The Effect of Logistics Management Practice on Customer Satisfaction of Pharmaceutical Firms South-East, Nigeria.

Ofoegbu Uche Chinwendu, Prof. C.C. Orga, Ezeh Kingsley Ikechukwu (PhD)

Department Of Business Administration, Enugu State University of Science and Technology, Enugu.

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ABSTRACT

The study examined logistics management practice and customer satisfaction of pharmaceutical Firms in South-East, Nigeria. There had been growing dissatisfaction with the delay in the supply of essential pharmaceutical products in the South- East, Nigeria. The main objective of the study was to examine effect of logistics management practice on customer satisfaction of pharmaceutical firms located in South-East, Nigeria. The specific objectives were to: Determine the effect of packaging on repeat purchase, ascertain the effect of delivery speed on customer loyalty, determine the effect of order completeness on customer referrals, examine the effect of on-time delivery on customer retention, and ascertain the effect of real-time update on customer response rate of pharmaceutical firms in South East, Nigeria. The population of the study was 43, 905 staff of logistics departments in 25 selected firms. The Freund & Williams formula was adopted to arrive at the sample size of 384. A stratified sampling technique was employed. The study utilized a survey design. The data were presented in tables and analysed using simple percentages, mean and standard deviation. The hypotheses were tested using the Z-test statistic. The results showed that packaging had significant positive effect on repeat purchase ($Z = 11.180$, $p < 0.05$); delivery speed had significant positive effect on customer loyalty ($Z = 10.483$, $p < 0.05$); order completeness had significant positive effect on customer referrals ($Z = 2.674$, $p < 0.05$); on-time had significant positive effect on customer retention ($Z = 2.685$, $p < 0.05$); and real-time had significant positive effect on customer response rate of pharmaceutical firms in South-East, Nigeria($Z = 15.110$, $p < 0.05$). It was concluded that logistics management practice had significant positive effect on customer satisfaction of pharmaceutical firms in South-East, Nigeria. It was recommended among others that logistics managers in pharmaceutical firms should strive to satisfy customers by improving on maintenance, design and packaging of products.

Keywords: Logistics management, Packaging, Delivery speed, On-time delivery, Customer satisfaction, Pharmaceutical firms, South East Nigeria.

INTRODUCTION

As the business environment is uncertain nowadays, and it is very hard to be constant at success, so the business must respond to the uncertainty and meet the customer needs as they are changing day by day (Gerwin, 2020). In this current and fast changing global economy, logistics is becoming a very important source of competitive advantage especially to organisations that are not only interested in survival but also in achieving growth through customer's satisfaction (Obafemi & Oyawa, 2024). Globalization is forcing firms to be more careful about customer satisfaction and profit maximization; firms are now using different tools in ensuring that customers, especially those that are sensitive to price increase to remain loyal to the firm in order to maximize profit. In achieving this, managers are now applying effective and efficient logistics management as a key tool that builds cost and service advantages to the firms (Gebresenbet & Bosona, 2022). Although the original concept of logistics emerges from a military background which refers to providing the necessary weapons, munitions, and supplies as and when deemed necessary, the current philosophy and practice of logistics are about service provision and time-effective non-military facilities, especially commercial ones This operation includes the transfer of items from one point to another, storing them in a suitable venue, inventory, packaging and other working activities such as the delivery of orders (Islam, *et al,* 2023). Importantly, logistics management enables the integration of supply chain activities through improved relationships to achieve a sustainable competitive advantage (Numan *et* al., 2020). It involves the strategy of the product or services. In today's fast paced

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economic climate many firms increasingly realize that globalization has made the world smaller and more competitive, a change in one place impacts another quickly and customers seeks product that can respond well to their specific needs. As such, firms are now looking at packaing, delivery speed, order completeness, on-time delivery, real-time update and other competitive tools as a strategy to pursue in a globally competitive environment. One currently popular competitive advantage for firms is to promote and provide value for its customers by performing its logistic management activities more efficiently than competitors. As a result, one area of increasing focus is on the effective logistics management of a firm's set of operations. For effective logistics management to be realized then, crucial factors with direct contacts to the customers and suppliers must be appropriately utilized (Bahramimianrood & Bathaei, 2021). The competition nowadays is increasing day by day, companies need to look for such processes and methods to manage the firm so that the firm will be able to come up with efficiency and with much better outcomes (Stock *et al.,* 2018). Logistics is such an important factor in our business today, no marketing, manufacturing or project execution can succeed without logistics support (Chukwu, 2009). For companies, 10 to 35% of gross sales are logistics cost, depending on business, geography and weight/value ratio. It is completely a new term but not in operation (Chukwu, 2009). As the present business environment is more intense competition wise, the pressure is not only on the differentiation in the product and service but also on the factors which reduces the price as well. When it comes to the success and growth of a retail store or any business relating to the retail sector, then the role of logistics is very important as it plays a very important role. Tracing the origin of logistics as it is known today to development occurring in military logistics during World War II. Logistics expertise and effort were doubtedly key factors in the outcome of the world war for the allies. Logistics, particularly critical in the European theatre, also played an important role in the pacific. The United States ability to move and store personnel and supplies efficiently contributed much to the success of the allied war effort. Again in 1991, the world witnessed a dramatic example of the importance of logistics in the military context when USA and its allied in prosecution of war against Iraq airlifted ½ a million people and about ½ of a million tones of materials and supplies over 12,000km with a further 2.3 million tones of equipment moved by sea within a matter of months. This accounted to the winning of the war by US and its allied forces. Some have, in fact, called the military effort in the gulf area the "logistics war". Since then, logistics has progressively found a significant place in a business (Chukwu, 2009).

Logistics has always been key to satisfying the needs of individuals and society. Lynch (2020), for example, quotes Ackerman (2020) who suggests that one of the first business logistics arrangements is described in the Bible, in Genesis Chapter 41. This is an account of the seven years of plenty during which the people in the land of Egypt accumulated crops for the predicted seven years of famine. The grains and other fruits of their labours were taken to storehouses for safekeeping the grain was placed in storehouses for later redistribution during the time of need. Lynch goes on to point out that in Europe, a number of logistics service providers can trace their origins back to the Middle Ages with the first commercial warehouse operations having been built in Venice, Italy in the 14th century. Merchants from all across Europe used these as collection and distribution points. Satisfaction of the customer is shown from the reaction from the customer after purchasing or using the offerings of the organization which has offered to him. In his study he elaborated as well that the customer's reaction is the main factor from which his satisfaction can be known and also the customer's perception of the received value by using the product. A study conducted by Bahadur *et al.* (2015) say that the customer of the current era wants the best product, with high quality and services, at whatever place they want it, in how much time they want it, and all these things with reasonable prices. Customer always expects something and when they are not met then, the consumer will eventually be dissatisfied and the effect goes on by multiplying itself, and when this effect increases the consumer will switch to another retail competitor, and the former experience of dissatisfaction is abandoned by the consumer (Bouzaabia *et al.,* 2019). Jennet (2018) states that customers is one of the stakeholders that organization recognized as king and they are one of the most important stakeholders.

The main goal of the organization is to satisfy the customer and their satisfaction is among the top of the list items for the management meanwhile customer satisfaction is a light by the organizations very much due to its importance in all aspect of the organizational units. Based on this, the study seeks to investigate the effect of logistics management practice on customer satisfaction in pharmaceutical firms in South East, Nigeria.

