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Inventory Effectiveness and Nigeria Manufacturing Companies: Analysis with Return on Equity

Adebite Tajudeen Adejare*

Department of Accounting, Al-Hikmah University, Ilorin, Kwara State, Nigeria

Ajagbe Surajdeen Tunde

Department of Banking and Finance, Al-Hikmah University, Ilorin, Kwara State, Nigeria

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Abstract

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This study examined the impact of inventory management on the profitability of selected manufacturing companies in Nigeria. Specifically, the study determined the effect of inventory management on return on equity. The data were sourced from annual published reports of ten selected companies. The data sourced were inventory, asset, revenue, equity, turnover, and profit after tax. The data collected were analyzed with panel data using random effect, fixed effect, regression, and correlation. The result showed that return on equity has a good correlation with inventory. Also, it was discovered from the analysis that according to the Fixed effect result, inventory positively affects return on equity. Still, the asset has a negative effect on Profitability. Turnover and equity have a significant positive effect on return on equity. Conclusively, inventory positively impacts return on equity in Nigerian manufacturing companies. It recommended that Nigerian manufacturing companies should not trivialize inventories but put more effort into the management of inventory so that the profitability of the company will be efficiently enhanced and increased at an increasing rate so that investors' investment will be multiplied because rational investors discard unproductive company to accept the profitable companies.

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*Corresponding Author:

Adebite Tajudeen Adejare

Email: adetajud@yahoo.com

Tel: +2348035793148

ORCID:

1. Introduction

Inventory management cannot be underestimated because opening and closing inventory is vital to an effective and efficient organization. It is considered a vital activity in organizational logistics that leads to a firm's growth and survival. Inventory management is principally and specifically concerned with placement and the size of stocked goods and raw materials. Inventory management is required at any location in an organization to safeguard production against running out of inputs, materials and goods (Cannon, 2018). Effective and efficient inventory management determines profit maximization, which depends on cost minimization and revenue maximization. According to Stephenson and Vraceva (2015), profit maximization is an efficient concept that dispenses profit enhancement without increasing the resources employed in an organization. Inventories kept adequately in manufacturing companies smooth the production process in any manufacturing company. Proactive organization management provides good customer service and achieves a noble and public image by stocking sufficient inventories. Inventory levels are seen as one of the vital and motivating areas for organization materials management improvement and attainment of equilibrium between high return on investment and low inventory (Yankah et al., 2022)

The process and the inventory management procedure are difficult matters and delicate tasks in every organization. Inventories are pertinent to prosperous manufacturing organizations. It consists of work-in-progress, raw materials, and finished goods. Inventory represents a vital capital component, and business prospect and failure depends on the inventory management performance since inventory management eradicates liquidity problems, upsurges the company's profitability and invariably determines the financial positions of organizations (Gebisa and Ram, 2021). It represents one of the key elements and the largest value in current assets of the financial position. However, any defect in evaluating and determining its stock cost invariably negatively affects production, thereby downplaying the company's profitability (Yankah et al., 2022).

Since inventory is the major segment of the company's investment, effective inventory management ensures organizational profitability. According to Athumani and James (2019), inventory management goes a long way in determining and facilitating manufacturing companies' success and failure. Ineffective and inefficient inventory management leads to stock out in the organization, which invariably gives birth to goodwill and customer loss, which downplay the profit and ultimately cause the organization to collapse. Organizational failures and inefficiency have been ascribed to the inability to effectively control, plan properly and strategize on the inventory conversion period and the inventory levels. This has bred divergent dispositions among the researchers that inventory, a single component in current assets, cannot determine the profitability of the manufacturing companies (Nwakaego et al., 2014; Ahmad, 2018; Lwiki et al., 2013; Musau et al., 2017). But Ikechukwu and Nwakoby (2020), Lwiki et al. (2013), Orga and Mbah (2017), and Salahudeen and Abraham (2018) advocated that inventory, a single component of the current assets, determines the faith of the organization. In line with the divergent dispositions of the extant researchers, this study intends to effectively determine the potency of the inventory in determining the profit and the performance of the manufacturing companies in Nigeria. Therefore, the disposition of this study is to determine the impact of inventory on manufacturing companies' profitability in Nigeria.

