# Efficiency Management and Financial Performance of Listed Consumer Goods Firms in Nigeria

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## ABSTRACT

The study investigated efficiency management on the financial performance of listed Consumer Goods Firms in Nigeria. Specifically, the study examined the effect of Inventory Turnover Ratio (INVTR), Trade Receivable Turnover Ratio (TRTR) on Return on Assets (ROA). Firm size was introduced in the model as a control variable. The design of the study was Expo-Facto. Data covering 10 years (2013 -2022) was obtained from the annual reports of five (5) companies selected from twenty-one (21) firms in the Consumer Goods sector through judgmental sampling technique. Techniques of data analysis include descriptive analysis and panel regression technique. Results revealed that the inventory turnover ratio had significant positive effect on ROA while there was no evidence of significant effect of Trade Receivable on ROA. However, firm size had significant positive effect on ROA. Based on findings, the study concluded that efficiency management improves the financial performance of listed consumer goods firms in Nigeria. Based on these findings, the study recommended the adoption of efficient inventory techniques such as demand forecasting, vendor management, planning of materials required by firms, and economic order quantity for management of inventory. The study also recommended the use of practices such as establishing payment terms, offering cash discount, providing customers with multiple payment options, adopting shorter collection period, the use of reminders before due date in management of trade receivables.

**Keywords:** Consumer Goods Firms, Firm Size, Inventory Turnover Ratio, Receivable Turnover Ratio, Return on Assets, Total Asset

## INTRODUCTION

The term efficiency management is a multi-dimensional concept that has been used interchangeably with concepts such as managerial capability, operational productivity operational efficiency, technical efficiency, among others (Adegbie, Akintoye & Chituru, 2021). However, it can be defined as the capacity of a manager to achieve organizational objectives through efficient utilization of organizational resources (Leverty & Grace 2022).

Financial performance (FP) is the measurement of a firm's general health based on profitability, assets, liabilities, equities, expenses and revenues (Ibitomi, 2022). It is the extent to which an organization achieves its objectives measured in monetary terms. Different indicators of FP include return on assets (ROA), return on equity (ROE), earning per share (EPS), among others.

Efficiency management has been acknowledged as an important determinant of performance of firms. Inun (2023) views efficiency management as an aspect of corporate strategy that helps in creating values for shareholders and enhancing the survival of an enterprise. Due to increase in uncertainty, complexity, competition and continuous technological advancement that characterized the business environment in

recent times, firms has been put under pressure to develop means of adaption, among which include efficient management of resources. As a result of increase in competition, firms are adopting cost effective measures that can be used to manage productivity and profitability (Sunday & Agubata, 2023).

Consumer goods firms (CGFs) are companies that engage in the production of final products or finished goods which are sold to customers. These firms cannot exist without inventories, which could be raw materials or work-in-progress (Asuzu & Echekoba, 2019). Inventory usually represents about forty percent of the aggregate capital investment of manufacturing firms (Moore, Lee, & Taylor, 2023). Based on this, adequate managing of inventory in CGFs is essential for enhancing growth and profitability (Anichebe & Agu, 2023). Inventory turnover (INVT) is one of the ratios used for measuring inventory management. The ratio compares the cost of goods sold to average inventory. This reveals the number of times inventory is sold or utilized during a particular period, usually a year. The greater the inventory turnover ratio, the more efficient the organization manages its inventory.

The management of trade receivables (TR) is an important element of efficiency management in a firm. This is due to its influence on the level of sales and the profits of firms. Trade receivables shows the amount customers owe the business due to credit purchase of goods or services. It can be viewed as a loan granted to customers and which they are required to pay within the period of 14 to 60 days. Trade receivables increases sales due to the fact that it increases patronage and help in attracting customers against rival firms (Pandey, 2015). However, for businesses to meet day-to-day expenses such as payment of salaries and wages, account payables, among others, firms must maintain adequate liquid resources. This necessitated efficient credit policy or adequate management of accounts receivables.