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Statement of the Problem

Pharmaceutical firms keep trying different logistics management practices to remain competitive. Logistics is responsible for the planning, then implementing and controlling of the efficient and effective flow and storage of goods and services. In any supply chain, along with the goods and services, the flow of information from the origin to the consumption is included in managing time and cost as well. Efficient management logistics ensures smooth flow of goods and availability of products when and where the customer needs them. Unfortunately in Nigeria and entire South East, pharmaceutical business sector of the economy has been undergoing turbulent times. They did't seem to be occupying their rightful place as catalysts for economic development and infrastructural provisions like their counter parts in developed economies. Logistics system in Nigeria appeared to be grossly inefficient in moving goods and services to customer. The reasons for the inefficiency mght be the adoption of archaic and traditional approach. Other reasons might be linked to poor road network, lack of efficient transportation, poor information flow, frequent breakdown and poor maintenance of vehicles, slow order-processing and lack of good warehouses. Transportation, storage, order processing, warehousing and inventory of pharmaceutical firms seemed to be the affected areas in logistics. Poor logistics mighty produce bad consequences like poor packaing, low delivery speed, low order of completeness, poor on-time delivery and inadequate real-time update. In spite of the contribution of management logistics in leveraging on customer satisfaction of pharmaceutical products performance, few studies had been done to ascertain its effect on pharmaceutical products in Nigeria, especially in the South-East. The customer might not be satisfied, if the logistics challenges continue; that might affect the survival and grwoth of the logistics firms in South East. As a result of that, we examined the effect of logistics management practice on customer satisfaction of pharmaceutical firms in South-East, Nigeria.

LITERATURE REVIEW

Logistics Management Practices of Pharmaceutical Firms that form Part of the Study

Packaging can be defines quite simply as an extrinsic element of the product (Olson & Jacoby 2002), an attribute that is related to the product but does not form part of the physical product itself. Arens (2001) defines packaging as the "the container for a product encompassing the physical appearance of the container and including the design, color, shape, labeling and materials used". Keller (2003) considers packaging to be an attribute that is not related to the product. For him it is one of the five elements of the brand together with the name, the logo and/or graphic symbol, the personality and the slogans. Onah and Thomas (2004) defines packaging as the use of container, components, plus decoration or labels to protect, contain, identify and facilitate the use of products. It is containment and packaging prior to sales with the primary purpose of facilitating the use of products. The container or wrappers is called package. The package include up to three levels of materials: the primary which is the immediate container; the secondary is referred to packaging necessary to protect the primary package; and the third is shipping packaging which referred to packaging necessary for storage. Kotler (2017) defines packaging as "all the activities of designing and producing the container for a product." Packaging can be define as the wrapping material around a consumer item that serves to contain, identify, describe, protect, display, promote, and otherwise make the product marketable and keep it clean. Deliya and Parmar (2012) defines packaging as an extrinsic element of the product. Packaging is the container for a product. Development of wrappers and covers, for company's offerings is known as Packaging (Keller, 2009). Perner (2008) perceive packaging as the act of containing, protecting and presenting the contents through the long chain of production, handling and transportation to their destinations in as good a state, as they were, at the time of production. Packaging is an important part of the branding process as it plays a role in communicating the image and identity of a company (Sajuyigbe, *et. el.,* 2013). Packaging has been one of the most important elements that convince consumer to purchase the particular product. According to Ahmed *et al* (2024) packaging portrays the knowledge about the product and has great impact on consumer buying behavior. According the (Kotler, 2023) the primary objective of packaging was ignored in the past but this concept was now changing. Packaging is the technology of enclosing or protecting products for distribution, storage, sale, and use. Packaging also refers to the process of design, evaluation, and production of packages. Packaging can be described as a coordinated system of preparing goods for transport, warehousing, logistics, sale, and end use. Packaging has become itself a sales advancement tool for the organizations. The consumers‟ buying behavior also encouraged by the packaging

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quality, color, wrapper, and other types of packaging. In the Marketing environment packaging is been used as a tools for promotional activities and attracting customers and communicating the product to the consumers, Consumers often look at the packaging of the products as an aid in the purchase decision making process. Researchers proved that aesthetic aspects of packaging like color, brightness and typography influences where the pharmaceutical firms eyes land on the shelves. The consumer takes more time to look closely at these products and the packaging, which, in turn, directly influences whether or not he buys the product or selects another brand. Packaging is the final opinion of statement between a brand and consumer in the retail environment. For this reason, the packaging is one of the most important opinions of interaction between the brand and consumer. Studies show that there is no agreement on overall classification of packaging material and package elements (Ulrich, 2019). Orth and Malkewitz (2016) stated that design of packaging is the resource of building brand identity. Saeed, Lodhi, Rauf, Rana, Mahmood and Ahmed, (2018), Looking for a good product marker, the number of customers to buy more labeld products. Therefore, the label will influence consumerpurchasing behavior, but also to influence consumer purchasing behavior and other factors. Adelina and Morgan (2017), also mentioned in their study that Packaging is one of the most valuable technique for the marketer's to capture customers, packaging and elements can have an impact on consumer purchasing decisions. Topoyan and Bulut (2018), packaging has positive effect on brand experience. Better packaging of brand can positively influences customer satisfaction. Kuvykaite (2019), packaging also has positive impact on consumer repeat purchase. Elements of packaging are:

1. **Graphics:** Graphics on aspect of packaging, the brand unique, retain their identity, help in weight to the brand and standing on the shelf. Smith, (2024) also discusses that Graphics Value Added in brand looks and increases its aesthetic quality. Furthermore, in many cases it's create a positive feeling and match graphics or meet lifelong secret desires of the consumer. Graphics of products helps a consumer to find its desired product in many different products, if consumer don't have strong preferences towards your brand at least graphics will grab the attention of consumers (Pinya, 2024). Same author also discussed that Visual elements affect consumers make their choice to buy a particular product. Lynsey (2023), if product packaging has different images then it can create interest of consumer for that product.

2. **Colour:** Keller, (2019) discussed in his study , color is the scope of the packaging, a designer and a certain kind of color, the color of the product of the visual elements is a particularly important part of the vocabulary is to be expected. Keller also discussed that color of packaging and information is an important element of visual design and what it means to be consistent with other marketers are trying to provide. Hannele (2020), similar colors of common products are generally accepted, especially when the product range is common.

3. **Design:** Designing of products and retail consumers actually transferred innovative forms of packaging how you feel about the explosion of complexity and packaging to create an iconic brand image through various forms (Arun, 2022). Golnesa (2023), mentioned in his study design of packaging of any product attract consumers and persuades them to purchase that product. Wang (2013), mentions in his study that consumer perception of product quality is directed effected by product packaging.

4. **Material:** Material communicates consumer value towards specific product. Material can also affect the perceived quality of product some products are to be made with the material which can bear the lowest temperature below zero or it can also bear high temperature like microwave, it's all depends on product functionality, Smith (2024). The packaging material is an important element that prevents product from losses.

5. **Perceived Value:** This is the perceived level of product quality relative to the price paid by the customers. PV is the rating of the price paid for the quality perceived and a rating of the quality perceived

   for the price paid. PV structure provides an opportunity for comparison of the firms according to their Price Value ratio. It means the measure of quality relative to the price paid. Although price (value for money) is often very important to the customers first purchase, it usually have a smaller impact on satisfaction for repeat purchases.

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6. **Quality:** Customer satisfaction is a measure of the quality of a product or service. Quality may be defined as customers satisfaction with the quality of the goods or services purchased and used. Quality can also be defined as "The totality of features and characteristics of a product or service that bears on its ability to satisfy stated or implied needs. (Kotler *et al* 2017). The perceived quality should have a direct effect on satisfaction. As a psychological phenomenon, satisfaction is a function of a customers quality experience with a product or service. This quality experience consists of two primary components: i) the degree to which a product or service provides key customer requirements, (customisation) ii) how reliable these requirements are delivered (reliability). The greater the perceived quality is the greater the customer satisfaction.

