

LEAN ACCOUNTING ADOPTION AND FINANCIAL PERFORMANCE OF LIMITED CONSUMER MANUFACTURING COMPANIES IN NIGERIA

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ABSTRACT

Companies that apply lean accounting are expected to reduce lead time; decrease stocks; have fewer faults; have better usage of the resources; improve product delivery rate; increase productivity and reduce unit cost. Due to the present economic tendencies of rising offers against inquiry, to withstand competition in the market, manufacturing companies are focusing their attention on production processes, lower making time, synchronizing the productive processes, reducing the stocks, and manipulating the working materials. This study, therefore, examined the lean accounting adoption and financial performance of quoted manufacturing companies in Nigeria. The study adapted Ex-post facto research design and primary data was collected from (40) accounting, marketing, operation, and warehouse managers of each of the sampled quoted manufacturing companies while secondary data were extracted from the 2018-2022 four years financial report of the sampled companies. The data were presented with descriptive while the inferential statistic involves the use of Ordinary least square Regression (Panel data analysis.) was used to determine the relationship between the variables and as well used to test the null hypotheses. The SPSS, statistical software specifically E-view was used to aid the analysis. The findings revealed that there is a strong and positive relationship between lean accounting adoption and financial performance. Based on the findings, the study concludes that there is a significant relationship between lean accounting adoption and the financial performance of limited consumer manufacturing companies in Nigeria. The study recommends that the limited consumer manufacturing companies that seek to improve financial performance should consider the adoption of lean accounting practices.

Keywords: Lean Accounting, Financial performance, Return on Investment, Return on Assets, and Inventory Turnover

INTRODUCTION

Manufacturing companies are focusing their attention on production processes, lower making time, synchronizing the productive processes, reducing the stocks, and manipulating the working materials to withstand competition in the market, attributable to the present economic tendencies of rising offers against inquiry. Conventionally, in a factory, effort is usually on self-determining production processes, especially to raise the working productivity on each level (Cuatrecasas, 2010). This change of perspective has determined the seeking of new alternatives in Manufacturing and Management that answer the client's needs and enforce the factory's competitiveness. Lately, the model which was universally accepted by the scientific community

as an appropriate Management Model, to raise the factories' competitiveness is called Lean (Lean Production, Lean Manufacturing, and Lean Thinking). The lean orientation concentrates on the effectiveness of the process from the plant and is a substantial management idea. Major companies in different industrial fields have used (Briciu & Comp, 2010).

Adoption of lean accounting increases a company's inventory turnover, return on investment, return on assets, flexibility, cost-decrease profit growth, money flow, and share value (Maskell & Kennedy, 2007).

According to Kalagnanam and Lindsay (1998), lean orientation improves product quality, adaptability, commercial potential, and ability to deal with market globalization.

Adopting lean thinking is advantageous in terms of productivity, product quality, speed of execution and delivery, adaptability to market demands, and reduced resource consumption, which leads to decreased costs.

The factories that have implemented the lean mindset are searching for new accounting techniques that can accommodate the adjustments brought on by lean thinking.

The purpose of this effort was to better comprehend this new cost method known as lean accounting. There are less approaches to this novel notion in Nigeria, despite the fact that the worldwide specialized literature gives it more attention (Briciu, 2012).

REVIEW OF LITERATURE

Theoretical Framework

The theories of constraints and transaction costs serve as the foundation for this study. The use of these in this analysis was justified by the desire to establish a correlation between lean accounting and financial accounting. According to the theory of transaction costs, businesses strive to lower their expenses as well as the administrative costs associated with trading resources. Business organizations weigh operating costs against the administrative costs of carrying out tasks internally (Alan, 2010). The theory of constraints also emphasizes an environment chock-full of pointless data. It provides advice to experts on how to improve their businesses by focusing on minor issues that impede ongoing profitability (Martins et al., 2010).

The Theory of Constraints was introduced by Goldratt and Cox in their publication titled "The Goal" from 1992 with the goal of assisting businesses in consistently achieving their organizational goals. Any feasible or practicable structure, according to the theory, is constrained in achieving the majority of its goals by a number of issues. This theory is an administrative or organizational criterion or model. According to their theory, there is always some issue or element working against a company's goals, and the Theory of Constraints devised an intriguing method for locating the issue and restructuring the other functional areas of the organization around it. According to the Theory of Constraints, a chain is only as strong as its weakest link, which means that processes, operations, businesses, etc. are in risk because of a weak and delicate person or segment that might consistently injure or destroy them injuriously.