Trade receivables turnover shows the speed with which a firm converts its trade receivables to cash. It measures the degree to which a company manages the credit its extends to customers and is measured by dividing accounts net credit sales by average account receivables (Mutiso & Mwangi, 2019). The higher the trade receivables turn over, the more efficient the management is at terms of the use of its current assets in meeting day –to-day operations of the business and it pursuing business goals.

Prior studies revealed that efficiency management contribute positively to the performance of CGFs in Nigeria. Nevertheless, depreciation in exchange rate in recent times increases the cost of importation of raw materials needed by consumer goods firms. Also, high rate of inflation in the country recently reduces the purchasing power of consumers and demand for consumer goods. Therefore, this study examines efficiency management and financial performance of CGFs in the face of these economic realities. The structure of the other parts of this paper is as follows: Part two is literature review. The methodology employed is presented in part three. Part four contains results and discussion of findings while part five is the conclusion and recommendations of the study.

## Statement of the Problem

Evidence shows that consumer goods in Nigeria experience high cost of production due to high inflation rate and depreciation of Naira. For instance, Cadbury, Guinness and Nestle lost N472.3 billion due to depreciation of Naira from January to September, 2023 (Meristem, 2023). Since, most of the consumer firms depend heavily on imported raw materials, there will be rapid rise inventory cost, calling for the need for more efficient means of managing inventory so that firms can adapt to the changing economic situations.

Also, rapid rise in inflation in Nigeria over the years reduces the purchasing power of consumers. This leads to a decline in demand for consumer goods. In order to cope with this situation, consumer goods firms needs to enhance consumer demand through credit sales. However, in order to increase financial performance, adequate management of credit sales or account receivables is essential.

Previous empirical researches indicated positive significant influence of efficiency management on FP. David and Agubata (2023) and Jonah and Imo (2021) showed that efficiency management proxy by inventory turnover ratio and trade receivable turnover revealed that efficiency management in consumer goods firms influenced financial performance positively. However, these studies adopted Ordinary Least Square technique, which is considered inadequate since the data used in these studies were panel data. Udeh, Nwoha and Okwo (2022) studied the effects of turnover ratios on the value of CGFs in Nigeria for the period 2012 to 2021. The study found that turnover ratios improved EPS. Although, this study measured performance using EPS, this study intends to measure financial performance using ROA. Based on limitations in methodology employed by previous empirical studies coupled with the need to measure financial performance using a different proxy, this study examines efficiency management and financial performance of CGFs listed in Nigeria.

## Statement of Hypotheses

**Ho$_1$:** The effect of inventory turnover on Return on asset of CGFs listed in Nigeria is not significant.

**Ho$_2$:** The effect of trade receivable turnover on Return on asset of CGFs listed in Nigeria is not significant.

**Ho$_3$:** There is no significant effect of firm size on Return on Asset of CGFs listed in Nigeria.

# LITERATURE REVIEW

## Conceptual Review

### Efficiency Management

The term efficiency management has been defined in different ways by many scholars. Terms connected to efficiency management include operational efficiency, operational productivity, technical efficiency, among others (Adegbie, Akintoye & Alu, 2019). Leverty and Grace (2012), view efficiency management as the ability of the manager to efficiently organize the enterprise's resources in order to achieve the goals and objectives of an organization

Inun (2013), views efficiency management as a key component of the overall corporate strategy needed for creating values for the shareholders and ensuring the survival of an enterprise. Jamali and Asadi (2012), observed that efficiency is a key element of that has direct effect on the profits or FP of businesses. In recent times, efficiency management is important because many firms are battling to survive and have also focused on the development of efficiency at all levels of management.

### Inventory Turnover

Inventory refers to the quantity or value of raw materials, consumables, intermediate goods and manufactured goods that are kept in store for future purposes (Lysons & Farrington, 2016). The activities involved in inventory management include drawing a plan, organizing and ensuring the control of inventory from the acquisition of materials to production of goods and to distribution of manufactured goods (Smaros, Lehtonen, Appelquist & Halmstrom, 2013). Inventory management consists of three fundamental elements which include the quantity of items to be held in stock, the amount of supplies to be purchased or manufactured at a particular period and, time at which inventory ought to be bought or made.