7. **Customers Expectation:** Customers' expectation is a measure of the customer's anticipation of the quality of a company's products or services. Expectation represents both prior consumption experience, which includes some non-experiential information like advertising, word-of-mouth, and a forecast of the company's ability to deliver quality in the future. Diverse scholars also see customer loyalty, customer retention, customer referrals and customer repeat purchase as measures of customer satisfaction.

Logistics Management Models

Many models of logistics management were presented here in order to point out the direction of conceptual framework under the study.

Physical Distribution Logistics Model

Physical distribution system design begins with the objectives and levels of customer service a company determines as appropriate for the market. Then to implement the PD systems, PD manager coordinates and integrates its various components. A company has to determine which aspects of customer service are important to patronage and the levels of service to establish. Often these decisions are based on considerations of several factors including past experiences, customer feedback, competition and costs (Craven and Woodruff, 2001). They advised that management must balance both the costs and benefits of customer service. Quantifying the benefit side of customer service is more difficult. For instance, how much is one percent improvement in the distribution system likely to increase future sales is hard to determine. Thus, a typical approach to setting standards is to rely majorly on judgment, experience and competition. For example, management of coca cola may decide that accurate order taking and undamaged delivery are far more important than convenience of ordering system. Once this is established, over time, a company may adjust service levels based on experience, customer feedback, competition and costs. The various components of PD system that must be integrated are interrelated and have some trade-off relationships.A major approach to balancing the costs side is to identify two or three of the major contributors to distribution costs and then attempt to design a system that minimizes the total of these costs for specified customer service objectives (Cravens and Woodruff, 2001).

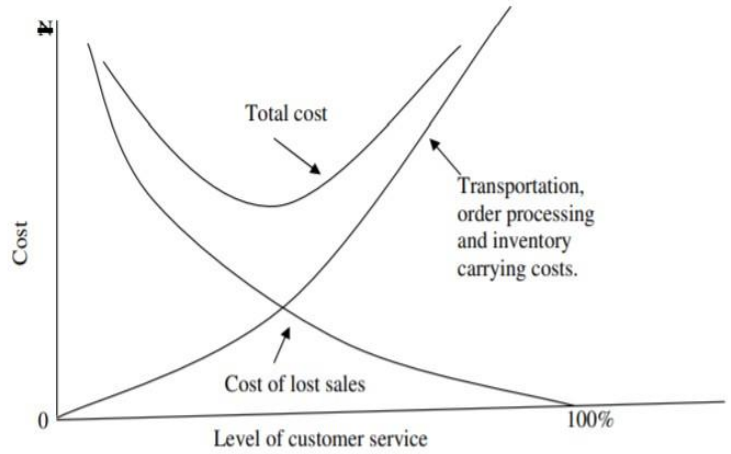

Figure 1: Relationship between Customer Service Level and Costs of Logistics Management.

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Source: Adopted from Wilson, and Gilligan (1997). Strategic management; planning, implementation and control, Oxford: Butterworth – Heinemann

If we define level of customer service as being dependent on costs of quicker transportation and faster order processing as well as inventory carrying cost, this were seen to increase as the level of customer service increases. But the loss of profit due to lost sales (whether due to stock-outs, slow transportation, inefficient order processing etc) reduces as the level of customer service increases. A total cost curve was derived to identify the optimal level of customer service to offer; that is at the lowest point of the total cost curve. Cravens and Woodruff acknowledged that this approach is not a perfect solution but it lowers distribution costs. They suggested that using this approach as a base over time that further refinements could be made. Wilson and Gilligan (1997), the approach is helpful to a point but it risks being introspective in linking service level purely to costs rather than to customers' requirements. A better approach to distribution planning is given by Doyle (1994) involving the following sequence of steps: 1. identifying the dimensions of service which customers value. 2. Weigh the service dimensions by their relative importance 3. Obtain customers' evaluations of the enterprise and its competitors along the dimensions specified in 2.1. Estimate the effect on revenue of changes in the level of service. Estimate the costs of providing different service levels. If one pursues this approach it is possible to derive the graph shown in figure 2.2.

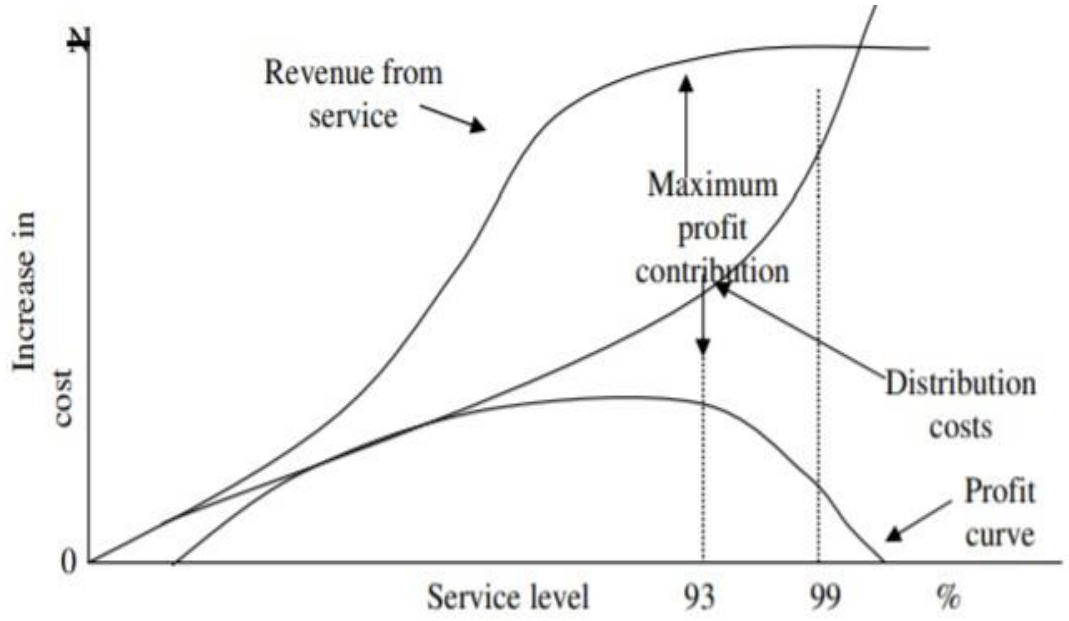

Figure 2: Setting Customer Service Levels

Source: Adopted from Source: Adopted from Wilson, R.M.S. and Gilligan C. (1997). Strategic management; planning, implementation and control, Oxford: Butterworth – Heinemann.

Figure 2 shows that it is more profitable to offer a level of service (defined in terms of ordered items being in stock) of 93 percent rather than 99 percent which is currently being offered. However, Wilson and Gilligan (1997) noted that in planning the level of service, it is important to recognize that different market segments may warrant different levels of service, that some customers may be willing to pay high prices in order to receive premium service; while others accord a high priority to low price and be willing to accept lower levels of service as a consequence.

2. Cost-Benefits Trade Off Logistics Services Model

There is a consensus in the literature that optimum services are achieved at a point where maximum satisfaction from services is achieved at lowest cost, and theoretically, this is achieved where the marginal cost of providing services is equal to marginal satisfaction gained through improved service which can be measured in terms of increase in total sales as shown below in figure 3.

