

PRODUCT DISPENSING MANAGEMENT AND CUSTOMER SATISFACTION: A STUDY OF RETAIL OUTLETS OF NIGERIA NATIONAL PETROLEUM CORPORATION IN SOUTH-WEST NIGERIA

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ABSTRACT

The growth of the Nigeria downstream sector has been phenomenal with the attendant competition for sizeable share of the ever-increasing market opportunities. It is obvious that increase in market opportunities in this sector have led to growth in the number of product marketing companies in Nigeria that are rarely matched with an equal performance, particularly, in the form of satisfaction of customers. Obviously, inefficient management of product dispensing has severally led to gross customers' dissatisfaction with the service level experienced in NNPC outlets due to issues surrounding product's quality, quantity and price. This study examine product dispensing management system and its relative effect on customer satisfaction in selected Nigeria National Petroleum Corporation (NNPC) retail outlets in South-West, Nigeria. Specific objectives include to investigate the extent to which dispensed product quantity and quality significantly influence customer satisfaction in the NNPC retail outlets in South-West, Nigeria. A 5-point Likert scale questionnaire was designed to collect primary data from a sample of 384 selected from the six mega stations and twelve affiliate stations spread across the South-West region of Nigeria. The study hypotheses were tested using multiple regression analysis, with the aid of SPSS. Findings revealed that dispensed product quantity and quality of product dispensed significantly influence customer satisfaction, with regression results showing $R^2=0.772$; $P<0.005$ at 5% level of significance. The study concluded that the quality and quantity of petroleum dispensed by NNPC retail business units are major predictors of customer satisfaction. The study therefore recommended that NNPC retail outlets must largely embrace appropriate product dispense system with strong emphasis on appropriate dispensed product quantity and quality so as to adequately promote and improve the level of customers' satisfaction.

Keywords: Dispensed Product Quantity, Quality of Product Dispensed, Customer Satisfaction, NNPC Retail Outlets, Product Dispensed Management

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1.1 Introduction

The Nigeria oil and gas industry consist of three major set of players, the upstream sector which involves exploration and production; the midstream sector which primarily gives support to the upstream; and the downstream sector which deals with refining, marketing and distribution (Mpuon, Eyo, & Kajang, 2020; Gonewa & Henry, 2014). This study focus is on the downstream sector, with the NNPC playing a prominent role. The downstream activities involve the import and export, sale and distribution of petroleum products such as premium motor spirit (PMS), automotive gas oil (AGO), household kerosene (HHK), liquefied petroleum gas (LPG), and lower-pour fuel oil (LPFO). These products are utilized by almost everybody on daily basis at an average of over 60 million litres daily usage.

The growth of the Nigeria downstream sector has been phenomenal, with the attendant competition for sizeable share of the ever-increasing market opportunities. It is obvious that increase in market opportunities in this sector have led to growth in the number of product marketing companies in Nigeria but has not been matched with an equal enhanced performance, particularly, in the form of satisfaction of customers. Invariably, an outstanding but regrettable feature of the downstream sector is frequent petroleum product shortages, particularly during end of the year season, which significantly contributes to customer dissatisfaction. Nigerian has frequently experienced disruptions in the supply of petroleum products over the years. Intimidating queue is a regular scene at the local level in the sector particularly on the products that affect households and personal use (Omolekan, 2020).

Prior to operations of the Nigerian National Petroleum Corporation retail outlets (Mega Stations), many major marketers have been in operation building strategies to satisfy customers or end users but all their efforts in serving the market proved not satisfactory to customers. Nigerian National Petroleum Corporation retail outlets (Major marketer) is a subsidiary of NNPC which was established in 2002 and came into full operation in 2004 in order to minimize the problem of irregular supply of petroleum products in the country. As stated in its mission statement, the primary aim is to further ascertained regular availability of products to end users thereby promoting customer satisfaction. One of the key factors in NNPC retail business outlets is that customers get value for what they pay for (NNPC, 2004).