2. Literature Review

2.1 Profitability

Profitability refers to the income the companies realize from effectively and efficiently utilizing all the resources within their custody. The resources are split into human and material

resources. Human resources is the labour employed, saddled with the responsibilities of planning, managing, controlling, and utilizing all the material resources for attaining organizational goals. But material resources are the inputs and equipment bought or acquired for input conversion into a finished product. Profitability can be determined through returns on the investment invested by the equity holders in the company. All rational equity holders expect their investment to be multiplied at the end of the accounting or financial year. This can either come as a dividend or a share bonus. Hence, it is measured through return on equity (ROE). ROE of any company decides its capability to utilize effectively and efficiently the equity engaged in an organization to generate good returns (Olatunji and Adegbite, (2014) and Akanbi and Adegbite, (2016). ROE ratio measures the percentage of profits declared by the organization and the equity employed; it is one ratio that measures company efficiency in making profits on equity. A higher ratio specifies the company's capacity to maximize shareholders' wealth effectively.

2.2 Inventory

Inventories are vital to the progress and effective operation of manufacturing companies. This consists of raw materials, work-in-progress, and finished goods. Inventory can be effectively managed through Inventory systems, Inventory control and Inventory management. Inventory systems refer to the policies that monitor and control inventory levels and determine the inventory level to be compulsorily maintained, stock to be replenished and ordered, and ordering time. Inventory control also refers to storage supervision, supply supervision and item accessibility to ensure adequate supply without undue oversupply. Inventory management comprises organizing, controlling and planning the inflow and outflow of materials from the initial procurement unit to internal operations or usage to finished products and distribution (Ali and Ali, 2012). Manufacturing companies don't need to possess all classes of inventory. Still, the most important is that efficient management is absolutely needed, whatever the classes of the inventory items. Since inventory represents a vital major fragment investment, it is fundamental that good and effective inventory management dispenses manufacturing companies' growth and profitability. Inventory management determines organizational success and failure. Ineffective inventory management, according to Chebet and Kitheka (2019) and Ikehukwu and Nwakoby (2020), ignites stock out, loss of goodwill and customers, which invariably affect profit inversely and results in the ultimate breakdown of the company. With their submission, inventories are considered a vital and significant component of current assets, which are indispensable for manufacturing companies.

H₁: Inventory has an indispensable significance on the profitability of manufacturing companies

2.3 Noncurrent asset

Noncurrent asset refers to company property with an organization's future or current economic value. Basically, noncurrent assets include all properties owned and controlled by the manufacturing companies that are currently and monetarily valuable, which dispense future benefits to the organization. Noncurrent assets include but are not limited to investments, patents, and machinery (Akinlabi, 2021). According to Adegbite (2019), an asset refers to a resource embedded with monetary and economic value owned by an individual, country or corporation with the absolute expectation that it will bring in future benefit to the organization, which is reported in the statement of financial position of the organization. Noncurrent assets are classified into intangible and tangible. It is bought or produced to enhance the firm's benefit or value to the organization's operations which invariably generate future cash flow, improve sales, and reduce expenses.

H₂: Noncurrent has an indispensable significant effect on the profitability of manufacturing companies

2.4 Turnover

Turnover refers to the organization's sales in monetary terms within a year, month, day, and week. This displays the organization's effectiveness and efficiency in gauging how quickly it realizes cash inflow from accounts receivable and disposal of its inventory and finished goods. It is also referred to as the company revenue globally because the products made by the organization are expected to sell out to their customers for revenue realization. This means that the company exchange its products for revenue realization from its customers. Turnover ratios display how rapidly an organization turns its accounts receivable investments and inventory into cash. It is expected that when manufacturing companies produce their finished products at an increasing rate, turnover is expected to upsurge the profit of the company.