### Account Receivable Turnover (ART)

Warren, Reeve and Duchan (2015) describe accounts receivable turnover as the relationship between net

sales and receivables. It is computed by dividing net sales by average receivables. The value of ART, either high or low reveals the ability of the manager in managing accounts receivables and vice versa. Mutiso and Mwangi (2019) declare that accounts receivables represent the credit extended to customers. This kind of credit represents cost in business. This is based on the fact that when the firm keeps money tied up in receivables, the value of the money will decline. Moreover, there is the possibility of the firm running the risk of default by the customers. On the other hand, account receivable can be advantageous to the firm when through attraction and retention of customers. This helps in improving and maintain sales and subsequently profitability.

**Firm Size**

One of the key variables that contribute to the achievement of effectiveness in business organizations is firm size. Large scale production helps in lowering cost of production, thereby increasing profits. This is based on the fact that as an enterprise increases in size, its average cost declines. This is described as economics of scale in Economics (Sindhuja, 2017). Economies of scale may occur due to different reasons which include financial economies that arises from lower interest rate large firms are being charged by financial institutions or discount enjoyed from bulk purchase of raw materials and increased in productivity arising from specializing and practising of division of labour by big firms (Pervan & Višić, 2021).

**Total Asset**

One of the most popular measures used in measuring firm size is total asset. Assets are resources possessed by the firm that have financial value. Assets can generally grouped into two classes namely current assets and fixed assets. Current assets are resources that are capable of transformed to cash in less than a year without or with little less in value. They include. Fixed assets on the other hand are resources that last longer than one year. They include (Kennon, 2017).

**Financial Performance**

Financial performance (FP) covers elements such as how efficient and effective a firm is, its level of competitiveness, how well its operations, policies and structure are functioning, among others. The term has been defined in different ways. Generally, financial performance is the extent of achievement of financial goals by a firm. It involves evaluating the outcomes of the policies and operations of an organization in monetary value. FP shows the general financial health of a company during a particular period and is also useful for comparing a company to other companies in the same industry (Odo & Isamade, 2021). A stable financial performance is desirable because it enable firms to have adequate fund needed for delivery quality service, optimizing service delivery, meeting short –term obligations, achieving credit worthiness, among others. Due to its importance, FP has drawn the attention of many stakeholders (Verboncu & Zalman, 2005). Popular measures used for measuring FP include Gross Margin, Operating Margin, ROA, ROE and ROCE. However, this study measures FP through ROA. The reason behind this is because ROA is more embracing than other proxies of FP.

**Return on Assets**

ROA relates the profits of a firm to its total asset. It helps the management, investors or analysts to determine the degree to which a firm achieves efficiency in the use of assets for generating returns (Ibiamke & Ateboh-Briggs, 2014). Isenmila and Adeyemo (2013) state that ROA as an indicator shows the earnings generated from assets. The ROA of public enterprises differs greatly and largely depends on the industry. This accounts for the reason behind the usual comparison of ROA of a firm to its earlier ROAs and the comparison of a firm ROA to that of the other firms in the same industry. To Barako (2017), ROA helps investors to measure the effectiveness of a firm in translating funds invested into net income. A high value

of ROA shows that the firm is able to generate more returns from fewer assets.

## Theoretical Review

### Agency Theory

Jensen & Meckling in 1976 propounded Agency theory. The issue of agency arises due to the separation between ownership (shareholders) and management (managers) and the possibility of the interest of the owners to be different from the managers (agents) (Musah, Padi, Okyere, Adenutsi, & Ayariga, 2022). Based on contract, the agent is expected to pursue the principal's interest but also has interest that may be different from that of the principal. This necessitates the need for the use of incentives and monitoring of agents efforts in ensuring that the agent's interest aligns with that of the principal (Naseem, Lim & Ali, 2023). The relevance of the theory to the present study is that consumer goods firms make decisions on management of inventory and receivables. These decisions have repercussions for the financial performance of the organizations. Agency theory shows that adequate monitoring and incentives are paramount in ensuring that managers efficiently manage the firms' inventory and receivables in order to improve financial performance.