The foundation of the theory of constraints is the idea that three different indices—throughput, operational expense, and inventory—can be used to assess and manage a company. This study is therefore supported by the idea of constraints since it is pertinent to assessing how lean accounting affects the financial performance of manufacturing companies because it aids in identifying the constraint (inventory) and subsequently reorganizing the organization around the constraint.

This paper is built on the assumption conceptualized below.

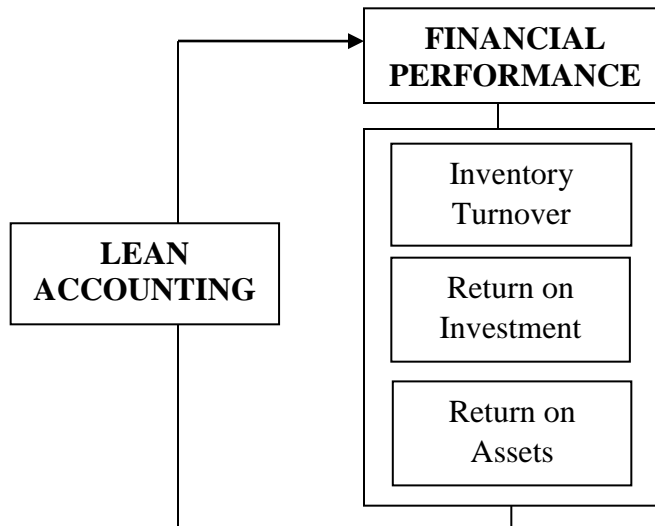


Figure1. Conceptual Framework of lean accounting and financial performance

Source: Measures of financial accounting were adapted from Damanpour, et al. (2009).

The customer-driven value is the cornerstone to lean, as previously said; with lean, the entire value chain revolves around producing customer value. In a lean system, client orders start the production process. As a result, purchase orders and inventory management respond to these orders and plan work orders accordingly. The aforementioned methodology shows how lean accounting can improve the financial performance of limited consumer manufacturing companies as measured by inventory turnover, return on assets, and return on investment.

Concept of Lean Accounting

Lean manufacturing, which has its roots in the automobile industry but is now used in many other industries and even outside of production environments with outstanding results, was designed to assist lean accounting (Lawal&Abdullahi, 2020). The quest for accounting procedures, ideas, and instruments that will bridge the gap between conventional accounting practices and lean thinking is necessary since the lean manufacturing approach includes techniques that are incompatible with traditional cost and management accounting systems. Lean accounting was first developed to assist lean manufacturing businesses, but it is now quickly

spreading to the financial services, healthcare, government, and education sectors (Khalil & Mohammad, 2018). Lean accounting delivers income statements without the false information about standard costs and the murky variance figures that are preferred by conventional accounting techniques. It is action-oriented because of this. Affected parties' inquiries—does it change? What does this indicate? What must we carry out?

Lean accounting was created in response to the issues with standard costing accounting's ability to provide accounting data for decision-making. In order to help businesses separate their value-added and non-value-added activities, lean accounting was developed (Haskin, 2010). This allows businesses to produce various cost reports for distinct value streams. Lean thinking is becoming more popular recently among manufacturing companies for a variety of reasons, including improved value creation for their clients and cost reduction, profit maximization, productivity enhancement, and flexibility improvement (Yavuz, 2017).

The term "lean" refers to a set of practices that affect the elimination of processes that do not add value to the final product and facilitate the accomplishment of outcomes that allow businesses to both satisfy consumer wants and increase profits. According to Niewiadomski et al. (2018), lean is a concept of action that reduces the costs of enterprises by minimizing the involvement of the means of production in the production process and by adjusting current company behavior to the changing demands of the environment. Wastes are concealed in the costing system by standards and poor reporting. Furthermore, overhead allocations, volume-driven pricing, and cost drivers all distort product costs. Because the real cost must be tracked using a computer at each stage of manufacturing, standard costing is connected with expensive and wasteful data collection. This necessitates the implementation of a value stream as a method for gauging performance throughout the whole production cycle (DeLuzio, 2006).