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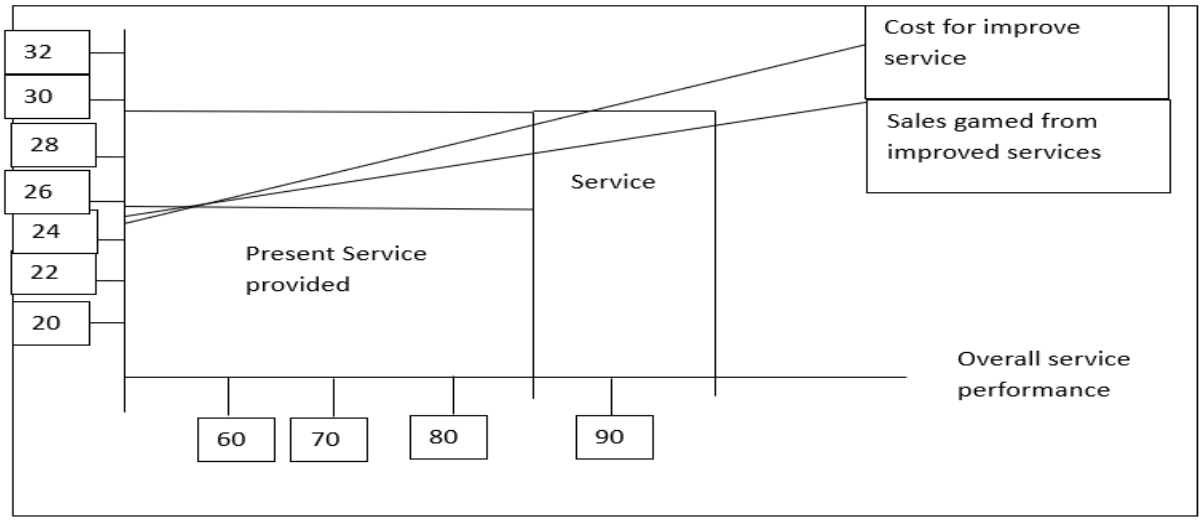

Figure 3: Cost-Benefits Trade-off of Logistics Customer Service

Source: Nwaizugbo and Nnabuko (2010). Cost benefit implications of customer service delivery, Nigerian Journal of Marketing.

Figure 3 shows the level of increase in sales gained through improved services and also the cost of providing services. It can be seen that before point YX, a gap existed between line 'a' and line 'b' which shows marginal gains. It can also be seen that improving services has also improved the overall service performance from 75% to 85%. The graph shows how responsive sales can be to improved service level. It becomes an evaluation criterion for managers as to the total amount to spend on services and the expected satisfaction of the customers.

It provides the cost benefit implications of customer service delivery.

3. Physical Distribution and Channels of Distribution Interface Model

The aforementioned two arms of distribution are also known as the logistical channel and the marketing channel. The two channels are highly related. The logistical channel refers to the means by which products flow physically from where they are available to where they are needed. The marketing channel refers to the means by which necessary transactional elements are managed such as customer orders, billing, accounts receivable and so on.

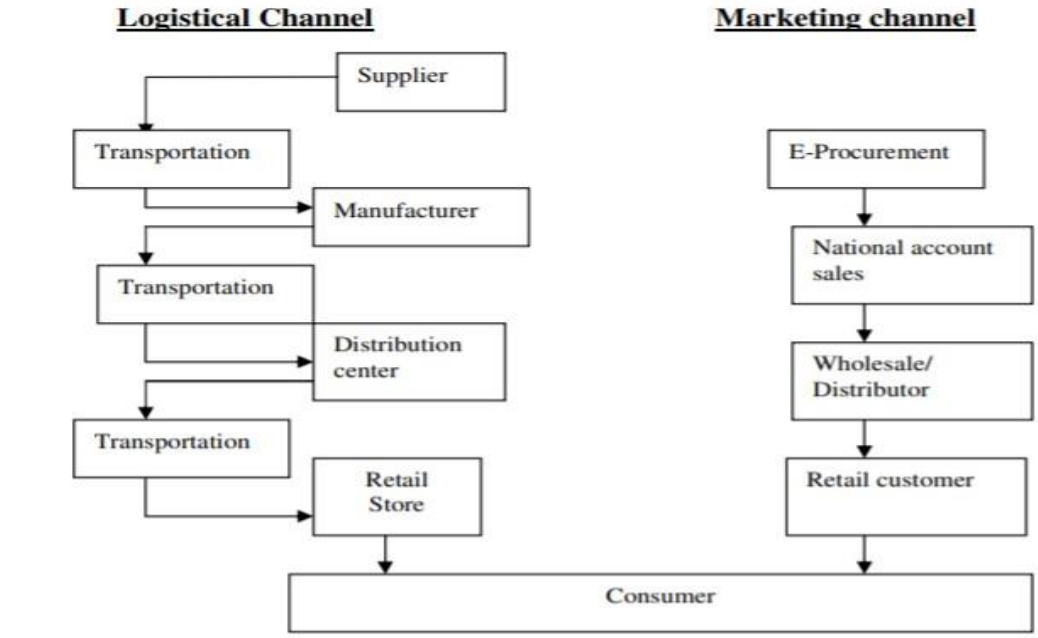

Figure 4: Logistical and Management Channels

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Source: Adopted from Coyle, Bardi and Largely (2003). The management of business logistics: A Supply Chain Perspective 7th Ed. Canada, South Western: Thomas Learning.

A management channel or channel of distribution consists of one or more companies or individuals who participate in the flow of goods, services, information and finances from the producer to the final user or consumer. It encompasses a variety of intermediary firms, including those that are classified as wholesalers or retailers. This makes coordination of channel activities inevitable. According to Boone and Johnson (1990) channel coordination can be effected through the use of contractual agreements. That is, independent firms at different levels can coordinate their activities on a contractual basis to obtain systematic economies and market impact that could not be achieved through individual action. These firms form vertical marketing systems (VMS) to achieve the benefits of coordination. Uncoordinated marketing channel can mar logistical channel performance. Hence, knowledge of distribution channel operations and decisions are critical to the success of logistical channel achievement of marketing strategy and overall marketing objectives.

4. Conceptual Physical Distribution Systems Model

The study made use of the conceptual models of physical distribution activities and customer service/ satisfaction, which are shown below in the model. The conceptual PDS/customer satisfaction model, figure 5 was developed for this study based on the two models.