### Empirical Review

David and Agubata (2023) investigated management efficiency and performance of consumer goods firms listed in Nigeria. Performance was measured using Earnings Per Share (EPS). The study utilized Expo-facto research design. Data was obtained from the annual reports of sixteen (16) firms selected from twenty –one (21) consumer firms listed in Nigeria. The data collected covered seven years (2015-2021). Multiple regression models were formulated and estimated using OLS. Results showed that ART, INVT, non-current assets turnover and affected EPS positively and significantly. However, the current study intends to measure performance using ROA and cover different period (2013 -2022), which is considered more recent.

Jonah, *et. al*. (2022) studied trade receivable and financial performance of listed consumer goods companies in Nigeria. Specifically, the study examined the effects of Account Collection Period (ACP) and Account Receivable Turnover on Return on Asset. Ex-post facto research design was utilized in the study. Data from 2012 -2021 was obtained from ten companies. The methods of data analysis include descriptive analysis and regression analysis. ACP was found to have significant negative effect on FP while the effect of ART on Return on Assets was positive and significant. The current study is different as it does not only involve the examination of the effect of ART on FP but also determines the influence of INVT on FP.

Udeh *et al.* (2022) examined the effects of turnover ratios on the value of consumer goods firms listed in Nigeria from 2012 to 2021. In specific terms, the study examined the effects of INVT, asset turnover, ART and account payable turnover on EPS. Data was collected from yearly reports of the selected firms. Panel Regression technique was adopted in the study. Results revealed that turnover ratios all have significant positive effects on EPS. Although, this study measured performance using EPS, this study intends to measure financial performance using ROA.

Ugwuta (2021) studied firm size and firm profitability of consumer firms listed on the Nigeria Exchange Group. Profitability was measured using ROE while firm size was proxy by total asset, total number of employees and total sales. The sample of the study consisted of eight firms. Data was covering the period 2008 to 2018 was extracted from the yearly reports of the companies. Both descriptive statistics and panel regression were used in analyzing data. It was indicated that total number of employees and total assets had significant positive impacts on ROE while production cost has significant negative impact on ROE.

Garba, Mourad and Chamo (2020) studied inventory turnover management and profitability of conglomerate businesses listed in Nigeria. The study had a population of six (6) conglomerate firms listed

on Nigerian Exchange Group during the period from 2007 to 2016. Since the population is small, all the six firms were included in the sample. Data spanning from 2007 -2016 was obtained from the yearly published reports of the organizations. Generalized least square technique was used in analyzing data. It was revealed that INVT had a negative and significant effect on the profitability of conglomerate firms listed in Nigeria during the period. Instead of covering conglomerate firms, the current study focuses on consumer goods firms listed in Nigeria.

Nasution (2020) determined INVT and profitability of motorized firms listed in Indonesia. The period covered in the study was 2015-2017. The objectives of the study included examining the effect of INVT return on assets. Data used was obtained the yearly reports of eighteen (18) firms selected from the population. Simple linear regression was used in analyzing data. It was shown in the study that there was no significant relationship between INVT and return on asset. The weakness of this study is assumes that profitability is determined by only INVT. That is, the study failed to include other determinants of profitability in the model used. In addition the period covered (2015 -2017) cover is not long enough.

Azad, Raza and Zaidi (2018) examined operational efficiency and profitability of oil and gas companies in Pakistan. The period covered in the study was 2010 to 2016. In specific terms, the study determined the effects of total asset turnover (TAT), fixed assets turnover (FAT) and debtor's turnover (DT) on ROE. Data was obtained from the yearly reports of seven companies and analyzed through descriptive and OLS regression analysis. Findings revealed that TAT and DT had negative effects on ROE while the effect of FAT was positive and significant. However, the period covered in this study (2010 -2016) is six years. This is not long enough for assessing long-run relationship among variables. Moreover, the study employed ordinary least square instead of panel regression analysis.