However, some researchers are of the opinion that despite the active participation of the NNPC in the downstream sector, the needed results have not yet achieved, with obvious evidence showing that most customers are left dissatisfied (Odipe, Lawal, Adio & Karani, 2018). This is because the NNPC as a major marketer in the downstream sector is struggling with choice of adequate strategy to employed so as

to ensure that petroleum products are made available to the consumers in an uninterrupted manner; that the supply and distribution of petroleum products are orderly and consumer friendly; and to identify and minimize major factors responsible for poor performance that result in incidents such as customers dissatisfaction, operation redundancy and waste (Mpuon, et al, 2020).

Globally, product dispensing management in respect to petroleum product is witnessing dynamic changes as a result of massive improvement in technology and all the devices that surround its operations. Product dispensing management system has improved beyond the distribution of products to application of advanced technology. Thus, effective and efficient product dispensing management as a business strategy will keep NNPC going because it will ensure that petroleum products are available at the right quantity, quality, price and location. Conversely, ineffective management of product dispense at times make performance of the outlets erratic because there may be product today and tomorrow there may be nothing to sell.

Therefore, NNPC as the major marketer operating in the sector need to devise viable product dispensing management system that will enable it to reach out to a larger number of the customers for patronage, thereby gaining competitive market advantage. Appropriate management of product dispensing would yield better performance in term of profitable customer acquisition, customer satisfaction and promote positive word of mouth. With this background, the study proceeds to investigate effect of product dispensing management on the satisfaction of the Nigeria National Petroleum Corporation retail outlets in the South West.

1.2 Statement of the Problem

In Nigeria, many companies, both public and private have liquidated, inclusive of few major marketer of petroleum products (NNPC retail outlets) because of their poor management strategy and inability to forecast and identify demand level of potential buyers in a target market. This has been attributed to major reasons why the final consumers have been dissatisfied by being under-supplied and buying products with higher prices that are difficult to afford. Thus, poor management of product dispensing in the supply chain system presents a problem of product availability to consumers, which invariably affect customers' satisfaction.

The NNPC unarguably is one of the PMS retail outlets that sell at lowest price in the country due partly to the support it gets from the government. The critical issue scholars often raised was the unaligned relationship between their price and the level of customer patronage. It is expected that an outlet that sells at a relatively lower price should command more customer traffic than competition. However, one hardly

sees much customer traffic in some of the NNPC retail outlets except in periods of fuel scarcity that makes their outlet centre of attraction as customer struggle to purchase product. This problem has been attributed to erratic product dispense in some of the major marketer outlets (Department of Petroleum Resources (DPR), 2020)

Impressively, the three strategic themes of NNPC retail business are business growth, being self-sustaining, and customers' satisfaction, hence, customer must not leave any of the retail outlets with dissatisfaction (NNPC, 2014). Customers' perceptions of NNPC retail outlets service quality have been generally unwelcoming (Enemuo & Carim, 2021). For instance, it has been reported that unguarded petroleum marketers use some NNPC retail outlets to defraud customers by using irregular dispensing system (DPR, 2019). On this note, this study examined product dispensing management system and its effect on customer satisfaction in selected Nigeria National Petroleum Corporation (NNPC) retail outlets in South-West, Nigeria.

Furthermore, past studies have given different perspectives on the effect supply chain system on variables including strategic marketing, strategic orientation, firm performance, profitability, market share, and competitive advantage (Abiodun, et al, 2020; Breznik & Lahovnik, 2016). Relatively, few studies have been previously done in the context of petroleum products dispensing management in Nigeria which particularly buttresses operating situations in Nigeria with empirical bases and implications. This is the gap in knowledge that this study filled.

1.3 Research Objectives

The main objective of this study is to investigate the effect of product dispensing management system on customer satisfaction in the NNPC retail outlets in South-West, Nigeria. The following were the specific objectives for the study; to

- i. investigates the extent to which dispensed product quantity significantly influence customer satisfaction in the NNPC retail outlets in South-West, Nigeria;
- ii. examine the extent to which quality of product dispensed significantly influence customer satisfaction in the NNPC retail outlets in South-West, Nigeria.