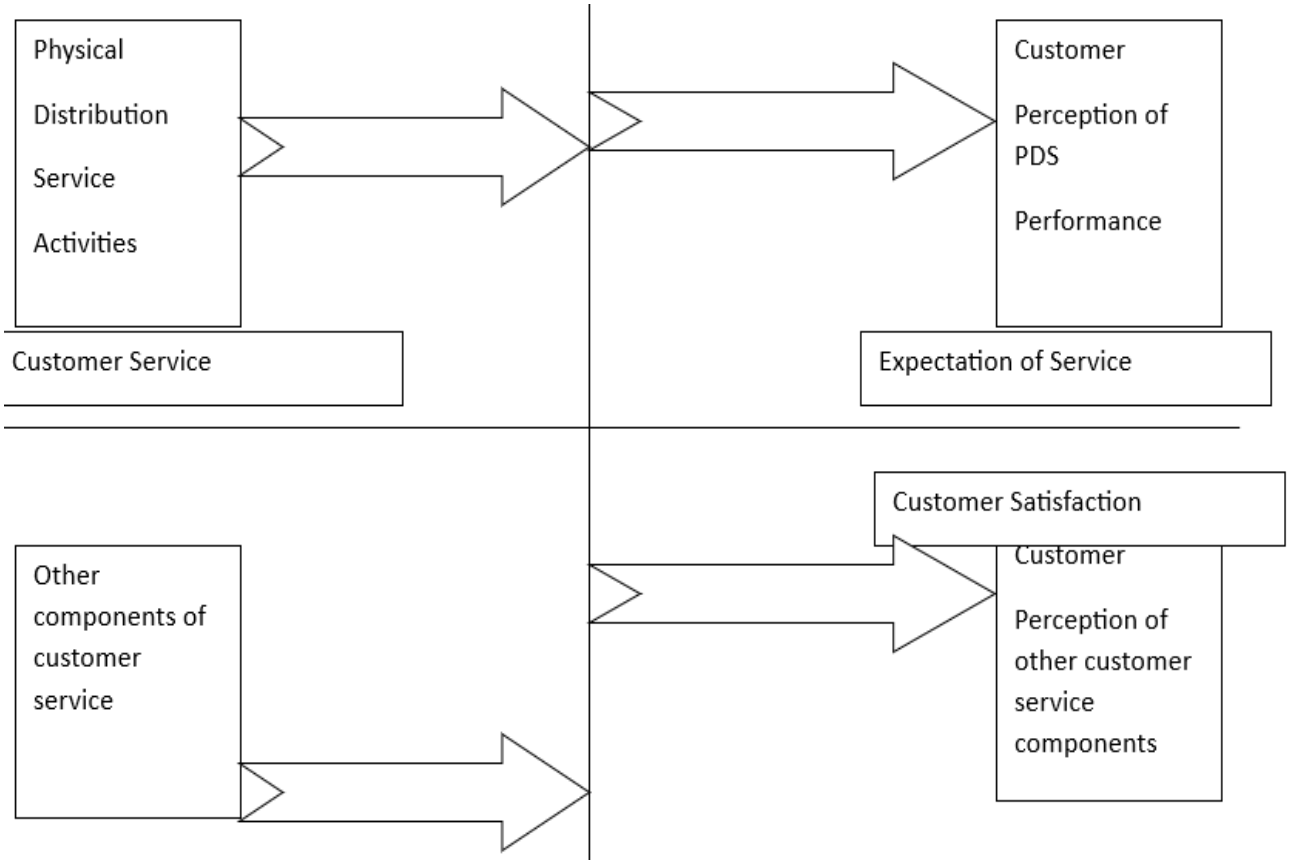

Figure 5: Conceptual Customer Service/Satisfaction Model Source: Adapted from Chukwu (2009). Marketing logistics: A management approach, Melfin Pulisher, first edition.

Rakowski (1982) in Mentzer *et al* (2009) suggested three approaches to organizing the area of customer service (physical distribution being considered a part of overall customer service). These approaches were based on (1) time-phasing (2) operational attributes and (3) functional areas. In the operational attributes approach, Rakowski separated the more objective performance measures (speed, availability, accuracy, consistency and product performance) from the more subjective customer expectation and perception measures (convenience, flexibility, personalized attention, and information). While the performance measures may be easily measured by a selling

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firm, the customer's expectations and perceptions are of critical importance. Conceptually, in the Vendor Activity Domain, physical distribution service is a family of activities with associated performance measures (figure 5).

METHODOLOGY

The study employed a survey research design and this was considered beneficial because it allowed the researcher to focus on a specific population and gather primary data without any form of alteration to the population sample. This design allowed the researcher to focus on the systematic investigation of the practice of logistics management and the level of customer satisfaction in the pharmaceutical industry. The research area was the South Eastern geopolitical zone of Nigeria, which is made up of the five states of Abia, Anambra, Ebonyi, Enugu and Imo. This part of the country was used due to the high level of industrial activities in the area which includes pharmaceutical activities and its wide range of distribution activities. Primary data was collected using structured questionnaires from logistics personnel of twenty five pharmaceutical companies chosen randomly, and secondary data was collected from textbooks, reports and other publications. The study was made up of 43905 logistics personnel working in the targeted companies. By using the Freund and William's formula, a sample of 384 participants formed. Proportional stratified sampling was used in conjunction with Bowley's proportional allocation for the purpose of adequate representation across the five states. The primary data collection tool was a self-administered questionnaire which had two sections: Section A with demographic questions and Section B containing research variables which were measured on a five point Likert scale. The validity was confirmed by an expert review. The instrument's reliability was evaluated using Cronbach's alpha which ranged from 0.870 to 0.896 which is above the 0.70 acceptance level. The analysis was done using descriptive statistics which included frequency and percentage distribution. Z-tests were applied to analyze the hypotheses and identify relationships, and to evaluate the strength of the research variables.

RESULTS

Data Presentation

Table 4.1 Copies of the Questionnaire Distributed and Returned

Respondents	Copies of Questionnaire Distributed	Copies Returned	Percentage Returned	Copies not Returned	Percentage not Returned
Staff	384	346	90	38	10
Total	384	346	90	38	10

Source: Field Survey, 2025

Table 4.1, shows that 346 copies of the questionnaire were duly completed and returned representing 90 percent, while 38 copies of the questionnaire were not duly completed and returned from the respondents representing 10 percent. Therefore, a total of 346 (90%) copies was used for analysis.

4.2 Analysis of Bio-Data of Respondents

Table 4.2 Bio-Data of Respondents

Category	Option	Frequency	Percentage (%)
Gender	Male	246	71
	Female	100	29

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	Total	**346**	**100**
Age (Years)	18–25	150	43
	26–30	100	29
	31–35	50	14
	36 and above	46	13
	Total	**346**	**100**
Marital Status	Single	46	13
	Married	300	87
	Total	**346**	**100**
Highest Educational Qualification	Ph.D	20	6
	Masters	50	14
	First Degree	40	12
	OND/NCE	100	29
	SSCE	96	28
	FSLC	40	11
	Total	**346**	**100**

Source: Field Survey, 2025

Gender

Table 4.2 above, shows that 246 (71%) of the respondents were males while 100(29%) were females. Therefore, majority of respondents were male.

Age Bracket

Table 4.2 above shows that 150(43%) of the respondents fall between 18-25 years, 100 (29%) were between 2630 years, 50 (14%) fall between 31-35 years, 46 (13%) were between the ages of 36 years and above. From this analysis we conclude that the majority of respondents fall between the ages of 18 and 25 years.

Marital Status

Table 4.2 shows that 46(13%) of the respondents were single while 300(87%) were married. Therefore, we conclude that majority of the respondents were married.

Highest Educational Qualification

Table 4.2 shows that 20(6%) respondents were Ph.D. holders, 50(14%) were holders of masters' degree certificates, 40(12%) has first degree certificates, 100 (29%) persons has OND/NCE certificates, 96(28%) were holders of SSCE/GCE/WASC certificate and 40(11%) has FSLC. From this analysis majority of the respondents have Diploma certificates.

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4.3 Analysis of Research Question 1

Research Question 1: To what extent does packaging affect repeat purchase of pharmaceutical firms in South East, Nigeria?

Table 4.3: Effect of Packaging on Repeat Purchase of Pharmaceutical Firms in South East, Nigeria.

