

JUST IN TIME STRATEGY AND FINANCIAL PERFORMANCE OF SMALL SCALE INDUSTRY IN OGUN STATE: A STUDY OF ADO – ODO/ OTA LOCAL GOVERNMENT

Patrick Amaechi Egbunike¹, Osazee Graham Imade²

¹Patrick Amaechi Egbunike, Nnamdi Azikiwe University, Awka, Nigeria, Faculty of Management Sciences, ap.egbunike@unizik.edu.ng

²Osazee Graham Imade, Nnamdi Azikiwe University, Awka, Nigeria, Faculty of Management Sciences, princeadeidowu@gmail.com

Abstract: Many manufacturing firms have decided to implement just in time technique as a strategic cost management to survive and remain competitive in their business environment. The study examines how just in time technique has assisted in reducing inventory cost management and improve the firm profit level. The specific objective is to ascertain the influence of purchases and sales on return on equity of small scale manufacturing industry. Survey design was used for the study. Sample frame was purposively selected for convenience sake. Data was collected though secondary source. Regression analysis was employed to analyze the data. The study found positive relationship between just in time implementation and profit level of small scale business industry. We recommend other small scale businesses that have not started implementing just in time strategy to start the strategy. We encourage future researcher to examine the efficiency of just in time strategy among petty small scale trader in our urban centers.

Keywords: Just in time strategy, profitability, competitive environment

JEL Classification: M31

INTRODUCTION

Cooper and Slagmunder (2004) define strategic cost management as a process of reducing cost and improve strategic position of an organization. Strategic cost management is a way of controlling costs in alliance with organization strategy. Organization has to manage their costs in order to remain competitive in the market. Due to financial meltdown or economic recession experienced in Nigeria economy, it is imperative for small scale manufacturing firms to employ strategic cost management technique in other to remain in competitive market. The firms need to apply strategic cost control to their inventory management in order to boost their efficiency and effectiveness. This leads to introduction of just in time technique.

Gonzalez and Gonzalez (2010) just in time management technique is an act of supplying

customers with stocks as at the right time with the exact quantity required by the customer. It leads to reduction in the inventory carrying cost and leads to profit maximization. According to Ohno (1988), just in time or lean production was first introduced and successfully implemented by Toyota Company. Ouyang et. Al, (2007) note that, there should be mutual relationship between manufacturers, suppliers (vendors) and distributors (customers) for successful implementation of just in time strategy. Therefore, the strategy is to reduce inventory management cost by eliminating waste from supply chain. Sadhwani et al., (1985) said just in time strategy is driven by final product demand; where each item is procured, manufactured, and delivered in the quantities demanded for.

Despite the performance implication of just in time strategy among manufacturing firms, little

empirical study has been carried out that relates to small scale industry. Adeyeye, Ogunnaike, Amaihian, Olokundun and Inelo (2016) examine vendor managed inventory and performance of manufacturing firms in Nigeria. Ogbo and Ukpere (2014) studied inventory control management and organizational performance of 7up bottling company in Nigeria.

Some of the study reported on just in time strategy in Nigeria does not investigate the implication of adopting just in time on financial performance of small scale industry. To fill this gap, this study will examine the influence of just in time strategy application on firm return on equity. This is crucial for the survival of small scale industry in this competitive environment.

1. OBJECTIVE OF THE STUDY

The main objective of the study is to determine the influence of just in time strategy on financial performance of small scale industry in Ogun State. The specific objective is to ascertain the influence of just in time cost management strategy on return of equity of small scale industry. The study will be guided by this hypothesis:

H₀: just in time cost management technique does not improve return on equity of small scale enterprises.

1.1. Scope

The study will focus on small scale manufacturing firms located in Ado – Odo/ Ota local government. The local government was selected because of large concentration of small scale manufacturing firms in the area. The study will based their study of small scale manufacturing firms that have been in the business for the last five years and keep their books of account up to date. The study will cover the period of 2015 to 2016.