H₃: Turnover possesses a significant influence on the profitability of manufacturing companies

2.5 Equity

Equity Shares refer to ordinary shares of the manufacturing company. The owner of the equity is known as the real owner of the manufacturing company. This type of finance contributed extensively to the company by issuing shares to the public. The equity owners in any manufacturing company have control and involvement in the company management. Equity shareholders possess voting rights and are eligible for the company's dividend after all the other stakeholders have been settled. It is known that the equity shareholder collects dividends corresponding to the shareholding number and the company's profit at the end of the accounting and reporting period, usually a year. According to [Agu \(2016\)](#), [Akinlabi \(2021\)](#), and [Ikechukwu and Nwakoby \(2020\)](#), equity, when effectively managed, increases the profitability of the company, which shows that the higher the equity management, the higher the increment in organization profit which invariably increases the returns on their investment. It is hypothesized that:

H₄: Equity possesses a significant influence on the profitability of manufacturing companies

2.6 Theoretical review

This study is affixed with the Economic Order Quantity (EOQ) inventory management model, which opined that the organization employs inventory control to minimize costs between holding stock and ordering stock. According to [Ikechukwu and Nwakoby \(2020\)](#), the EOQ model entails that ordering quantity must be determined where stock ordering costs (SOC) and stock holding costs (SHC) are equal. [Saleemi \(1993\)](#) propounded this theory with the view that optimal inventory size is where SOC and SHC are equal. This model supports an organization's management in using an effective and productive stock management system to ensure that the production stock need is fulfilled and effective sales forecasts are employed for effective ordering purposes. Several assumptions have been put into consideration by the EOQ model. One of the assumptions is that stored product usage is presumed to be stable while ordering costs are presumed to be constant. This model is relevant to this study because the inventory availability for production invariably dispenses organizational outputs, which determines profitability. This means that the more effectively the use of inventory, the more profit is realized by the company, which invariably serves as the determinant for the company's performance. EOQ considers various costs merely and easily extended to fixed assets. The only constraint of EOQ is that its assumption is major on a

single product in which the demands of the single product are equally spread throughout the year.

2.7 Empirical review of related studies

[Agu \(2016\)](#) established an inventory control effect on selected manufacturing firms' productivity in Nigeria. Primary data was collected through interviews and questionnaires from two hundred and eighty-five respondents who served as population sampled respondents out of 996. Pearson product moment correlation coefficient and simple linear regression were employed to test the study's hypotheses. The findings indicated that inventory control positively, significantly and statistically improved manufacturing companies' productivity. According to the study, inventory management is indispensable to the organization's operation. However, the study employed a questionnaire to examine the inventory control effect on productivity, which is different from the current study that sourced data from annual reports of selected Nigerian manufacturing companies. Another study by [Orga and Mbah \(2017\)](#) determined an effective inventory management system effect on departmental store performance in South East Nigeria. The data were collected through questionnaires from the staff of twenty-seven (27) departmental stores (Management, Stores, and Finance) in South East Nigeria. Simple linear regression was engaged for hypothesis testing. The study concluded that inventory management impacted department store growth positively and significantly in South East Nigeria. Nevertheless, the study made use of questionnaire which absolutely against this methodology of this study.

[Ahmad \(2018\)](#) empirically examined the effect of inventory management on micro enterprises' performance in Malaysia. The study employed a hundred (100) questionnaires administered to Malaysian owners/managers in micro-enterprises. The findings from regression analysis showed that inventory management impacted the firm's performance positively and significantly. However, the study was conducted in Malaysia, and policy implications were restricted to Malaysia, which is inappropriate for Nigeria. [Salahudeen and Abraham \(2018\)](#) analyzed the effect of inventory management on manufacturing firms' operational performance. The study was restricted to May and Baker manufacturing company, where 60 staff were randomly sampled through the questionnaire. The result from the chi-square analysis displayed that a significant relationship existed between organizational performance and inventory management. However, the study examined inventory management's effect on manufacturing firms' operational performance, which was restricted to a single company- May and Baker manufacturing company- but not panel data of more than one organization as against this study. Similarly, [Athumani and James \(2019\)](#) determined the impact of inventory management on Tanzania's organizational performance. Data were ultimately collected through questionnaires from 40 respondents. The findings from the descriptive analysis revealed that inventory management through technology had a significant positive impact on Tanzania's organizational performance.