Options (N =346)	SA	A	UD	D	SD	Total	Mean	Decision
Drug package are usually defective.	50 (14%) 250	11 (3%) 44	10 (3%) 30	205 (59%) 410	70 (20%) 70	346 100 804	2.3	Reject
Drugs are wellpackaged for easy transportation.	150 (43%) 750	100 (29%) 400	20 (6%) 60	50 (14%) 100	26 (8%) 26	346 100 1336	3.9	Accept
Drug packaging are generally costly.	31 (9%)	20 (6%)	5 (1%)	180 (52%)	110 (31%)	346 100	2.1	Reject
	155	80	15	360	110	720		
Packaging offer strong protection for drugs.	50 (14%) 250	11 (3%) 44	10 (3%) 30	205 (59%) 410	70 (20%) 70	346 100 804	2.3	Reject
Packaging beautfly most of drugs.	31 (9%) 155	20 (6%) 80	5 (1%) 15	180 (52%) 360	110 (31%) 110	346 100 720	2.1	Reject
Average Mean							**2.4**	

Source: Field Survey, 2025

Table 4.3 shows that, respondents were asked whether drug package are usually defective. 50(14%) strongly agreed, 11(3%) agreed, 10(3%) undecided, 205(59%) disagreed and 70(20%) strongly disagreed. In line with mean value of 2.3 which fall under disagreed scale shows that majority of the respondents "disagreed" that drug package are usually defective. The respondents were asked their opinions on whether drugs are well-packaged for easy transportation. 150(43%) strongly agreed, 100(29%) agreed, 20(6%) undecided, 50(14%) disagreed and 26(8%) strongly disagreed. Therefore, the majority of the respondents agreed with evidence of mean value of 3.9 that drugs are well-packaged for easy transportation. Respondents were asked whether drug packaging are generally costly, 31(9%) strongly agreed, 20(6%) agreed, 5(1%) undecided, 180(52%) disagreed and 110(31%) strongly disagreed. Hence, the majority of the respondents disagreed with evidence of mean value of 2.1 that drug packaging are generally costly. The respondents were asked whether packaging offer strong protection for

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drugs. 50(14%) strongly agreed, 11(3%) agreed, 10(3%) undecided, 205(59%) disagreed and 70(20%) strongly disagreed.In line with mean value of 2.3 which fall under disagreed scale shows that majority of the respondents "disagreed" that packaging offer strong protection for drugs. The respondents were asked whether packaging beautfly most of drugs. 31(9%) strongly agreed, 20(6%) agreed, 5(1%) undecided, 180(52%) disagreed and 110(31%) strongly disagreed. Therefore, the majority of the respondents disagreed with evidence of mean value of 2.1 that packaging beautfly most of drugs. Overall result of the analysis on table 4.3 shows that the average mean score is 2.4 which is approximately 2, point on a 5-point likert scale. This result shows that the majority of the respondents "disagreed". that most times packaging negatively affect repeat purcahse in pharmecutical firms in South East, Nigeria.

Table 4.4 Customer Satisfaction (Dependent Variable)

Options (N =346)	SA	A	UD	D	SD	Total	Mean	Decision Mark
The level of customer satisfaction has increased.	205 (59%) 1,025	70 (20%) 280	10 (3%) 30	50 (14%) 100	11 (4%) 11	346 100 1446	4.2	Accept
There has been a rise in the volume of sales.	150 (43%) 750	100 (29%) 400	20 (6%) 60	50 (14%) 100	26 (8%) 26	346 100 1336	3.9	Accept
Quality of products delivered have increased.	31 (9%) 155	20 (6%) 80	5 (1%) 15	180 (52%) 360	110 (31%) 110	346 100 720	2.1	Reject
The firm meets customer requirement.	50 (14%) 250	11 (3%) 44	10 (3%) 30	205 (59%) 410	70 (20%) 70	346 100 804	2.3	Reject
There has been an increase in the market share of the firm.	31 (9%) 155	20 (6%) 80	5 (1%) 15	180 (52%) 360	110 (31%) 110	346 100 720	2.1	Reject
Average Mean							2.98	

Source: Field Survey, 2025

Table 4.4, the respondents were asked whether level of customer satisfaction has increased. 205(59%) strongly agreed, 70(20%) agreed, 10(3%) undecided, 50(14%) disagreed and 11(4%) strongly disagreed. In line with mean value of 4.2 which fall under agreed scale shows that majority of the respondents "agreed" that the level of customer satisfaction has increased.

The respondents were asked whether there has been a rise in the volume of sales. 150(43%) strongly agreed, 100(29%) agreed, 20(6%) undecided, 50(14%) disagreed and 26(8%) strongly disagreed. Therefore, the majority of the respondents agreed with evidence of mean value of 3.9 that there has been a rise in the volume

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of sales. Respondents were asked whether quality of products delivered have increased, 31(9%) strongly agreed, 20(6%) agreed, 5(1%) of respondents were undecided, 180(52%) disagreed and 110(31%) strongly disagreed. Hence, the majority of the respondents disagreed with evidence of mean value of 2.1 that quality of products delivered have increased. The respondents were asked whether there has been an increase in the market share of the firm. 31(9%) strongly agreed, 20(6%) agreed, 5(1%) of respondents were undecided, 180(52%) disagreed and 110(31%) strongly disagreed. Therefore, the majority of the respondents disagreed with evidence of mean value of 2.1 that there has been an increase in the market share of the firm. Overall result of the analysis on table 4.4 shows that the average mean score is 2.98 which is approximately 3 point on a 5-point likert scale. This result shows that the majority of the respondents were undecided on whether customer satisfaction affects logistics management practice.

4.4 Analysis of Research Question 2

Research Question 2: To what extent does delivery speed affect customer loyalty of pharmaceutical firms in South East, Nigeria?

Table 4.5: Effect of Delivery Speed on Customer Loyalty of Pharmaceutical Firms in South East, Nigeria.

Options (N =346)	SA	A	UD	D	SD	Total	Mean	Decision
Products are delivered in the right quantity to the customer.	220 (64%) 1100	50 (14%) 200	10 (3%) 30	50 (14%) 100	16 (5%) 16	346 100 1446	4.2	Accept
The firm labels and loads the right product to the right vehicle.	150 (43%) 750	100 (29%) 400	20 (6%) 60	50 (14%) 100	26 (8%) 26	346 100 1336	3.9	Accept
Products leaves the delivery speed in a clean package and damage free for customer.	180 (52%) 900	110 (32%) 440	5 (1%) 15	9 (3%) 18	42 (12%) 42	346 100 1415	4.1	Accept
The firm delivery speed is close to the proximity of the customer.	205 (59%) 1025	70 (20%) 210	10 (3%) 30	50 (14%) 100	11 (3%) 11	346 100 1376	4.0	Accept
The firm stores it products using its facility.	150 (43%) 750	100 (29%) 400	20 (6%) 60	50 (14%) 100	26 (8%) 26	346 100 1336	3.9	Accept
Average Mean							**4.02**	

Source: Field Survey, 2025

The respondents were asked whether products are delivered in the right quantity to the customer. 220(64%) strongly agreed, 50(14%) agreed, 10(3%) of respondents were undecided, 50(14%) disagreed and 16(5%)

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strongly disagreed. In line with mean value of 4.2 which fall under "agreed" scale shows that majority of the respondents agreed that Products are delivered in the right quantity to the customer. The respondents were asked whether their firm labels and loads the right product to the right vehicle. 150(43%) strongly agreed, 100(29%) agreed, 20(6%) of respondents were undecided, 50(14%) disagreed and 26(8%) strongly disagreed. Therefore, the majority of the respondents agreed with evidence of mean value of 3.9 the firm labels and loads the right product to the right vehicle. Respondents were asked whether products leaves the delivery speed in a clean package and damage free for customer, 180(52%) strongly agreed, 110(32%) agreed, 5(1%) of respondents were undecided, 9(3%) disagreed and 42(12%) strongly disagreed. Hence, the majority of the respondents agreed with evidence of mean value of 4.1 that Products leaves the delivery speed in a clean package and damage free for customer. In table 4.5, the respondents were asked whether the firm delivery speed is close to the proximity of the customer. 205(52%) strongly agreed, 70(20%) agreed, 10(3%) of respondents were undecided, 50(14%) disagreed and 11(3%) strongly disagreed. In line with mean value of 4.0 which fall under agreed scale shows that majority of the respondents agreed that The firm delivery speed is close to the proximity of the customer. The respondents were asked whether the firm stores it products using its facility, 150(43%) strongly agreed, 100(29%) agreed, 20(6%) of respondents were undecided, 50(14%) disagreed and 26(8%) strongly disagree. Consequently, the majority of the respondents agreed with evidence of mean value of 3.9 that the firm stores it products using its facility. The overall result of the analysis on table 4.5 shows that the average mean score was is 4.02 which is approximately 4 point on 5-point likert scale. This means that the majority of respondents "agreed" that delivery speed efeects customer loyalty of pharmaceutical firms in South East, Nigeria.