In lean manufacturing businesses, the value stream is a series of processes that runs from receiving an order through producing and delivering goods and services to customers (Meral, 2015). According to Fullerton et al. (2013), the value stream includes all the steps that are taken to transform raw materials into finished goods before they are delivered to customers. According to Kennedy and Brewer (2005), the value stream is made up of all the activities that corporate organizations must carry out in order to plan, procure, manufacture, and deliver the goods or services to the client. According to Baggaley and Maskell (2004), value stream costing gives clear, timely, and accessible information on the costs and profitability of the pertinent area of the business. Value streams are used by all corporate organizations that apply lean thinking to their production processes in order to enhance customer satisfaction (Davies & Greenough, 2015).

At Toyota plants in the 1950s, the lean production model was created with the primary goals of reducing costs and eliminating wasteful activity in the production process. Over-production, spent time waiting for something, wasteful manufacture, wasteful stocks, wasteful movements, defaults, corrections, and mending or reprocessing delivery are some of the losses connected to the activity (Womack et al., 1990). Corporate firms that have adopted the lean mindset must also

search for new accounting techniques that will take modifications defined by lean thinking into consideration (Dimi&Topor, 2014). Lean philosophy is a type of management that emphasizes maximizing flexibility while minimizing waste within a company (Briciu et al., 2010).

In general, the development of accounting science as a result of the industrial revolution has made it easier for us to find accurate information to support our decisions in the field of management accounting (Khalil & Mohammad, 2018). Lean manufacturing practices are supposed to minimize lead times, lower inventories, reduce flaws, improve resource utilization, improve product delivery rates, boost productivity, and lower unit costs (Basem& Raid, 2006). All of these will be connected, either directly or indirectly, to the revenue that corporate organizations will produce. Due to their unrestricted access to essential information, customers are more powerful than ever, which forces businesses to customize their production processes to their needs in order to maximize profit (Dimi&Topor, 2014).

Lean accounting is described as "a modern administrative accounting system, with the aim of increasing profits, searching for perfection, the elimination of waste and loss, and delivering the products to customers without delay" by Khalil and Mohammad (2018). By transforming raw materials into final goods using a lean production method, all waste and loss are removed, lowering production costs and increasing profit (Khalil & Mohammad, 2018). Lean accounting implementation gives management of an organization the chance to lower production-related costs, which will enhance the performance of the company (Aziz et al., 2017). Corporate businesses that plan their production strategy to improve quality and performance with lower costs and greater customer satisfaction provide better results (Meral, 2015).

Financial Performance

Successful businesses are essential to a country's economic development because they have an impact on our everyday activities and lifestyles. Many researchers, according to Gavrea et al. (2011), view businesses and institutions as the heart of a country's economic, social, and political development. As a result, attainment of organizational performance is a crucial indicator of how a corporation behaves. The goal of a firm is continuous performance because, via it, growth and survival can be sustained for an extremely long time (Gavrea et al., 2011). Lebas and Euske (2005), on the other hand, view performance as a financial and non-financial use indicator for learning about the accomplishment of objectives in a business. Even if businesses are still in it to make money, they nonetheless conduct a number of tasks that are impacted by non-financial activities. Indicators that are financial and non-financial can therefore be used to measure success (Wruck& Jensen, 1998). Performance is a crucial tool for evaluating businesses, what they do, and how their immediate circumstances affect them, as was previously said. Despite the fact that many academics and researchers have written about the concept of performance in the academic literature, there hasn't been a consensus definition that is widely accepted (Gavrea et al., 2011).

According to Damanpour et al. (2009), a company's performance may be broken down into three main categories: (a) financial performance (profits, return on assets, inventory turnover, return

on investment, etc.); and (b) operational performance. (b) Product-market performance (total sales/turnover, market share, etc.); (c) Return on shareholders' money (total return on shareholders' funds, value-added, etc.). The indicators of financial performance used in this study, however, are inventory turnover, return on investment, and return on assets.