Warrad and Omari (2017) examined the impact of turnover ratios the performance of service firms in Jordanian. The specifically, the study examined the effects of TAT, FAT and working capital turnover on ROA and ROE. Data covering the period 2009 -2012 was obtained from eight (8) firms. Liner regression analysis and Analysis of Variance (ANOVA) were utilized. Findings revealed that turnover ratios have no significant effect on the performance of service firms in Jordanian. The weakness of this study is that the period covered is four years (2009 -2012) is not up the standard (10 years) usually used in panel regression analysis.

# METHODOLOGY

## Research Design

The design used in this study was Expo-facto research design. Expo-facto research design according to Kothari (2014) is a design that occurs after the event has occurred and without the interference of the researcher. The design was utilized because of the availability of past data collected annually on efficiency management variables (inventory turnover ratio and receivable turnover ratio) and dependent variable (ROA). This design permitted the estimation of the effect of efficiency management on performance of CGFs without manipulating the variables.

## Population of the Study

The population of the study comprises twenty-one (21) CGFs listed on the Nigeria's Exchange Group (NXG) as at 31$^{st}$ December, 2022.

## Sample and Sampling Technique

Since the population is large, data was collected from five (5) companies selected from the population. Purposive sampling technique was used to select the sampling units. The criteria used for selection of the

sampling units was that the companies must be listed on the NXG throughout the period 2013 -2022 and must have well prepared annul reports.

## Method of Data Collection

The source of data utilized in this study was secondary data. The data was collected from the published yearly reports of the firms. The data is panel data collected across five companies over ten years (2013 – 2022). The sample units include Dangote Sugar, Flour Mills Plc, Vitafoam Plc, Nascon Nigeria Plc and Unilever, Plc.

## Model Specification

The modified version of Sunday and Agubata (2023) model was adapted in this study. They specified performance as a function of management efficiency. Performance was measured by Earnings per share while management efficiency was proxy by four variables namely ACT, INVT, noncurrent asset turnover (NCATO) and operating expenses (OP).

$$EPS = F (ACT, INVT, NCATO, OPE) \qquad (1)$$

This current study expresses FP as a linear function of efficiency management. FP is proxy by ROA while efficiency management is proxy by inventory turnover ratio and trade receivable turnover. Firm size proxy by total asset was included in the model so as to reduce the error arising from the omission of independent variables. The functional model is specified as :

$$ROA = f ( INVT, TRT, TA) \qquad (2)$$

Where:

ROA = Return on Asset

INVT = Inventory Turnover

TRTR = Trade Receivable Turnover

TA = Total Asset

The linear form of the model is stated as follows:

$$ROA_{It} = \beta o + \beta 1\ INVT_{It} + \beta 2\ TRT_{It} + \beta 3\ TA_{It} + \mu \ \ldots\ldots\ldots\ldots\ldots (3)$$

$\beta o$ = Constant Term

$\beta 1, \beta 2$ and $\beta 3$ = Parameter that measure the effects of INVT, TRT and TA on ROA.

$\mu$ = Error Term

## Method of Data Analysis

Both descriptive and inferential analyses were used in analysing data. The descriptive analysis included the mean, maximum and minimum values, standard deviation, coefficient of skewness and kurtosis. The mean shows the average value of the variables over time. The standard deviation measures the degree of spread or vitality of the variables. Minimum and maximum value shows the range of the variable. Jarque-Bera

measures the normality of the data. Skewness measures asymmetry of the distributions while kurtosis determines the peak of the distributions.

The inferential analysis is divided into three namely correlational analysis, regression analysis and diagnostic tests. The parameters of the model were estimated through Generalized Least Square (GLS) regression technique. There are two techniques used in GLS namely fixed effect model and Random Effect. The choice of the better model was determined through Hausman test.