4.5 Analysis of Research Question 3

Research Question 3: To what extent does order completeness affect customer referrals of pharmaceutical firms in South East, Nigeria?

Table 4.6: Effect of Order Completeness on Customer Referrals of Pharmaceutical Firms in South East, Nigeria.

Options (N =346)	SA	A	UD	D	SD	Total	Mean	Decision
The firm uses electronic order completeness.	10 (3%) 50	11 (3%) 44	205 (59%) 615	50 (14%) 100	70 (20%) 70	346 100 879	2.5	Reject
Orders are processed in a timely manner.	150 (43%) 750	100 (29%) 400	20 (6%) 60	50 (14%) 100	26 (8%) 26	346 100 1336	3.9	Accept
The firm uses a database to track	10	11	50	205	70	346	2.5	Reject
its orders and realtime update.	(3%) 50	(3%) 44	(14%) 100	(59%) 615	(21%) 70	100 879		
The firm has on time vendors for delivery when	31 (9%)	20 (6%)	5 (1%)	180 (52%)	110 (31%)	346 100	2.1	Reject

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real-time update runs low.	155	80	15	360	110	720		
ERP systems eliminate double payments in the firm.	10 (3%) 50	11 (3%) 44	205 (59%) 615	50 (14%) 100	70 (20%) 70	346 100 879	2.5	Reject
Average mean							**2.7**	

Source: Field Survey, 2025

The respondents were asked whether the firm uses electronic order completeness. 10(3%) strongly agreed, 11(3%) agreed, 205(59%) of respondents were undecided, 50(14%) disagreed and 70(20%) strongly disagreed. In line with mean value of 2.5 which fall under disagreed scale shows that majority of the respondents disagreed that the firm uses electronic order completeness. The respondents were asked whether orders are processed in a timely manner. 150(43%) strongly agreed, 100(29%) agreed, 20(6%) of respondents were undecided, 50(14%) disagreed and 26(8%) strongly disagreed. Therefore, the majority of the respondents agreed with evidence of mean value of 3.9 that orders are processed in a timely manner. Respondents were asked whether the firm uses a database to track its orders and real-time update, 10(3%) of respondents strongly agreed, 11(3%) agreed, 50(14%) of respondents were undecided, 205(59%) disagreed and 70(20%) strongly disagreed. Hence, the majority of the respondents disagreed with evidence of mean value of 2.3 that the firm uses a database to track its orders and real-time update. The respondents were asked whether the firm has on time vendors for delivery when real-time update runs low. 31(9%) strongly agreed, 20(6%) agreed, 5(1%) of respondents were undecided, 180(52%) disagreed and 110(32%) strongly disagreed. In line with mean value of 2.1 which fall under disagreed scale shows that majority of the respondents disagreed that the firm has on time vendors for delivery when realtime update runs low. The respondents were asked their opinions on whether ERP systems eliminate double payments in the firm. 10(3%) of respondents strongly agreed, 11(3%) agreed, 205(59%) of respondents were undecided, 50(14%) disagreed and 70(20%) strongly disagreed. Therefore, the majority of the respondents agreed with evidence of mean value of 2.5 that ERP systems eliminate double payments in the firm. The overall result of the analysis presented in table 4.6 shows that the average mean score is 2.7 which is approximately 4 points on 5-points likert scale. Thus means that the majority of the respondents "agreed" that order completeness has strong effect on customer referrals of pharmaceutical firms in South East, Nigeria.

4.6 Analysis of Research Question 4

Research Question 4: To what extent does on-time delivery affect customer retention of pharmaceutical firms in South East, Nigeria?

Table 4.7: Effect of On-time Delivery on Customer Retention of Pharmaceutical Firms in South East, Nigeria.

Options (N =346)	SA	A	UD	D	SD	Total	Mean	Decision
Consumers do make the decision to make repeat purchases due	50 (14%)	11 (3%)	10 (3%)	205 (59%)	70 (20%)	346 100	2.3	Reject

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to good on-time delivery.	250	44	30	410	70	804		
Consumer products on-time delivery is an important factor in products' market share.	26 (8%) 130	100 (29%) 400	20 (6%) 60	50 (14%) 100	150 (43%) 150	346 100 840	2.4	Reject
Consumer products on-time delivery helps consumers confirm/determine the adequacy of the product.	31 (9%) 155	20 (6%) 80	5 (1%) 15	180 (52%) 360	110 (31%) 110	346 100 720	2.1	Reject
Consumers seek ontime delivery attributes that justify their cognitive disposition.	50 (14%) 250	11 (3%) 44	10 (3%) 30	205 (59%) 410	70 (20%) 70	346 100 804	2.3	Reject
Consumer products on-time delivery helps consumers finally decide whether they want a product or not.	31 (9%) 155	20 (6%) 80	5 (1%) 15	180 (52%) 360	110 (31%) 110	346 100 720	2.1	Reject
Total							**11.2/5=2.24**	

Source: Field Survey, 2025

The respondents were asked whether consumers do make the decision to make repeat purchases due to good ontime delivery. 50(14%) strongly agreed, 11(3%) agreed, 10(3%) of respondents were undecided, 205(59%) disagreed and 70(20%) strongly disagreed. In line with mean value of 2.3 which fall under disagreed scale shows that majority of the respondents "disagreed" that consumers do make the decision to make repeat purchases due to good on-time delivery. The respondents were asked about consumer products on-time delivery is an important factor in products' market share. 26(8%) strongly agreed, 100(29%) agreed, 20(6%) of respondents were undecided, 50(14%) disagreed and 150(43%) strongly disagreed. Therefore, the majority of the respondents strongly agreed with evidence of mean value of 2.4 that consumer products on-time delivery is an important factor in products' market share. Respondents were asked whether consumer products on-time delivery helps consumers confirm/determine the adequacy of the product. 31(9%) strongly agreed, 20(6%) agreed, 5(1%) of respondents were undecided, 180(52%) disagreed and 110(31%) strongly disagreed. Hence, the majority of the respondents disagreed with evidence of mean value of 2.1 that consumer products on-time delivery helps consumers confirm/determine the adequacy of the product. The respondents were asked whether consumers seek on-time delivery attributes that justify their cognitive disposition. 50(14%) of respondents strongly agreed, 11(3%) agreed, 10(3%) of respondents were undecided, 205(59%) disagreed and 70(20%) strongly disagreed. In line with mean value of 2.3 which fall under disagreed scale shows that majority of the respondents "disagreed" that consumers seek on-time delivery attributes that justify their cognitive disposition. The respondents were asked whether consumer products on-time delivery helps consumers finally decide whether they want a product or not. 31(9%) strongly agreed, 20(6%) agreed, 5(1%) of respondents were undecided, 180(52%) disagreed and 110(31%) strongly disagreed. Therefore, the majority of the respondents disagreed with

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evidence of mean value of 2.1 states that consumer products on-time delivery helps consumers finally decide whether they want a product or not. Overall result of the analysis presented in table 4.7 shows that the average mean score is 2.24 which is approximately 2 points on a 5-point likert scale. This result shows that the majority of the respondents "disagreed" on-time Delivery has strong effect on customer retention of pharmaceutical firms in South East, Nigeria.