[Elsheikh and Hassanin \(2019\)](#) employed secondary data garnered through fifty (50) Egyptian listed companies to determine the impact of inventory management on Egyptian firms' financial performance from 2012 to 2019. The data collected were from the top 50 non-financial companies in the Egyptian Stock Exchange. The results from the panel data analysis revealed that inventory had an insignificant effect on firms' financial performance. This study is limited to the performance of Egyptian listed companies but was not in line with the current study done by Nigerian manufacturing companies.

[Muchaendepi et al. \(2019\)](#) assessed the impact of inventory management strategies on the Harare manufacturing sector in Zimbabwe. The study encompassed the population of Gleview complex, Kuwadzana, Magaba, Gazaland and Siya-So Mbare industrial sites. Respondents were justifiably selected from each company, which was selected purposely. The outcome of qualitative

research design and descriptive analysis showed that inventory management strategies significantly impacted the Harare manufacturing sector in Zimbabwe. The study was conducted in Zimbabwe's Harare manufacturing sector but not Nigeria. Geographically, the outcome is not compatible with Nigeria.

[Olaniyan et al. \(2020\)](#) focused on the inventory management system (IMS) effect on organization performance in Osogbo, where supermarkets and stores were randomly selected for the study. The study's outcome, gathered from the questionnaire analyzed through cross-sectional descriptive research design, showed that efficient IMS practices positively impacted organizational growth, sales turnover, and profitability of firms in Osogbo, Osun States. However, the study only covered one single state out of 36 states in Nigeria and also focused on the profitability of supermarkets but not manufacturing companies. In line with [Olaniyan et al. \(2020\)](#), the questionnaire was also employed by [Ikechukwu and Nwakoby \(2020\)](#) to gauge the inventory management impact on Nigeria firm performance using ten (10) sampled organizations with seven hundred and ten (710) populations. The OLS regression and Pearson Correlation findings showed that inventory management positively influenced Nigeria firm performance. Nonetheless, the study employed questionnaire as against the current study.

[Ernest et al. \(2020\)](#) examined the effect of inventory management on Accra's manufacturing firm performance. The study employed a cross-sectional survey to collect data for hypotheses testing from 165 Accra-based manufacturing companies, which were analyzed with Factor Analysis and Pearson's correlation. Results discovered that inventory management positively affected marketing and operational performance. It was also discovered in the study that capital size and firm size had a positive influence on inventory management in Accra-based manufacturing companies. The study, however, was done in Accra. The methodology engaged was not in tandem with the methodology of this study.

[Ezeocha and Daniel \(2020\)](#) examined the impact of inventory management practices (IMP) on small-scale enterprises' (SSEs') performance in Abuja, Nigeria. Data were collected and analyzed using descriptive and content analysis, respectively. Qualitative results revealed that IMP had a significant impact on SSEs' performance. The study was purely qualitative, unlike the current study, which is quantitative. [Gebisa and Ram \(2021\)](#) empirically investigated information sharing and the IMP effect on Ethiopian firms' performance. Data collected from one hundred and seventy (170) respondents, including the company's employees, distributors, and suppliers, were analyzed with structural equation modelling (SEM) to realize the motive of the study. Results showed that IMP and information sharing had a direct significant and statistical effect on firm's performance. The study finally concluded that information sharing directly and indirectly impacted firm's performance significantly but IMP only significantly impacted firm's performance directly. The study was done in Ethiopia not in Nigeria, and the scope was limited to IMP and firms' performance in Ethiopia.

[Akinlabi \(2021\)](#) examined the IMP effect on the operational performance of selected Nigerian flour mills. The study targeted a population of 2,237 staff aggregately in all flour mills selected, in which 776 were randomly selected to attain the motive of the study. A structured questionnaire was used, validated, and analyzed with Cronbach's alpha, PPMC, and regression analysis. Findings discovered that Inventory record accuracy, automated inventory system, and Inventory turnover, except for Inventory shrinkage, were found to have a positive, significant and statistical influence on operational performance. The study invariably concluded that IMP significantly influenced Nigeria's flour mills' operational performance. However, the study examined Nigeria's flour mills' operational performance, but its scope was not elongated to the current year.