Diagnostic tests carried on the residuals after estimation of regression parameters included Normality test which assessed whether or not the residuals obtained from the model estimated followed a normal distribution, heteroskedascity and serial correlation tests which determined the absence of heteroskedacity and serial correlation in the model and Ramsey Reset Model specification test was used to determine whether or not the model formulated has been correctly specified.

**Table 1: Operationalization of Variables**

| Variable | Proxy | Measurement | Source |
|---|---|---|---|
| Financial performance (Dependent Variable) | Return on Asset (ROA) | *Net income/Total assets* | Odo and Isamade (2021) |
| Efficiency Management | Inventory management and Trade receivable management | Inventory turnover ratio and Trade receivable turnover ratio | Sunday and Agbuta (2023) |
| Inventory management | Inventory turnover | *Cost of sales/Average Inventory* | Sunday and Agbuta (2023) |
| Trade receivable management | Trade receivable turnover | *Credit Sales/Average Trade Receivables* | Sunday and Agbuta (2023) |
| Firm Size | Total Assets | Total value of asset in naira | |

**Source: Researcher's computation, 2024**

# RESULTS AND DISCUSSION

**Table 2: Descriptive Analysis**

| | ROA | INVT | TRT | TA |
|---|---|---|---|---|
| Mean | 9.178600 | 4.461201 | 9.656896 | 1.32E+08 |
| Maximum | 25.32000 | 7.704885 | 65.76899 | 4.91E+08 |
| Minimum | 0.640000 | 2.524324 | 1.797017 | 9376225. |
| Std. Dev. | 6.368836 | 1.295729 | 11.79230 | 1.32E+08 |
| Skewness | 0.834043 | 0.459671 | 3.260600 | 1.118109 |
| Kurtosis | 2.900583 | 2.601459 | 14.15426 | 3.317103 |
| Jarque-Bera | 5.817490 | 2.091720 | 347.7992 | 10.62755 |
| Probability | 0.044544 | 0.031389 | 0.000000 | 0.004923 |

**Source:** Eviews 10

The average value of ROA of the five CGFs during the period of the study was (9.18%). The variable exhibits low variability shown by the standard deviation (6.37%) and the maximum and minimum values (25.3% and 0.64%) respectively.

Inventory turnover ratio averaged 4.46. The standard deviation (1.30) is low in relation to its mean value indicating that the variable exhibits low variability across the companies during the period of study. This is also supported by the maximum and minimum values 7.70 and 2.52.

Also, the mean value of receivables turnover of the listed CGFs was 9.66. The spread in the variable is high indicated by the standard deviation 11.79 and the maximum and minimum values 65.77 and 1.79 respectively.

The mean of total asset of the firms during the study is N1.32 billion. The variable shows low dispersion revealed by the standard deviation N1.32 billion. The low variability in the data is also shown by the maximum and minimum values (8.9 billion naira and N4.9 billion naira respectively).

All the variables have positive skewness shown by the coefficient of skewness (0.834043, 0.459671, 3.260600 and 1.118109) respectively. The positive values indicated that majority of the values of the variables are concentrated on the left of their mean scores.

Return on asset and inventory turnover ratio have a flat top (Platykurtic) distribution indicated by the coefficient of kurtosis (2.90058 and 2.6015) which are less than 3.0 while trade receivable turnover ratio and total asset have tall distribution (Leptokurtic), indicated by their coefficient of Kurtosis (14.15426 and 3.317103) which are greater than 3.00.

## Correlation Analysis

**Table 3: Correlation Analysis**

| Probability | ROA | INVT | TRT | LTA |
|---|---|---|---|---|
| ROA | 1.000000 | | | |
| | —— | | | |
| INVT | 0.587640 | 1.000000 | | |
| | 0.0019 | —— | | |
| TRT | -0.145709 | -0.029754 | 1.000000 | |
| | 0.4327 | 0.8375 | —— | |
| LTA | 0.546470 | 0.307431 | 0.248008 | 1.000000 |
| | 0.0064 | 0.0299 | 0.0825 | —— |

**Source: Eviews 10**

Table 5 presents the Pearson correlation coefficients result of the variables. But our emphasis was on the correlation between the dependent variables (ROA) and independent variables (INVT, TRT and TA).