Inventory Turnover

Inventory turnover is one of the factors used by managers and industry analysts to evaluate the performance of a manufacturing organization. This is described as the proportion of average inventory to the value of sold products. Explanatory research on the inventory turnover performance of publicly listed manufacturing companies in America was carried out by Gaur et al. in 2005. They discovered that inventory turnover fluctuates over time both within and between enterprises. They also demonstrated that three performance variables derived from publicly available financial data, including gross margin (the ratio of gross profit net of markdowns to net sales), capital intensity (the ratio of average fixed assets to average total assets), and sales surprise (the ratio of actual sales to expected sales for the year), can explain a significant portion of the variation in inventory turnover. They suggest a metric for comparing the inventory productivity of manufacturing organizations using the estimation results.

Return on Investment

Return on Investment (ROI) was found to be the most widely used measurement index in business analysis, as noted by Botchkarev and Andru (2011). Previously, it was believed that ROI was a word used in finance to analyze financial expenses and returns critically and figuratively (Botchkarev&Andru, 2011). Return on Investment (ROI) is now, however, universally used in finance by both the public and commercial sectors. They also stated that return on investment is used to rate various investment opportunities by measuring and figuring out how effective each one is. Simply dividing the benefit (i.e. return) by the investment's cost output yields return on investment, which is always expressed as a ratio or percentage.

Return on Assets

A key indicator of profitability is a return on assets. This ratio is frequently emphasized when analyzing financial accounts since it can show how successfully a business generates money. Return on Assets is a metric that may be used to estimate a company's future profitability by measuring its past profitability. The disputed assets are the general corporate properties, acquired either from the capital itself or from outside money that has been transformed into corporate assets for long-term business viability. According to Brigham and Houston (2001), the return on assets is determined by dividing the total assets by the possible net profit for common shareholders. for common shareholders, the available net profit Because a higher return on investment rate translates into better corporate performance, return on assets (ROA) is equal to total assets. According to Wild et al. (2005), "This value represents the company's return on all assets (or funding) provided to the company." Any elements that impact return on assets include

(a). A company's ability to pay its short-term obligations is gauged by its liquidity ratio, which is determined by comparing its current assets and liabilities (b). Asset Management Ratio: according to Brigham and Houston (2001), the asset management ratio "measures how effectively the company manages its assets." (c). The asset management ratio known as the debt management ratio is used to determine how well a firm can satisfy its long-

term debt obligations, which are utilized to finance all business activities. **Lean Accounting and Financial Performance**

Lawal and Abdullahi (2020) examined the effects of lean accounting on the financial performance of private hospitals in Kaduna State. The study's data were gathered using questionnaires with a five-point Likert scale, which were distributed to the management of private hospitals. Of the forty questionnaires distributed, 38 were filled out and returned. Lean accounting significantly and favorably affects the financial performance of private hospitals in Kaduna State, according to an examination of the study's data using regression techniques.

Almuawi, et al. (2019) investigate how lean accounting information affects the financial performance of the healthcare industry. The impact of value stream costing implementation on the financial performance of the healthcare industry was examined using a quantitative case study technique. According to the study's findings, managers can discern between value-added and non-value-added operations by applying value stream costing. Healthcare administrators can therefore use lean accounting data to ascertain the true costs of their services and therefore enhance the financial performance of their organizations.

Abdalla and Job (2018) conducted a descriptive study using cross-sectional data with a target population of 40 private hospitals in Mombasa County. A census survey was conducted on all the private hospitals in Mombasa County. A questionnaire was used to collect primary data. Out of the 40 research instruments distributed, 37 questions were used to collect data. SPSS, which generates both descriptive and inferential statistics, was used for data analysis. The results showed a significant and favorable association between financial performance and every lean management approach.

René, et al. (2018) review the body of knowledge about the link between lean production and business performance. The study examines information from 30 articles that were published between 2000 and 2016. In order to assess the study's data, Pearson's correlation coefficients were used. The study's findings indicate a moderately good association between overall business performance and aggregate levels of lean production. Only three specific practices—process control and improvement, workforce development, and customer focus—are statistically associated with corporate performance. Additionally, it is discovered that the degree of economic development of the nation has a moderating role in a number of the examined relationships and has a stronger impact in Emerging Economies than in Advanced Economies.

Samad et al. (2017) conducted research to look at the function of lean accounting in the production of value. The study used a qualitative methodology to investigate the accounting practices used by Swedish industrial enterprises' account preparers. The study's conclusions showed that financial statement preparers adopt new accounting techniques because conventional ones don't work with lean accounting.

