customers mean scores (13.96) is higher than the in-house services companies' customers mean scores (11.63).

• **Decision:** Hypothesis one was rejected at 0.05 level of significance.

• **Findings:** This means the outsourcing companies have more speed in service delivery to the customer they serve.

• **Implication:** The quality of service delivery speed can only be described by the customers. Because, the speed of service delivery influences the bases of their satisfaction. The customers testify that they receive goods and service on time

Hypothesis Two

H0₂: There is no difference in service flexibility between the outsourcing firms and non-outsourcing firms.

Table 4.7: Two Sample T-Test and CI: Out.2 Vs In.2

| Respondent | N | Mean | StDev | SE Mean |
|------------|-----|-------|-------|---------|
| Out. 2 | 400 | 12.72 | 0.838 | 0.042 |
| In. 2 | 400 | 10.74 | 1.473 | 0.074 |

Source: Field Data (2017): Computed by the Researcher using data obtained from the Outsourcing and in-house Services Companies' Customers

Key:

Out. 2: Outsourcing Companies' Customers

In-2: In-house services Companies' Customers

Difference = μ (Out.2) - μ (In.2)



Estimate for Difference: 1.9350
95% C1 for Difference: (1.8186, 2.1514)
T-Test of Difference = 0 ($V_s \neq$): T – Value = 23.44
P. Value: = 0.000

• **Results:**

1. The result of the independent samples T-test indicates that the probability value (i.e., 0.000) is less than the (0.05) significant level.
2. Outsourcing companies' customers mean scores (12.72) is greater than the in-house services companies' customers mean (10.74) scores value.

• **Decision:** Hypothesis two was rejected at 0.05 level of significance.

• **Findings:** We conclude that service flexibility is more with the outsourcing firms than with the in-house services companies.

• **Implication:** The findings is in agreement with resource-based view theory which premise holds that companies running in severe competitive environment focus on their strong aspect and try to find support from vendors for strengthening their weakness in order to keep their competitive edge.

In other words, the outsourcing companies adopt changes faster and better, and update their services more frequently than the in-house services companies. The customers in their responses testify that, they respond quickly and adapt to changes in their demands which influence their satisfaction time.

Hypothesis Three

H0₃: There no difference in the speed of service dependability between the outsourcing and non-outsourcing companies.

Table 4.3: Two Sample T-Test and C1: Out.3 Vs In.3

| Respondent | N | Mean | StDev | SE Mean |
|-------------------|----------|-------------|--------------|----------------|
| Out. 3 | 400 | 13.73 | 0.946 | 0.047 |
| In. 3 | 400 | 13.96 | 1.071 | 0.054 |

Source: Field Data (2017): Computed by the Researcher using data obtained from the Outsourcing and in-house Services Companies' Customers

Key:

Out. 3: Outsourcing Companies' Customers

In-3: In-house services Companies' Customers

Difference = μ (Out.3) - μ (In.3)

Estimate for Difference: -0.2325



95% C1 for Difference: (-0.3727, -0.0923)
T-Test of Difference = 0 (Vs ≠): T – Value = -3.25
P. Value: = 0.001

• **Results:**

1. From the statistical analysis, the result shows that the probability value (0.00) is less than (0.05) significant level.
2. In-house services companies’ customers mean scores (13.96) is higher than the Outsourcing companies’ customers mean (13.73) scores.

• **Decision:** Hypothesis three was rejected at 0.05 level of significance.

• **Findings:** This means the In-house services companies have more service dependability than with the Outsourcing Company’s counterparts.

Implication: Both outsourcing and in-house services companies’ customers testify that, service delivery are reliable from the companies they received goods and services. But the In-house services companies’ have more dependable service delivery. This is an indication of their satisfaction because reliable service delivery builds long-term relationship between the company and its customers.

Hypothesis Four

H04: There is no difference in service effectiveness between the outsourcing and non-outsourcing firms.

Table 4.9: Two Sample T-Test and C1: Out.4 Vs In.4

| Respondent | N | Mean | StDev | SE Mean |
|-------------------|----------|-------------|--------------|----------------|
| Out. 4 | 400 | 14.14 | 0.987 | 0.049 |
| In. 4 | 400 | 14.60 | 0.798 | 0.049 |

Source: Field Data (2017): Computed by the Researcher using data obtained from the Outsourcing and in-house Services Companies’ Customers

Key:

Out. 4: Outsourcing Companies’ Customers

In- 4: In-house services Companies’ Customers

Difference = μ (Out.4) - μ (In.4)

Estimate for Difference: -0.4575

95% C1 for Difference: (-0.5939,-0.3211)

T-Test of Difference = 0 (Vs ≠): T – Value = -6.58

P. Value: = 0.000



- **Results:**

1. The result of the independent T-test shows that the p-value (0.000) is less than (0.05) significant level.
2. In-house services companies' customers mean (14.60) scores is greater than the outsourcing companies customers mean (14.14) scores.

- **Decision:** Hypothesis four was rejected at 0.05 level of significance.

- **Findings:** The in-house services companies have more service effectiveness than the outsourcing companies.

- **Implication:** This finding is in agreement with the core competences theory which premise holds that the core business activities of an organization should remain in-house. Outsourcing strategy that is not properly managed usually reduces a company's control on how certain services are delivered to their customers.

CONCLUSION

- The result shows that advantages of outsourcing are true only for some areas of logistics activities.
- Higher flexibility, service delivery speeds are associated more with the outsourcing companies.
- The in-house services companies have more reliable service delivery to their customers than the outsourcing companies.
- Also, service effectiveness is more with the in-house services companies than with the outsourcing companies.

RECOMMENDATIONS

1. Manufacturing companies should focus more on service delivery time for the customers to receive their goods and services on time.
2. Manufacturing companies should ensure to maintain service flexibility in order to serve the customer at the right.
3. Manufacturing companies that stresses to achieve dependable service delivery to its customers should be willing to invest in their schedule of service delivery.
4. Manufacturing companies that outsource logistics functions should continue to monitor the vendor's activities and establish constant communication to improve on service effectiveness in order to satisfy the customers.



5. Manufacturing companies should focus more on the core business activities they have advantages and can do better than its competitors. Then, outsource non-core business activities to service providers who can do better than them.

Contribution to Knowledge

- The study has contributed to existing outsourcing and in-house services literature.
- The outcome of the study has provided empirical evidence of the effect of outsourcing and in-house services strategy option on customer's satisfaction in terms of speed of service delivery, service flexibility, service dependability and service effectiveness.
- Most of the researcher focuses more on how the effect of outsourcing and in-house services impact on business performance in terms of profitability, costs, market share and sales growth.
- But this work looked at business performance specifically on customer's perception of the service delivery, which earlier studies had failed to emphasize.

Suggestions for Further Research

It was suggested that:

1. Similar studies should be conducted in other industries using the four (4) variables of this study.
2. Further studies could be considered to capture participants perceptions related to career development and job satisfaction of both companies.

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