4.7 Analysis of Research Question 5

Research Question 5: To what extent does real-time update affect customer response rate of pharmaceutical firms in South East, Nigeria?

Table 4.8: Effect of Real-Time Update on Customer Response Rate of Pharmaceutical Firms in South East, Nigeria.

Options (N =346)	SA	A	UD	D	SD	Total	Mean	Decision
Q-systems are used in the firm to control its real-time update	50 (14%) 250	11 (3%) 44	10 (3%) 30	205 (59%) 410	70 (20%) 70	346 100 804	2.3	Reject
Enterprise resource planning system used in the firm to control its real-time update.	26 (8%) 130	100 (29%) 400	20 (6%) 60	50 (14%) 100	150 (43%) 150	346 100 840	2.4	Accept
The firm has automated its recording of realtime update.	31 (9%) 155	20 (6%) 80	5 (1%) 15	180 (52%) 360	110 (31%) 110	346 100 720	2.1	Reject
The real-time update management practices reduce real-time update bottleneck in production.	50 (14%) 250	11 (3%) 44	10 (3%) 30	205 (59%) 410	70 (20%) 70	346 100 804	2.3	Reject
There is cycle counting of realtime update in the firm.	31 (9%) 155	20 (6%) 80	5 (1%) 15	180 (52%) 360	110 (31%) 110	346 100 720	2.1	Reject
Total							**12.7/5=2.4**	

Source: Field Survey, 2025

The respondents were asked whether Q-systems (table 4.8) are used in the firm to control its real-time update, 50(14%) of respondents strongly agreed, 11(3%) agreed, 10(3%) of respondents were undecided, 205(59%)

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disagreed and 70(20%) strongly disagreed. In line with mean value of 2.3 it shows that the majority of the respondents disagreed that Q-systems are used in the firm to control its real-time update. The respondents were asked enterprise resource planning system used in the firm to control its real-time update, 26(8%) strongly agreed, 100(29%) agreed, 20(6%) undecided, 50(14%) disagreed and 205(43%) strongly disagreed. Therefore, the majority of the respondents disagreed with evidence of mean value of 2.4 that enterprise resource planning system used in the firm to control its real-time update. Respondents were asked whether the firm has automated its recording of real-time update, 31(9%) strongly agreed, 20(6%) agreed, 5(1%) undecided, 180(52%) disagreed and 110(31%) strongly disagreed. Hence, the majority of the respondents disagreed with mean value of 2.1 that the firm has automated its recording of real-time update. The respondents were asked whether the real-time update management practices reduce real-time update bottleneck in production, 50(14%) strongly agreed, 11(3%) agreed, 10(3%) undecided, 205(59%) disagreed and 70(20%) strongly disagreed. In line with mean value of 2.3 it result shows that majority of the respondents disagreed that the real-time update management practices reduce real-time update bottleneck in production. The respondents were asked whether there is cycle counting of real-time update in the firm, 31(9%) strongly agreed, 20(6%) agreed, 5(1%) of respondents were undecided, 180(52%) disagreed and 110(31%) strongly disagreed. Therefore, the majority of the respondents disagreed with evidence of mean value of 2.1, it was obvious that there is cycle counting of real-time update in the firm. The overall mean score of the analysis on table 4.8 which is approximately 2 points, this shows that the majority of the respondents “disagreed” that real-time update strongly affect customer response rate of pharmaceutical firms in South East, Nigeria.

DISCUSSION OF FINDINGS

The research examined the impacts of logistics management on customer satisfaction within pharmaceutical companies in the Southeast region of Nigeria. Results of the study indicated that there was a strong relationship across the board on all the variables. This strengthened the argument for the mastery of logistics for better customer outcomes. First, the data showed that there was a strong positive correlation of packaging on repeat purchase, where the Z-value was 11.180, clear above the threshold of 1.96. This means that informative and cleverly designed packages are strong motivators for customers to repurchase. This agrees with Naser and Leila (2012), who argue that robust product labels and clear product information improves customer confidence and fosters repeat business. This means that packaging is effective for marketing and trust development. In addition, this research found that delivery speed influences customer retention in a positive manner, evidenced by a Z statistic of 10.483. Thus, delivery and fulfillment services in a timely manner are of paramount importance in fostering customer retention. This finding corroborates the work of Adam et al. (2013) regarding delivery speed alongside the integration of management information system s in sustaining operational efficiency in small and medium enterprises. Within the pharmaceutical industry, where delivery speed relates to time sensitivity, delivery speed is pivotal towards customer retention. In addition, the findings indicated that order completeness is directly correlated with customer referrals, with a Z score of 2.674. Customers are more likely to recommend pharmaceutical companies to others for more than just the fulfillment of their orders. This aligns with the findings of Peter et al. (2020) that order completeness drives enhanced satisfaction, commitment, and referrals in the services sector. Finally, the research determined that on time delivery has a Z score of 2.685, suggesting that it greatly influences customer retention. The firms which customers are loyal to the most are the ones that consistently deliver products on the dates that are promised. This supports Deliya and Parmar’s (2012) assertion that timely delivery features positively slip consumer behavior. Timely delivery, especially in competitive markets, is one way to achieve customer retention as it promotes reliability. The research also validated that real time updates affects customer response rates most significantly with a Z value of 15.110, which is highest under the variable. Customers responsive in tracking information as order status and other information that helps in their real time. Chiu and Tang (2020) supports the findings which states that real-time updates as a strategic performance improvement tool in responding to market changes. Availability of real time updates improves visibility and certainty, which determines the level and speed of customer response. All in all the discussion emphasizes packaging and speed of delivery, completeness and punctuality of the order, and real-time updates as important in the logistics control endothelial management. The comments demonstrates how these factors affect customer satisfaction in the pharmaceutical workplace.

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CONCLUSION

The purpose for this research was to assess the impact of logistics management practices on the level of customer satisfaction by pharmaceutical companies operating in the South East region of Nigeria. Findings in this research show that packaging, speed of delivery, completeness of the order, punctual delivery, and real time updates all positively and significantly impacted customer satisfaction in terms of repeat purchase, loyalty, referrals, retention and response rate. This suggests that in the pharmaceutical industry, that effective logistics management must be considered a strategic competitive advantage, and not only an operational requirement. Trust and repeat purchases are attained through satisfactory packaging. Customer loyalty is driven by delivery speed. The referrals are attained through order completeness, retention through on time delivery, and responsiveness and transparency through real time updates. These practices indicate that logistics are a crucial functional area to customer satisfaction, and the long-term viability of the business. These outcomes lead to the conclusion that pharmaceutical companies should implement packaging that is both innovative and informative to promote consumer trust and repeat purchases. Customized technology and effective scheduling should be used to speed up delivery processes in order to maintain customer loyalty. The reputation and customer referrals of a business are dependent on the order accuracy and completeness in all aspects. In addition, there should be increased focus on strategic planning, monitoring and performance evaluation to support on-time delivery, in order to enhance customer retention. Developments in technology like automated tracking and communication systems can provide clients with current situational reports, minimize ambiguity, and provide faster response times. In further research, scholars can expand this work by analyzing the moderating impacts of adopting digital technology, integrating the supply chain, and regulatory policies on the correlation between the practices of logistics management and customer satisfaction.

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