[Mbugi and Lutego \(2022\)](#) investigated the effect of inventory control management (ICM)

systems on Tanzania organization performance concerning Mwanza City food and beverage companies. The study adopted a qualitative approach using content analysis methods for data collection through annual published industry reports and documentary reviews to attain accomplished objectives. The findings publicized that food and beverage companies had numerous inventories of raw materials, finished goods and work-in-progress for production efficiency and cost reduction management under the FIFO system. The study concluded that the ICM system positively influenced and significantly impacted Tanzania's organizational performance. The study focused on Tanzania's organizational performance, not Nigeria's manufacturing companies.

Yankah et al. (2022) investigated how manufacturing enterprises' performance was affected by inventory management in Kumasi Metropolis of Ghana. Descriptive, which is embedded with research demography, was involved in the investigation. Target demography was comprised of all staff in all essential departments with a total population and sampled size of 62 and fifty-four, respectively. The instrument for data collection and sample size formula employed were questionnaires and Yamane sample size, respectively. It was discovered that manufacturing enterprises' performance significantly and positively influenced manufacturing companies in Kumasi Metropolis, Ghana. The study further advocated that stock management is a crucial factor for the success of Kumasi Metropolis manufacturing companies. However, the study was invented in Ghana with a questionnaire for data sources, which quietly deviated from the current study.

The existing studies such as Agu (2016), Ahmad (2018), Elsheikh and Hassanin (2019), Ezeocha and Daniel (2020), Olaniyan et al. (2020); Akinlabi (2021); Gebisa and Ram (2021) and Yankah et al., (2022) restricted their studies to the questionnaire as the only ways of collecting data for analysis. However, Mbugi and Lutego (2022) were done and limited to Tanzania and the year 2019, which is different from this study. This study created a gap with the extension of scope to the year 2022 in Nigeria manufacturing companies and the involvement of panel data analysis such as random, fixed effect, and hausman test to examine the effect of inventory management on profitability in Nigeria manufacturing companies.

3. Research Methodology

This study adopted an ex-post facto method of research design to investigate the effect of inventory management on return on Equity (ROE) in Nigerian manufacturing companies. Companies selected randomly are ten (10) from listed consumer goods manufacturing companies. The data collected were from the annual financial reports of selected companies from 2011 to 2021. Panel data, which is cross sectional and time series data, were employed to analyze the data source because of the nature of the study. The models are:

3.1 Model specification

Inventory was considered an independent variable to examine the effect of inventory on ROE, while ROE is the dependent variable. Noncurrent Assets, Equity, and Turnover are the control variables.

The econometric model is stated as

$$ROE = f(INV)$$

$$ROE = f(INV, ASSET, EQUITY, TURNOV)$$

$$ROE = a_0 + B_1INV + B_2ASSET + B_3EQUITY + B_4TURNOV + U_2$$

3.1.1 Fixed Effect Model

$$Y_{it} = \beta_0 + \beta X_{it} + u_{it}$$

$$ROE_{it} = \beta_0 + \beta_1 INV_{it} + \beta_2 ASSET_{it} + \beta_3 EQUITY_{it} + \beta_4 TURNOV_{it} + \gamma_2 E_2 + \dots + \gamma_n E_n + u_{it}$$

$$ROE_{it} = \beta_0 + \beta_1 INV_{it} + \beta_2 ASSET_{it} + \beta_3 EQUITY_{it} + \beta_4 TURNOV_{it} + \gamma_2 E_2 + \dots + \gamma_n E_n + \delta_2 T_2 + \dots + \delta_t T_{t-1} + u_{it}$$

3.1.2 Random Effect Model

$$Y_{it} = \beta_0 + \beta X_{it} + u_{it} + \varepsilon_{it}$$

$$ROE_{it} = \beta_0 + \beta_1 INV_{it} + \beta_2 ASSET_{it} + \beta_3 EQUITY_{it} + \beta_4 TURNOV_{it} + \gamma_2 E_2 + \dots + \gamma_n E_n + u_{it} + \varepsilon_{it}$$

Where:

ROE= Profitability

INV= Inventory

ASSET= Noncurrent Assets

EQUITY= Equity

TURNOV= Turnover

4. Results and Discussion

Table 1. The Correlation Matrix

	ROE	INV	ASSET	EQUITY	TURNOV
ROE	1.000				
INV	0.358*	1.000			
ASSET	0.1192	0.656*	1.000		
EQUITY	0.342*	0.303*	0.208*	1.000	
TURNOV	0.441*	0.373*	0.255*	0.183	1.000