1.4 Study Hypotheses

The following hypotheses stated in null form were stated in the study:

H₀₁: Product's quantity dispensed has no significant influence on customer satisfaction in the NNPC retail outlets in South-West, Nigeria.

H₀2: Quality of product dispensed has no significant influence on customer satisfaction in the NNPC retail outlets in South-West, Nigeria.

2. Literature Review

2.1 Product Dispensing Management

Product dispensing management is a process of creating and sustaining an operational environment for effective and efficient fuel dispensing system. It is a constant balancing act between the competing pressures of time, cost and quality. However, with ever-increasing competition in the market place, cost often becomes the prevalent consideration (Poi & Ogonu, 2019). In an established petroleum retail outlet, decision about how to effectively and efficiently dispense products and services to final consumers is among the most the vital decisions confronting management. Fuel dispensing is the process used to pump liquid fuels such as gasoline, diesel fuel, oil, or kerosene into a vehicle, aircraft, storage tank, or portable container (DPR, 2018).

Typically, a fuel dispenser also known as petrol pumps, or gas pumps is a machine at a filling station used to pump gasoline, diesel, CNG, CGH₂, HCNG, LPG, LH₂, ethanol fuel, bio-fuels like biodiesel, kerosene, or other types of fuel into vehicles and other vessels. Fuel-dispensing system encompasses maintenance of hydraulic continuity, regulation of the direction of flow and fluid pressure of petroleum products. The system is equally responsible for pressurizing the fuel and moving it through; for metering the liquid fuel, registering accurately the quantity delivered, and computing the price of the delivery. Some components of the system provide control for the operation of each of the transaction, switching it on and off, regulating the delivery, resetting the volume and price indicators, among others.

Therefore, petroleum product dispensing management is a business strategy for creating time, place and possession utilities (Alarape, Onafadeji & Lawal, 2017). It encompasses the processes of planning, implementing and controlling the movement and storage of petroleum products and materials, and the associated information from the point of origin to the point of sales for consumption (Rushton & Walker, 2007). One of the most important functions for the product dispensing management is to accurately create a process of measuring the level of relationship between the amount of fuel pumped and customers' demand. When suitable processes are put in place, management can proactively match supply with demand and execute the plan with minimum disruptions.

This study conceptualized product dispensing management as a set of managerial activities, undertaken in petroleum retailing business outlet ('filling station') in order to promote effective and efficient management of customer experience in the process of transacting petroleum related products. It is a process that involve information gathering both from buyers and suppliers in order to assist management

in planning and controlling future activities related to product dispense system so as to satisfy customers' demand at the least cost. Thus, the main aim of product dispensing management is to ensure quality work environment for effective and efficient dispense system. This would help to stimulates productivity and market gains, ensure improved customer satisfaction and act as a medium of attracting and retaining profitable customers, thereby increasing profits. The overall goal of the process is to obtain sales opportunities and to reach business targets (Scott & Kesten, 2017).

Omolekan (2020) established that proper dispensing of quantity products, product quality, customer relationship management, good payment plans, and constant availability of products significantly influence end-user experience. Adelabu (2012) asserted that the business performance of NNPC retail outlets can be determine as a combination of product price, product quality, dispensing the right quantity, customer feedback management, ease of accessing location and the ambience that staff creates for customers to transact. Customer feedback management involves managing the overall aspects of a company's customer service experience and satisfaction. To ensure proper customer feedback management, companies need to ensure that customer questions and concerns are answered promptly and efficiently.