2. EMPIRICAL REVIEW

Ahmad Mehra and Pletcher,(2004) carried out study on the perceived impact of just in time implementation on firms' financial/growth performance. They discovered that just in time technique improve firm financial performance. According to Huson and Nanda (1995), just

in time led to the reduction in inventory and cost associated with inventory management. Their study discovered that just in time strategy adoption increase earnings per share.

Alles, Datar, and Lambert(1995) found that mutual understanding based on cost information exchange between the manufacturer, the vendor and the buyer led to significant reduction of total cost in just in time environment. Nakamura et al. (1996) discovered in their study that just in time technique leads to significant improvements in plant performance measures carried out among forty United State manufacturing firms. Balakrishnan et al. (1996) investigate 46 firms that adopted just in time over the 1985–1989 periods and found no significant difference in the changes to return on assets (ROA) between the treatment group and the control group. The study found out that the implementation of just in time technique implementation did not lead to improved financial performance.

Adeyeye, Ogunnaike, Amaihian, Olokundun and Inelo (2016) studied inventory control and performance of manufacturing firms in Nigeria. The study examine the relationship between vendor managed inventory and performance in manufacturing firms. They discovered positive relationship between vendors managed inventory and manufacturing firms' performance. Ogbo and Ukpere (2014) examine the effectiveness if inventory control management on organizational performance of 7up bottling company in Nigeria. The study discovered that inventory management techniques should be varied in order to achieve effective organizational performance.

The empirical studies on implementation of just in time and firm profitability have mixed results. However, no empirical study was conducted to examine just in time implementation and return on equity of small scale manufacturing firms in Ogun State, especially the industrial hub of the state – Ado – Odo / Ota Local Government area. Hence, this study will fill the gap.

3. DESIGN AND METHODOLOGY

The population of the study consists of small scale manufacturing firms in Ado –Odo /Ota Local government of Ogun State. Purposive

sampling technique was employed to select sample frame from the population due to convenience sake. Therefore, the sample population was taken from Ota metropolis because most of the small scale industries in the local government were located in Ota. The sample population is: Electrode Nigeria Limited, De – United Foods Industry, Innovative Packaging Limited and Lexcel products and packaging limited.

The study used survey design for the study. Secondary data was obtained from books of account and stock record books of the sample population for the period of 2015 to 2016. A multi regression analysis was used to analyze data for the study. In the regression model, financial performance is the dependent variable while just in time is the independent variable. The financial performance is measured by return to equity. Return to equity was calculated by dividing net income by owners' equity, multiply by 100%. Just in time was measured by the amount of inventory on hand was measured by the number of weeks of inventory maintained by the firm. We observed percentages of purchases, production, and sales that were made on just in time bases.

The multiple regression models in its functional form were specified as follows:

$$\text{Prot} = f(\text{JiT}). \quad (1)$$

$$\text{Prot} = f(\text{Pur}, \text{SLe}) \quad (1)$$

$$\text{Prot}_{ij} = \beta_0 + \beta_1 \text{Pur}_i + \beta_2 \text{SLe}_j + U_{ij} \quad (2)$$

$$B_i > 0; R^2 > 0.$$

Where:

β_0 = intercept

β_{1-2} = Regression Coefficients

U_t = Error term not represented in the model

ij = Time period of the study

Prot = Profitability (return on equity)

JiT = Just in time

Pur = Purchases

SLe = Sales

4. DATA ANALYSIS, RESULTS AND DISCUSSION

The hypothesis that guides our study is;

Ho: just in time cost management technique does not improve return on equity of small scale enterprises.

Tab. 1: Regression coefficient for sales and purchases on return on equity

Model Summary ^b							
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Sig. F Change	Durbin-Watson	
1	.884 ^a	.781	.733	84.51024	.001 ^b	1.743	

^a Predictors: (Constant), Sales, Purchases, ^b Dependent Variable: Return on equity

Source: Authors own study 2017

Sales and purchases explain 78.1 per cent of variation experienced in return on equity level of the selected small scale manufacturing firms.

This result shows significant relationship between return on equity and just in time implementation.