Source: Researcher's Computation (2022)

A correlation matrix was tested to examine the multicollinearity among the variables. It was discovered that ROE has a good correlation with INV, with a value of 0.3581. This shows that there is an absence of multicollinearity between ROE and INV. It was also discovered from Table 1 that ASSET also possessed a cordial relationship with ROE on the value of 0.1192. However, EQUITY has a positive relationship with ROE but lacks multicollinearity. Also, TURNOV, with a correlation matrix value of 0.4412, possessed a positive relationship with ROE. Because the value (0.4412) is less than 0.7, this shows no element of multicollinearity among ROE and all variables involved. Therefore, the outcome of the correlation matrix calls for a VIF test.

Table 2. Variance Inflation Factor

Variable	VIF	1/VIF
TURNOV	11.220	0.089
INV	5.590	0.178
ASSET	4.520	0.221
EQUITY	1.200	0.830
Mean VIF	5.630	

Source: Researcher's Computation (2022)

VIF was tested in order to check the presence of multicollinearity. All the variables employed in this study have no element of multicollinearity because the values in Table 2 are less than 10, except for TURNOV, which is 11.22. This shows that TURNOV possessed multicollinearity. This called for Robust Regression in order to eradicate the multicollinearity in TURNOV.

Table 3. Effects of inventory management on return on equity using different models

ROE	(1) Regression	(2) Robust Regression	(5) Fixed-effects (within) regression	(6) Random-effects GLS regression
INV	2.33e-10* (0.066)	2.33e-10 (0.034)	4.42e-11 (0.028)	5.67e-11 (0.021)
ASSET	-1.41e-10*** (0.000)	-1.41e-10*** (0.000)	-7.85e-11*** (0.000)	-8.24e-11*** (0.000)
EQUITY	8.08e-10*** (0.000)	8.08e-10*** (0.000)	2.71e-10** (0.036)	3.14e-10** (0.014)
TURNOV	1.84e-10*** (0.000)	1.84e-10*** (0.000)	9.89e-11*** (0.000)	1.06e-10*** (0.000)
CONS	4.155*** (0.003)	4.155*** (0.009)	2.733* (0.077)	2.761 (0.301)
<i>N</i>	99	99	99	99
<i>R</i> ²	0.603	0.603	0.404	
adj. <i>R</i> ²	0.586	0.586	0.321	

p-values in parentheses
p* < 0.10, *p* < 0.05, ****p* < 0.01. Source: Researcher's Computation (2022)

Table 4. Hausman Test

ROE	(b) Fixed Effect	(B) Random Effect	(b-B) Difference	Sqrt (diag(V _b -V _B)) S.E
INV	4.42e-11	5.67e-11	-1.25e-11	2.72e-11
ASSET	-7.85e-11	-8.24e-11	3.94e-12	8.52e-12
EQUITY	2.71e-10	3.14e-10	4.36e-11	-
TURNOV	9.89e-11	1.06e-10	-6.64e-12	4.56e-12

$$\begin{aligned} \text{chi2}(4) &= (\text{b-B})'[(\text{V}_b - \text{V}_B)^{-1}](\text{b-B}) \\ &= 53.080 \\ \text{Prob} > \text{chi2} &= 0.000 \end{aligned}$$

Source: Researcher's Computation (2022)

In Table 3, different analytical tools were used to determine the effect of inventory management on ROE. The first column is the pooled regression outcomes of the analytical model. This model was rejected because of the discovery of multicollinearity in TURNOV, which called for Linear Regression (Robust), and this negated Pool Regression. According to Robust Regression, INV has a significant positive effect on ROE. Also, the asset has a significant negative effect on ROE, which invariably displays that the higher the ASSEST, the lesser the ROE. This result is per Agu (2016), and Akinlabi (2021), but ASSET and TURNOV positively impact ROE because of a probability value of 0.0000, which is less than 0.05 significant level.