This study proposed quality of product dispensed and proper dispensing of quantity products as two most significant factors influencing customer satisfaction in the NNPC retail outlets in Nigeria (DPR, 2019). Dispensing the right quantity includes such aspects as the accuracy, timeliness, adequacy and credibility of the amount of product sold to a customer as at the time a demand is placed. NNPC retail outlets make product available to customers through their automated dispensing machines mounted in their premises. Attendants then vend products into customers' vehicles which at times lead to controversy on the ground of unethical practices. Integrity is crucial to the level of satisfaction customers derive in a final dispensing outlet. When the pump average is perceived to be inappropriate, customers may not think it twice before they change their mind against patronizing an outlet (Lima et al, 2016). Thus, it is of utmost importance that NNPC petrol station demonstrate openness in the process of vending products into vehicles or any means of taking the product (Widyastuti, Sudarmin, BayuRetno & Saputra, 2020)

Product quality simply implies that customer derives maximum utility from a product purchased (Lambert, Emmelhainz & Gardner, 2004). Therefore, for the business outlet to succeed and survive, the quality of product available for dispensing must not be compromised. The quality of products can spell doom if it is not good or not up to the expectation of customers (Sachin & Japan, 2019). A good number of scholars believe that investment into quality product is a good investment that yields best return giving the fact that result will cut across many users and thereby producing good word of mouth, making such

product beat competition easily (Somuyiwa, Mcilt & Adebayo, 2012). On this note, E-vahdati, Akbari and Habibi (2020) opined that it should not be a luxury for customers to get treated with high quality products in a filling stations, it should rather be a necessity. This would afford the outlets the opportunity to evaluate its position within the marketplace in line with its products and the service it offers to customers, the position of its competitors and the demand for its products.

Invariably, dispensing appropriate quality and quantity product, at the right price determine whether or not customers are satisfied and it a significant measurement of the improvement in the service level delivered by the retail outlets of NNPC. One of the most important functions of product dispense management is to accurately measure the amount and quality of fuel sold to customers. Certainly, if a consumer believes the value of fuel he is receiving is not equal to what he is paying for, he will be wary of being cheated or tricked and thereby becomes dissatisfied. An aggrieved and dissatisfied customer could become a negative influence on an outlet as he will relate his experience of dissatisfaction to many people in his circle of influence, which will in turn affect the level of patronage of such outlet. It is with this understanding that the NNPC retail outlets should handle with seriousness the training of their staff that has direct contact with customers on virtues that can promote customer satisfaction (Adeoti, Gbadeyan & Olusanya, 2015).

2.2 Customer Satisfaction

Competition in the downstream sector is getting obdurate as the working environment is constantly changing in complexity. The dynamic nature of the marketing environment calls for the adoption of business strategies that could help improve chance of survival and growth of firms. One of such strategies is promotion of customer satisfaction (Nwoko, Peace & Maduka, 2021). Thus, customer satisfaction should be given utmost consideration by the management of NNPC retail outlets, because it would be more expensive to get new customers than retaining the existing ones (Joleen, 2016). Certainly, business organizations cannot survive and grow if its disregards customers' satisfaction.

Consequently, NNPC retail outlets need not only strive to retain its current customers but also to expand customer's base significantly (Kinyingi, 2018), and this is only possible when the customer are truly satisfied on certain parameters (Irfan, 2014). On this note, Le, Nguyen and Le (2020) assert that the final target of a business organization is to promote customer satisfaction by serving effectively and efficiently customers' demands, and this is so critical because customer satisfaction may ultimately lead to their loyalty. Hill, Roche and Allen (2007) considered customer satisfaction as a barometer that prognosticates the future behavioral pattern of customers.

Essentially, satisfied customers have tendency to return and recommend an outlet to many other potential customers. Conversely, unsatisfied customers have the tendency to spread negative word of mouth that not only tarnishes the image and reputation of the organization but could significantly affect its revenue generation capacity by deterring potential customers from patronizing the business (Hongxiu, et al., 2020). Therefore, customer satisfaction is one of the most important factors that can help increase outlet sales (Le, et al., 2020), increase market share and return on investment (Kinyingi, 2018), and it is a key to building lasting relationships with consumers (Ogungbayi et al., 2019).