Al-Rahimi (2016) looks into how lean accounting techniques affect production cost reduction in Jordanian industry firms. The financial statements of Jordanian manufacturers were used to gather the study's data. The study used a descriptive-analytical approach to clarify how the variables under investigation related to one another. The study's conclusions showed that lean accounting is essential for lowering production costs in Jordanian manufacturing businesses.

Based on the evaluated empirical literature, this study proposed;

Ho1: Lean accounting does not significantly relate to inventory turnover of limited consumer manufacturing companies in Nigeria.

Ho2: Lean accounting does not significantly relate to the return on investment of limited consumer manufacturing companies in Nigeria.

Ho3: Lean accounting does not significantly relate to the return on assets of limited consumer manufacturing companies in Nigeria.

METHODOLOGY

Ex-post facto research design is used in the study to collect, analyze, and interpret data related to the study's goals. Ex-post facto research was chosen because this study uses data that has already been collected and documented to analyze potential links by examining current circumstances and looking back in time for likely contributory causes. The focus is on analyzing an issue or circumstance that has already happened in order to understand the relationship between the various elements involved. 23 limited consumer manufacturing companies in Nigeria make up the study's population, according to data on the consumer goods sector collected from the Nigeria Stock Exchange's website as of 2022. The financial reports of five (5) specifically chosen consumer goods sectors of the Nigerian limited consumer manufacturing businesses for the four-year period from 2018 to 2022 were the source of the data used in this study. These companies included Cadbury Nig. Plc, Nestle Nig. Plc, Unilever Nig. Plc, and P.Z. Cussons Nig. Plc., and Champion Nig. Plc. Based on the purposive sample method, those companies were picked. The use of those businesses was justified by the ease of data accessible. In light of this, the study specifically selected two (2) management individuals from the accounting, manufacturing, marketing, and warehousing divisions, based on the assumption that each would provide the necessary information for the study. A total of one hundred and twelve forty (40) respondents took part in the current study. The participants were drawn from the quoted manufacturing companies to act as the sample units (the respondents). Data on their financial performance over the course of four years (2018–2022) was gathered from the Nigeria Stock

Exchange to determine its correlation with the implementation of lean accounting methods. Using panel data analysis, descriptive statistics and inferential statistics like ordinary least square regression were used to examine the acquired data. These statistical approaches were chosen because other financial performance researchers had already used them.

RESULTS

Data Presentation

Table 4.1: Descriptive Analysis of All Variables

	N	Range	Minimum	Maximum	Sum	Mean	Std. Deviation	Variance	Skewness	Kurtosis		
LA	30	15.110	-10.660	4.450	92.720	3.59862	.272258	2.073452	4.299	-3.824	21.429	.618
IT	30	48.36	-36	48.00	64.20	3.1069	.82545	6.28645	39.520	7.539	.31457	185.618
ROI	30	47.34	-33	47.00	66.30	3.1066	.83343	6.23645	33.888	7.756	.31445	567.618
ROA	30	48.36	-37	48.00	64.20	3.1068	.83433	6.23893	39.458	7.634	.31458	435.618
Valid	N30											
(listwise)												

Source: (E-view Output, 2023)

Note:

LA = Lean Accounting

IT = Inventory Turnover

ROI = Return on Investment

ROA = Return on Assets

The information in Table 1 explains the (descriptive statistics) on the explanatory variables: lean Accounting (LA). The table also shows the (descriptive statistics) on the criterion variables: Inventory Turnover (IT), Return on Investment (ROI), and Return on Assets (ROA).

Specifically, Table 1 showed that LA has a mean of (3.59862) and a standard deviation of (.272258). IT has a mean of (3.1069) and a standard deviation of (.82545). ROI has a mean of (3.1066) and a standard deviation of (.83343). ROA has a mean of (3.1068) and a standard

deviation of (.83433). Finally, the skewness result showed that data obtained for all the variables including predictor and criterion are not abnormal, that is, they are normally distributed. Hence, the study is considered valid. Therefore, the result from the normality test signifies the normality of the data and further substantiates the validity of the regression results.

Autocorrelation Test

The results of regression for the three independent variables ($k = 3$) with the sum of data ($n = 30$) and $\alpha = 0.05$ are shown in the following table.