The coefficient (r =0.587640) shows that the association between inventory turnover and ROA is positive and moderate. The probability (p=0.0019 < 0.05) indicates that the relationship is significant at 5%.

The coefficient (-0.145709) indicates that the relationship between receivables turnover and ROA is

negative. However, the association is not significant at 5% shown by probability (0.4327) > 0.05.

Also, the correlation coefficient (0.5464) indicates the presence of a positive moderate association between total asset and ROA. The probability (0.0064) < 0.05, showing that the relationship is significant at 5%.

**Table 4: Multicollinearity Test** Table 4 shows the variance inflation of the independent variables and mean VIF**.** The mean VIF was used to measure the extent to which multicollinearity results in the inflation of the variance of the regression model.

| Variables | VIF | 1/VIF |
|---|---|---|
| INVT | 1.07 | 0.934594 |
| TRT | 1.05 | 0.952380 |
| TA | 1.03 | 0.970874 |
| **Mean VIF** | **1.05** | |

**Source: Output generated using EVIEVS 10**

The VIF of the variables were within the acceptable range of higher than 1 but less than 10. This indicates the absence of muticollinearity among the independent variables. This was further supported by the overall mean VIF 1.05

**Table 5: Hausman Test**

Hausman Test was used in choosing between Fixed Effect panel regression model and Random Effect panel regression model. The results of the test conducted are presented in Table 5.

| Test Summary | Chi-Sq. Statistic | Chi-Sq. d.f. | Prob. |
|---|---|---|---|
| Cross-section random | 1.468587 | 3 | 0.6895 |

The Chi-Sq statistic (1.468587) is not significant as 5% shown by probability (0.6895) > 0.05. Consequently, the hypothesis which states that Random effect model is the suitable model is rejected.

**Regression Analysis**

**Table 6: Fixed Effect Panel Regression Output**

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | -7.869862 | 32.18981 | -0.244483 | 0.8080 |
| INVTR | 1.551182 | 0.746064 | 2.079156 | 0.0437 |
| TRTR | -0.098250 | 0.063076 | -1.557652 | 0.1268 |
| LTA | 2.612337 | 0.712220 | 2.357628 | 0.0224 |
| R-squared | 0.510512 | | | |
| Adjusted R-squared | 0.428930 | | | |
| F-statistic | 6.257697 | Durbin-Watson stat | | 2.172782 |
| Prob(F-statistic) | 0.000047 | | | |

The R-squared as shown in Table 6 is (0.511). This indicates that 51.1% of variation in ROA is explained inventory turnover ratio, receivable accounting receivable turnover ratio and total asset while the remaining 48.9% is change in financial performance attributed to other factors affecting ROA that were omitted in the model. Judging from the R-Squared, the estimated model has overall goodness of fit.

Furthermore, the F-stat (6.257697) and p-value (0.0000 < 0.05) reveal that the estimated model is significant at 5%. This shows that the overall effect of inventory turnover ratio, trade receivable turnover ratio and total asset is significant, indicating that the model has overall goodness of fit. The Durbin-Watson statistics of (2.1727) is approximately (2.00) signifying that absence of serial correlation in the model.

**Test of Hypothesis**

**Hypothesis one:** Inventory turnover has no significant effect on ROA of CGFs listed in Nigeria.

The coefficient (1.5511) shows that the effect of INVT on ROA is positive. An increase in inventory turnover ratio by 1% ceteris paribus leads to an increase in ROA by 1.55%. The estimate is significant at 5% revealed by the absolute t-statistic (2.079) which is greater than critical value (1.96) and probability (0.0437) < 0.05. This results in the rejection of the hypothesis that inventory turnover has no significant effect on return on asset of consumer firms listed in Nigeria.