Certainly, it has been documented that a single unconstructive review from unsatisfied customer can turn into a loss of about 30 customers (Olsen, 2010). Thus, understanding customers' expectation is crucial to NNPC retail outlets and therefore the management of the outlets should endeavor to carry out initial market surveys to find out what the targeted customers need, which should also give an insight on the market characteristics (Kabuitu & Ngige, 2016). Interestingly, it has been ascertained that today's customers are more aware, educated and open to a lot of information through web sources, internet, bulletins, magazines, journals, articles, etc., (Ogungbayi et al., 2019). This posits the urgency for modern organizations to try hard in achieving customer satisfaction while averting customer frustration (Hongxiu, et al., 2020).

Customer satisfaction is determined by customer feedback as customer assessed the product or service offer after purchasing products or services compared to their prior expectations (Adiza, 2020). Therefore, customer satisfaction is seen as a driving factor for organizations to improve their reputation and image, to minimizing customers' turnover, and to increase meeting customers' needs satisfactorily (Nwoko et al, 2021). Such actions will help organizations to create barriers to customers' switching to other suppliers, and thereby improving business relationships with their customers (Mandan, Bahram, & Maasomah, 2013).

This study conceptualizes customer satisfaction as the result of a subjective evaluative process that customer uses to contrasts prior purchase expectations with perceptions of quality and quantity of petroleum product performance during and after the purchase experience. Majority of customers that have experience with NNPC retail outlets reporting positively about their experience is what constitute customer satisfaction in this study. In petroleum retail business, it is easy for customers to move to competition because it is generic product that is been sold which can easily be sought and bought from another source. Thus, customer satisfaction is every employee and department's business as the phrase "customer is king" must always drive the actions of every employee in organizations (Omoruyi & Mafini, 2020).

2.3 Theoretical Review

Resource-Based View (RBV) Theory

The resource-based view of the firm (RBV) is a theoretical perspective that attempts to describe, explain, and predict, how firms can achieve a sustainable competitive advantage through acquisition and control of distinct resources. Organization resources can be easily categorized into three building block, that is physical assets (example: technological equipment, plant), human assets (example: deployment, competency and skill recourses), and organizational assets (example: culture, business process, and management resources).

Furthermore, the RBV theory is used to examine the impact of organization resources and capabilities on competitive advantage that leads to overall organizational performance. The resources and capabilities that are not conditioned into sustaining activities and business processes will not have positive impact on an organizational performance. The RBV further explain differences in performance of organizations within an industry. In the context of product dispensing practices, RBV can be used to understand the link between strategic management of petroleum retailing outlets and performance metrics such as customer satisfaction in gaining competitive advantage through organizational competencies. Thus, product offer in relation to quality and quantity were assumed to be business all resources that can be used to strategically influence the level of customer satisfaction of NNPC retail outlets. These attributes as a strategic resource as described by the theory can be improved upon to create a competitive advantage in an industry that offers generic product to customers.

2.4 Study's Conceptual Model

As shown in figure 1, the relationship between the dependent and independent variables for the study is conceptualized using input-process-output parameters.