Table 2: Autocorrelation Test Model

Summary^b

Model	R	R-Square	Adjusted R-Square	Std. Error of Estimate	Durbin-Watson
1	.217 ^a	.047	-0.006	6.30420	2.124

^a Predictors: (Constant), LA

^b Criterion Variables: IT, ROI, ROA

Source: Results of the research that has been processed

Note:

LA = Lean Accounting

IT = Inventory Turnover

ROI = Return on Investment

ROA = Return on Assets

From the table above it appears that the value of Durbin-Watson is 2,124. To determine whether or not there is autocorrelation, the Durbin-Watson test is used and Ghazali determines the value of Durbin-Watson (DW) of 2.124 which will be compared with the value of DW-table for $\alpha = 5\%$, $n = 24$ and $k = 3$. From the table obtained the value of $du = 1.69$ and $dl = 1.48$. Since the value of DW-counted = 2.124 is greater than the upper limit (du) = 1.69 and less than $4 - 1.69$ ($1.69 < 2.124 < 4 - 1.69$), it can be concluded that autocorrelation does not occur.

Hypotheses Testing and Interpretation

Decision Rule: Accept the Alternate hypothesis and reject the Null Hypothesis if the P-value result is lower than the benchmark value of 5% specified in Eviews for this analysis, but if otherwise reject the Alternate Hypothesis and accept the alternate Hypothesis, while the decision rule for Durbin Watson is to accept the Alternate hypothesis if the value obtained does not

exceed 2, but if otherwise, then, the alternate hypothesis will be rejected while the Null hypothesis will be accepted, meaning that there is no serial correlation between the variables, but for R square the decision rule is to assume a strong relationship exists between the dependent and independent variable if the result of the R square is above 50%, but weak if the value obtained is less than 50%.

The Panel Ordinary least square analysis statistical tool used in the study was based on Fixed Effect because the Test of the Variable using the Redundant Fixed effect tool shows that there is a significant positive relationship between the criterion variable and the explanatory or predictor variable. Also for the Analysis of the Hypotheses to be rational and logical, the qualitative data (i.e. Lean Accounting) were converted to their logarithm values, before comparing them with the quantitative data (i.e. IT, ROI, and ROA) obtained from annual financial statement.

Hypothesis 1, 2 & 3

Ho1: Lean accounting does not significantly relate to inventory turnover of limited consumer manufacturing companies in Nigeria.

Ho2: Lean accounting does not significantly relate to the return on investment of limited consumer manufacturing companies in Nigeria.

Ho3: Lean accounting does not significantly relate to the return on assets of limited consumer manufacturing companies in Nigeria.

Table 3: Fixed Effect Testing of Panel Data for Hypothesis 1, 2 & 3

Redundant Fixed Effects Tests

Equation: Untitled

Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	0.000000	(4,19)	1.0000
Cross-section Chi-square	0.000000	4	1.0000

Cross-section fixed effects test equation:

Criterion Variables: Inventory
Turnover, Return on Investment and
Return on Assets

Method: Panel Least Squares

Date: 03/04/2023 Time: 21:22

Sample: 2018-2023

Periods included: 5

Cross-sections included: 5

Total panel (balanced) observations: 30

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.277839	0.158486	-1.753079	0.0929
Lean Accounting	0.216097	0.005560	38.86351	0.0000
R-squared	0.985000	Mean criterion var		5.600000
Adjusted R-squared	0.984348	S.D. criterion var		1.892969
S.E. of regression	0.236824	Akaike info criterion		0.033618
Sum squared resid	1.289967	Schwarz criterion		0.131128
Log likelihood	1.579777	Hannan-Quinn criter.		0.060663
F-statistic	1510.373	Durbin-Watson stat		3.230773
Prob(F-statistic)	0.000000			

The result of the Redundant Fixed effect test shows that the predictor variable, that is, the lean accounting has a significant impact on the criterion variables inventory turnover, return on investment, and return on assets, this is because the R square value 99% which indicate that the predictor variable accounts for only 99% of the criterion variables, while only 1% is accounted for by other variables outside the scope of this study. This was also supported by the chi-square value calculated and F- statistic (i.e.1.0000 and 1.0000) since they were both greater than the chi-square value and F- statistic tabulated (i.e. 9.448 and 2.90 respectively). Therefore since this satisfies the assumption that there is a significant impact and relationship between the predictor and the criterion variables, the hypotheses can be tested using Ordinary least square Regression Fixed effect panel Data. This was also established by the f value of (0.00000).