**Hypothesis two:** Trade receivable turnover has no significant effect ROA of CGFs listed in Nigeria.

The estimated coefficient (-0.098250) shows that trade receivables affects ROA negatively. However, judging from the value of absolute t-statistic (1.5576) and probability (0.1268) which is greater than 0.05, the estimate is not significant at 5%. Consequently, we do not reject hypothesis two.

**Hypothesis three:** Total asset has no significant effect on ROA of CGFs listed in Nigeria.

Total asset has positive effect on ROA. This is shown by the coefficient (2.6123). The t-statistic (2.3576) is greater than critical value (1.96). Also the probability (0.0224) is less than 0.05. These indicate that the estimated coefficient is significant at 5%. An increase in total asset by 1%, all other factors remaining the same, results in an increase in ROA by 2.6123%. Based on the t-statistic and probability value, hypothesis three was rejected.

**Table 7: Diagnostic Estimates**

| Tests | Stat. | Prob. | Decision |
|---|---|---|---|
| Normality | 1.9885 | 0.5134 | Residuals are normal (Normally distributed) |
| Heteroscedasticity | 1.5021 | 0.3865 | No case of Heteroskedasticity |
| Ramsey Reset | 1.7589 | 0.40331 | Model is well specified |

**Source: Authors' Computation from Eviews 10**

The residuals obtained from the model follow normal distribution shown by probability (0.5134) is greater than 0.05, Moreover, the model has no heteroskedacity shown by probability (0.3865 > 0.05). Also, the model used was well-specified indicated by probability (0.40331 > 0.05).

## DISCUSSIONS

This study revealed that inventory turnover has significant effect on ROA of consumer firms listed in Nigeria. This implies that efficient management of inventory improves the financial performance of CGFs listed in Nigeria. This is in line with Agency Theory and also supported by the study of David and Agubata (2023) which showed that management efficiency had significant positive effect on performance of CGFs listed in Nigeria.

However, it was also shown in this study that the effect of trade receivable turnover on ROA of CGFs listed in Nigeria was not significant. This indicates that management of trade receivables does not result in improvement in financial performance. This contradicts Agency theory and the studies of David and Agubata (2023) and Udeh *et al* (2022) which found that trade receivable turnover affected financial performance of CGFs listed in Nigeria positively.

It was also shown that total asset has no significant effect on Return on Asset of consumer firms listed in Nigeria. This shows that firm size enhances performance of CGFs. This finding is supported by the study of Ugwuta (2021) which showed that firm size influenced the performance of CGFs listed in Nigeria.

## CONCLUSION AND RECOMMENDATIONS

This study examined the effects of efficiency management on the financial performance of consumer firms listed in Nigeria. Efficiency management was proxy by inventory turnover and trade receivable turnover. Firm size was included as one of the independent variables so as to reduce the error term which is associated with the exclusion of variables from a model.

Results indicated a positive significant effect of inventory turnover on financial performance. However, there was no evidence of significant relationship between trade receivable turnover and financial performance. Moreover, firm size affects improves the financial performance of consumer goods firms listed in Nigeria.

The implication of this study is that the effective management of inventory is paramount to improving the financial performance of Consumer Goods firms in Nigeria. However, more studies are needed to identify factors that contribute to the insignificant influence of trade receivables on financial performance.

The following recommendations are made for the study:

1. Consumer goods companies listed in Nigeria should ensure that optimum inventory is held. They should avoid holding of excess inventory or holding inventory less than the required. This will necessitate the adoption of inventory management techniques such as demand forecasting, just –in-time management, material requirement planning, vendor management, economic order quantity, among others.
2. Consumer goods firms should improve their trade receivable turnover by adopting trade receivable management practices such as establishing payment terms, offering cash discount, providing customers with multiple payment options, adopting shorter collection period, the use of reminders before due date, among others.
3. Consumer goods companies listed in Nigeria should adopt growth strategy. This can be achieved through increasing total assets of the companies.

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