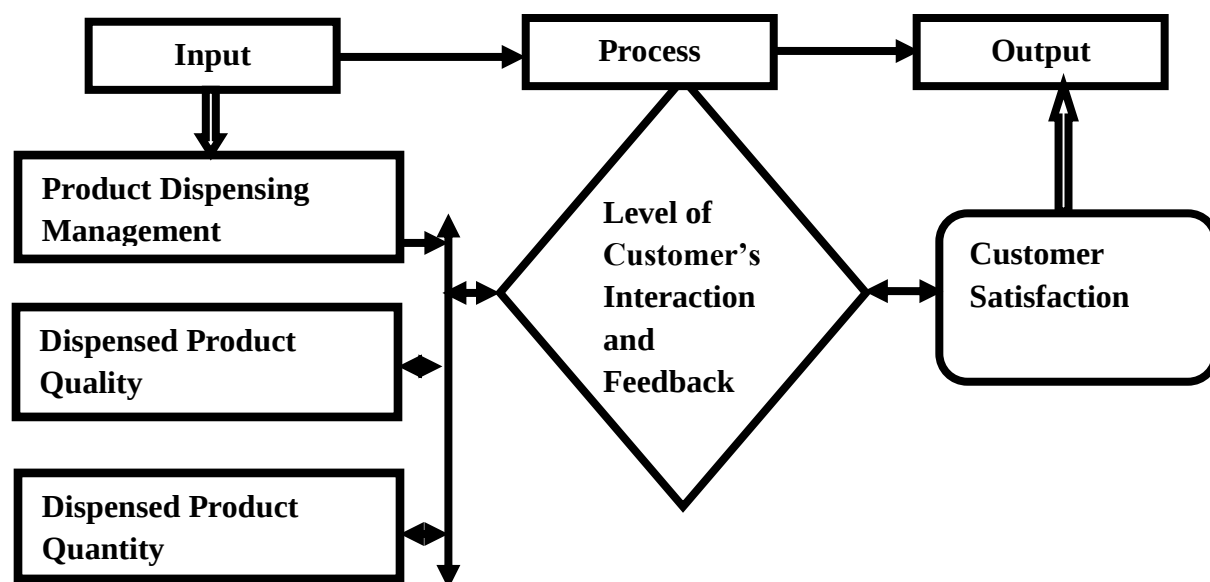


Figure 1: Study Conceptualization
Source: Author's Design (2022)

3. Methodology

The study employed descriptive survey research design which provides an accurate and valid representation of the variables that were relevant to the research questions. The study population involves all the customers of NNPC retail outlets, who were end-users of petroleum related products in the South West Region, Nigeria. South-West region was selected on the basis of holding the record as the highest commercial and consumption region of petroleum products in Nigeria with 39.52% out of the six geopolitical regions and FCT zone in the country. South West had about annual consumption of 3,240,116,090 liters (39.52%) of petrol related products (NNPC Statistical bulletin 2018). Record further revealed that altogether NNPC has 61 retail outlets in South-West; 6 Mega stations (one in each State capital) and 55 floating and affiliate stations (NNPC Statistical bulletin 2020). Therefore, the population of the study was limited to consumers of petroleum related products in the six mega stations and fifty five affiliate's filling stations. The major petroleum related products in these outlets were Premium Motor Spirit (PMS i.e. petrol or gasoline), Automotive Gas Oil (AGO i.e. diesel), Dual Purpose Kerosene (DPK), Liquefied Petroleum Gas (LPG), Aviation Turbine Kerosene (ATK or jet-A1), Industry Fuel, Bitumen and Base Oil. However, for this study, the scope was limited to the three most popular products at the filling stations which were Premium Motor Spirit (PMS), Automotive Gas Oil (AGO), and Dual Purpose Kerosene (DPK). These products were considered for the study because they were products with highest demand from retail outlets within the selected States. However, the exact population of the customers of these products was unknown, meaning it was an infinite population.

Cochran (1977) was used for calculating a representative sample for proportions of infinite population. Therefore, in the determination of the sample size of customers for this study, the statistical formula of Cochran (1977) was adopted as corroborated by Babalola (1998) who asserted that the formula is useful in calculating the minimum sample size when the population is infinite. Thus, the sample for the study was determined as given below:

$$n_0 = \frac{Z^2 pq}{e^2}$$

Where:

Z= the selected critical value of desired confidence level (1.96)

p= the estimated proportion of an attribute that is present in the population (0.5)

q= 1- p and e is the desired level of precision (0.5)

e= Degree of accuracy desired (0.5)

Therefore,

$$n_0 = Z^2pq = \frac{(1.96)^2 (0.5)(1-0.5)}{0.05^2}$$

$n_0 = 384$ Respondents

Therefore, three hundred and eighty four samples were considered as the total number of customers that would be contacted for responses. The proportional distribution of the customers consist of 24 customers to each of the six mega stations (i.e a sub-total of 144) and twenty customers to each of the purposely selected affiliate stations (i.e a sub-total of 240) making a total of 384 customers. This was done on the basis that patronage in the mega station is higher than that of the affiliates (DPR, 2020).