The fixed effect regression model was also tested, and the Random effect model was also involved. Hausman test was done to pick the appropriate model between fixed and random effect models. According to the Hausman test in Table 4, the fixed effect was considered appropriate because Prob>chi2 = 0.0000, which is the yardstick to reject the null hypothesis, that the fixed effect is inappropriate. According to the Fixed effect, a percentage increase in INV increases ROE

by 4.4 percent but is significant. ASSET significantly negatively impacts ROE at 0.05 and 0.1 levels of significance; a percent increase in ASSET reduces ROE by 7.8 percent. On the contrary, EQUITY possesses a positive effect, which is significant on ROE. Also, TURNOV has a positive and significant effect on ROE; a percentage upsurge in TURNOV increases ROE positively and significantly in Nigerian manufacturing companies. Finally, a percent increment in TURNOV also positively increases ROE by 9.8 percent with a significant level of 0.001.

5. Discussion of Findings

This study examined the effect of inventory management on the profitability of manufacturing companies using ROE as a proxy of profitability in Nigeria. Secondary data were sourced through annual publication reports of financial statements of the selected manufacturing companies in Nigeria from 2011 to 2021. The data collected were analyzed through panel data analysis embedded with a fixed effect model, random effect model, and Hausman test. It also discovered from the analysis that, According to the Fixed effect, a percentage increase in INV increases ROE by 4.42 percent but is insignificant. That is, INV has a positive but significant effect on ROE. This result supports the view of [Ahmad \(2018\)](#), [Elsheikh and Hassanin \(2019\)](#), and [Ernest et al. \(2020\)](#) but disapproves of the view of [Chebet and Kitheka \(2019\)](#), [Agu \(2016\)](#) and [Turginbayeva et al. \(2022\)](#). It was also realized that EQUITY has a significant positive effect on ROE, which invariably displays that the higher the equity, the higher the ROE. This result aligns with [Agu \(2016\)](#) and [Akinlabi \(2021\)](#). On the other hand, ASSET has a significant negative impact on ROE; this indicates that the additional procurement of noncurrent assets reduces the profitability of the companies. This result supports the view of [Chebet and Kitheka \(2019\)](#), [Mbugi and Lutege \(2022\)](#), [Muchaendepi et al. \(2019\)](#), and [Olaniyan et al. \(2020\)](#) but declines the view of [Nwakaego et al. \(2014\)](#); [Olatunji and Adegbite, \(2014\)](#) and [Salahudeen and Abraham, \(2018\)](#). In addition, TURNOV has a positive and significant effect on ROE; a one percent increase in TURNOV increases INV by 9.8 percent. This shows that the sales revenue also impacted ROE positively and significantly in Nigerian manufacturing companies. This study is in line with the advocacy of [Gebisa and Ram \(2021\)](#), [Muchaendepi et al. \(2019\)](#), [Musau et al. \(2017\)](#), [Turginbayeva et al. \(2022\)](#), [Yankah et al. \(2022\)](#) and [Gołaś, \(2020\)](#), with the submission that for any organization to be profitable the turnover must be increasing at an increasing rate but disapproved the view of [Athumani and James, \(2019\)](#).

6. Conclusion

This study statistically evaluated the impact of inventory management on the profitability of selected manufacturing companies in Nigeria. Specifically, the study determined the impact of inventory management on return on equity. The data were sourced from annual published reports of ten selected companies. The data sourced were inventory, asset, revenue, equity, and profit after tax. The data collected were analyzed with panel data using random effect, fixed effect, regression, and correlation. The result showed that return on equity has a good correlation with inventory. Also, it was discovered from the analysis that, according to fixed effect, inventory has a positive effect on return on equity, but Asset has a negative effect on profitability. Turnover and equity have a significant positive effect on return on equity. Conclusively, inventory has a significant positive impact on profitability in Nigerian manufacturing companies. Inventory is considered the rock layer and pertinent structure for the survival and profitability of Nigerian manufacturing companies. Effective and efficient inventory management emits effectiveness in organizational control and survival. It recommended that Nigerian manufacturing companies should not trivialize inventories but put more effort into managing inventory so that the company's profitability will be efficiently

enhanced and increased at an increasing rate so that investors' investment will be multiplied because rational investors discard unproductive companies to accept the profitable companies.

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