Table 4: Testing of Hypothesis 1, 2 & 3 Using Ordinary Least Square Regression (Panel Data)

Criterion Variables: Inventory

Turnover, Return on Investment
and Return Assets

Method: Panel Least Squares

Date: 03/04/2023 Time: 21:22

Sample: 2018-2022

Periods included: 5

Cross-sections included: 5

Total panel (balanced) observations: 30

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.277839	0.174373	-1.593362	0.1276
L A	0.216097	0.006118	35.32279	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.985000	Mean criterion var	5.600000
Adjusted R-squared	0.981053	S.D. criterion var	1.892969
S.E. of regression	0.260563	Akaike info criterion	0.353618
Sum squared resid	1.289967	Schwarz criterion	0.646148
Log likelihood	1.579777	Hannan-Quinn criter.	0.434753
F-statistic	249.5398	Durbin-Watson stat	3.230773
Prob(F-statistic)	0.000000		

Interpretation of Hypothesis 1, 2 & 3

The above analysis shows that there is a statistical relationship between lean accounting and the criterion variables (inventory turnover, return on investment, and return on assets). This is because the p-value obtained (0.0000) was lower than the benchmark value of 5% specified in E-

views for this analysis. This also implies that as quoted companies adopted lean accounting, the level of their IT, ROI and ROA begin to improve, since both variables have a direct relationship with each other. However, this result was different from the Durbin-Watson test, since the value obtained (i.e.3.230773) was higher than the benchmark of 2, hence, we can conclude that using Durbin Watson the variable does not show a relationship with each other. This also implies that there is a problem of serial correlation problem with the variables, which implies that the variables are not correlated with each other. But, the result of the R square also validates the output of the P-value, because it shows a value of 99%, which implies that the predictor variable accounts for 99% of the criterion variables while the remaining 1% can be accounted for by another factor outside this model. The variance in the result of the statistical parameters used in this analysis may seem to contradict each other, however, this contradiction can be settled by the result of the F statistic (i.e. 0.0000). Therefore, since this value is lower than the benchmark significance value specified in E-views for this analysis, we can conclude that there is a significant relationship between both variables.

Discussion of Findings

The P-value obtained (0.0000) using Ordinary least square regression was lower than the benchmark value of 5% specified in Eviews for this analysis, demonstrating that there is a strong relationship between lean accounting and financial performance as measured by inventory turnover, return on investment, and return on assets of the limited consumer manufacturing companies in Nigeria. These results were consistent with earlier research; for instance, Lawal and Abdullahi (2020) examined how lean accounting affected the financial performance of private hospitals in Kaduna State. Lean accounting significantly and favorably affects the financial performance of private hospitals in Kaduna State, according to the analysis's findings. The effect of lean accounting data on the financial performance of the healthcare industry is examined by Almuawi et al. in 2019. The study's conclusions demonstrate that value stream costing implementation enables managers to discern between value-added and nonvalue-added operations. Abdalla and Job (2018) investigate the impact of a few lean management techniques on the Kenyan private hospitals' financial performance. The results showed a significant and favorable association between financial performance and every lean management approach. René, et al. (2018) review the body of knowledge about the link between lean manufacturing and business performance. The study's findings indicate a moderately good association between overall business performance and aggregate levels of lean production. Samad et al. (2017) conducted research to look at the function of lean accounting in the production of value. The study's conclusions showed that because traditional accounting practices don't fit the lean accounting process, financial statement preparers apply new accounting techniques. Al-Rahimi (2016) looks into how lean accounting techniques affect production cost reduction in Jordanian industry firms. The study's conclusions showed that lean accounting is essential for lowering production costs in Jordanian manufacturing businesses.

CONCLUSION AND RECOMMENDATION

The aim of this study was to investigate the relationship between lean accounting and the financial performance of limited consumer manufacturing companies. The researchers came to the conclusion that there is a strong and favorable association between lean accounting and the financial performance of limited consumer manufacturing companies based on the study's findings. The study's findings suggest that limited consumer manufacturing companies looking to boost their financial performance should think about implementing lean accounting methods.

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