Multi stage sampling method was used for the study which comprises of purposive, simple random and convenience techniques. First, the multistage sampling was used to divide NNPC retail outlets into clusters (i.e. regions), from which South-West region was selected as the base for the study. The outlets were further categorized into mega and affiliates stations to allow for proportional basis to make it easier for primary data collection. Secondly, purposive sampling was used to determine the inclusion of the six mega stations in the region to be included in the study. Thirdly, simple random system was employed to select twelve affiliate stations (i.e 2 in each of the six states). Lastly, convenience sampling method was used to administered questionnaire to the respondents in the selected the retail outlets.

Primary were collected through structured questionnaire, which was designed to elucidate information in respect to issues relating to product dispensing management and customer satisfaction. The items on the questionnaire were formulated as to provide answers to the research questions. In sampling, measuring and recording of the respondents' opinions as expressed in the questionnaire, Likert rating scale of five-points was employed, which enables the respondents to give their opinions to all items based on the scale ranging from strongly agree 5 to strongly disagree 1. Therefore, three hundred and eighty four copies of questionnaire were administered to the respondents. The instrument was self-administered with the aid of six research assistants; one for each state.

Instrument Validity and Reliability Test

The reliability of research instrument was tested using the Cronbach's Alpha with the threshold of 0.7. As depicted in table 3.1, Cronbach's alpha reliability test showed that the coefficient of the overall measure was 0.858, which indicated good reliability and that the overall measure of the scale was highly reliable because it exceeds 0.70. Moreover, the questionnaire was given to management experts in the Department of Business Administration, University of Ilorin. Their suggestions and corrections were included into the final draft of the questionnaire.

Table 1: Cronbach Alpha Reliability for the instrument

Cronbach's Alpha	Cronbach's Alpha Standardized Items	N of Items
.860	858	12

Source: Author's Computation with the aid of SPSS, 2022

Data collected was analyzed to test the hypotheses using statistical technique of multiple regression analysis, with the aid of Statistical Package for Social Sciences. Multiple regression analysis was used because it is useful to check the degree of variability or changes in the level of dependent variable as a result of factors related to independent variable(s).

Hypothetical Model Specification

The model to achieve test of hypotheses was specified below;

$$CuSt = \beta_0 + \beta_1 DisProQty + \beta_2 DisProQua + \epsilon$$

Where:

CuSt=Customer Satisfaction (Dependent variable)

DisProQty= Dispensed product quantity (Independent variable)

DisProQua= Dispensed product quality (Independent variable)

β_0 = Intersection point

ϵ = Error term

4. Results and Discussion

4.1 Responses to Questionnaire

The responses to the questionnaire administered depicts that out of a total of three hundred and eighty four copies, three hundred and twenty seven copies representing 85.16% were returned and considered suitable for the study. This posits that majority of the respondents positively responded to the questionnaire, making it suitable for the study.

4.2 Test of Hypotheses

The regression results to examine whether or not product dispense management influence customer satisfaction were presented in table 3-5.

Table 2 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.879 ^a	.772	.770	.531

a. Predictors: (Constant), DisProQua, DisProQty

Source: Field Survey, SPSS, Printout 2022

The model summary reveals that product dispense management has significant effect on customers satisfaction. The multiple correlation coefficient (R) value of 0.879 (87.9%) signifies a significant and positive relationship between product dispense management and customer satisfaction. The R-square value of 0.772 (77.2%) depicts that the independent variables of dispensed product quality (DisProQua) and dispensed product quantity (DisProQty) had a combine influence of 0.772 (77.2%) on the dependent variable of customer satisfaction (CuSt). This shows that that the cumulative effect of the independent variables is able to explain the dependent variable up to 0.772 (77.2%), while the remaining 0.228 (22.8%) was due to other factors not specified in the model.

The adjusted R² value of 0.770 (77.0%) indicates that dispensed product quality (DisProQua) and dispensed product quantity (DisProQty) actually contribute to variation in the level of customer satisfaction (CuSt). This is good enough in determining the goodness of fit for the model. Thus, the regression model proved to be very useful for making predictions.

Table 3 **Coefficients^a**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.277	.238		5.361	.000
	DisProQty	1.589	.048	.904	33.089	.003
	DisProQua	.355	.041	.238	8.706	.000

a. Dependent Variable: CuSt

Source: Field Survey, SPSS, Printout 2022

The estimated equation of the model was stated as $CuSt = \beta_0 + \beta_1 DisProQty + \beta_2 DisProQua + \epsilon$

As revealed in table 5, customer satisfaction (CuSt) equals 1.277 when all other variables were held to constant. It would increase by 1.589 and 0.355 respectively when there is a unit increase in dispensed product quality (DisProQua) and dispensed product quantity (DisProQty) respectively, while other variables remain constant.

As depicted in the table 5, the standardized beta coefficient in respect to dispensed product quantity (DisProQty) is 0.904 with t-test value of 33.089 at 5% level of significance. This establishes that dispensed product quantity (DisProQty) is relevant and significant in predicting customer satisfaction (CuSt). Hence, the first null hypothesis was rejected which called for the adoption of the alternative which established that product's quantity dispensed has significant influence on customer satisfaction in the NNPC retail outlets in South-West, Nigeria.

The standardized beta coefficient in respect to dispensed product quality (DisProQua) is 0.238 with t-test value of 8.706 at 5% level of significance. This indicates that dispensed product quality (DisProQua) is significantly relevant in predicting customer satisfaction. Thus, the second null

hypothesis was rejected which require the adoption of the alternative hypothesis to establish that **quality** of product dispensed has significant influence on customer satisfaction in the NNPC retail outlets in South-West, Nigeria.

Table 4: Summary of Findings

Hypotheses	Standardized Coefficients (β)	T	Sig. value	Remarks
H₀1: Product's quantity dispensed has no significant influence on customer satisfaction in the NNPC retail outlets in South-West, Nigeria.	0.904	33.089	.003	Rejected
H₀2: Quality of product dispensed has no significant influence on customer satisfaction in the NNPC retail outlets in South-West, Nigeria.	0.238	8.706	.000	Rejected

The summary of the analysis indicates that that among the two parameters of product dispensing management, dispensed product quantity (DisProQty) with standardized beta coefficient of 0.904 and the t-test value of 33.089 at 0.000 sig. value contributed mostly to customer satisfaction. On the other hand, dispensed product quality (DisProQua) contributed less significantly to customer satisfaction with beta coefficient of 0.238, t-test value of 8.706, and 0.000 sig value. This implies that customers of NNPC retail outlets care more about buying the right quantity of fuel at the filling stations in exchange for their money. This finding is in congruent with Omolekan (2020) who found product quality and proper dispensing of quantity products among others significantly influence end-user (consumers) experience. The findings of this study conform to the assertion of E-vahdati, et al (2020) that dispensing the right quality and quantity of product must be a necessity for retail filling stations so as ensure that customers are satisfied.

5.1 Conclusion

Based on the empirical findings, the study established that the quality and quantity of petroleum dispensed by NNPC retail business units are major predictors of customer satisfaction. Therefore, the satisfaction level experienced by customers at the retail outlets is affected by the challenges caused by poor product dispense system, which could have significant impact on the customers decisions to continue doing business with the retail outlets. Additionally, the dissatisfaction of consumers subjected to poor quality and quantity dispense system may be such that they avoid further patronage of the offending fueling station, resulting in a long-term loss of repeat business.

5.2 Recommendations

The following recommendations must be considered for the NNPC retail outlets to improve on their business performance indices, particularly in relation to customer satisfaction

The study recommends that for NNPC retail outlets to promote and improve the level of customers' satisfaction, they must largely embrace appropriate product dispense system with strong emphasis on appropriate dispensed product quantity and quality. This is expected to help management of such outlets in developing right approach to competitive challenge in the Nigeria downstream sector and developing viable capability towards better understanding of changing competitive environment.

The management of NNPC outlets must ensure that customer questions and concerns are on product quality and quantity are answered promptly and efficiently. This would enable them to gain customer trust and accurately forecast demand, thereby increasing sales volume and growth and increase in organizational profit margin.

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