Tab. 2: ANOVA RESULT: sales and purchases on return on equity

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	229749.094	2	114874.547	16.084	.001 ^b
	Residual	64277.823	9	7141.980		
	Total	294026.917	11			

^a Dependent Variable: Return on ekvity, ^b Predictors: (Constant), Sales, Purchases

Source: Authors own study 2017

Just in time implementation was responsible for 78.1% increase in firms return on equity level of the sample population. The f-ratio (16.084)

shows that the independent variables (sales and purchases) are the major determinants in explaining profitability (return on asset).

The independent variables are statistically insignificant because its significance value is 0.01, that is $P < 0.05$. So the null hypothesis is rejected while alternative hypothesis is accepted. Therefore, there is significant relationship between just in time cost management technique and profitability of manufacturing firms. Based on the analysis above, the null hypothesis (H_0) is rejected while the alternate hypothesis (H_1) is accepted; which state that just in time cost management technique improve return on equity of small scale enterprises.

CONCLUSION AND RECOMMENDATION

Nigeria small scale manufacturing firms are facing financial difficulty due to economic recession that is biting hard on the economy. Many manufacturing firms have decided to implement just in time technique as a strategic cost management to survive and remain competitive in their business environment. The study examines how just in time technique has assisted in reducing inventory cost management and improve the firm profit level. The study found positive relationship between just in time implementation and the return on equity of the small scale manufacturing firms. We discovered that the level of inventory hold by manufacturing firms are drastically reduce, which enable the firm to cut their cost of maintaining inventory in their store. The cost saved is reinvested into the business of the firm. Therefore, we recommend that other small scale firms that have not implement just in time technique should try to implement the strategy. The implementation of the strategy will help to reduce firm total cost and will induce mutual cooperation between manufacturers, vendors and customers. Future researchers are encouraged to expand the scope of this study. More importantly, researcher should focus on petty traders that are into retail trading in urban markets.

REFERENCES

Adeyeye, J., O., Ogunnaiké, O., Amahian A., Olokundun, M., & Inelo, F. (2016). Inventory control and performance of manufacturing firms.

Journal of engineering and applied sciences. 1192.

Ahmad, A., Mehra, S., & Pletcher, M. (2004), The perceived impact of JIT implementation on firms' financial/growth performance. *Journal of Manufacturing Technology Management.* 15(2), 118 - 130.

Alles, M., Datar, S., & Lambert, R. (1995) Moral hazard and management control in Just-In-Time settings. *Journal of Accounting Research.* 33, 177-204.

Balakrishnan, R., Linsmeier, T., J., & Venkatachalam, M. (1996). Financial benefits from JIT adoption: Effects of customer concentration and cost structure. *The Accounting Review.* 71, 183-205.

Cooper, R., & Slagmulder, R. (2004). Achieving Full-Cycle Cost Management. *MIT Sloan Management Review.* 46(1), 44-50.

Gonzalez, J., L., & González, D. (2010). *Analysis of an economic order quantity and reorder point inventory control model for company Xyz.* San Luis, Obispo: California Polytechnic State University.

Huson, M., & Nanda, D. (1995). The impact of just-in-time manufacturing on firm performance in U.S. *Journal of Operations Management.* 9(1), 5-14.

Ogbo, A., I., & Ukpere, W., I. (2014). Impact of effective inventory control management on organizational performance: A study of 7up bottling company. *Mediterranean journal of social sciences.* 5(10).

Ohno T (1988). *Toyota Production System: Beyond Large-scale Production.* Cambridge: Productivity Press.

Ouyang, L., Y., Wu, K. S., & Ho, C., H. (2007). An integrated vendor- buyer inventory model with quality improvement and lead time reduction. *Int J Prod Econ.* 108(1-2), 349-358.

Nakamura, M., Sakakibara, S., & Schroeder, R., G. (1996). Japanese manufacturing methods at US manufacturing plants: empirical evidence. *Canadian Journal of Economics.* 29(2), S468-74.

Sadhvani, A., T., Sarhan, M., H., & Kiringoda, D. (1985). Just-in-time: an inventory system whose time has come. *Management Accounting.* 67(December), 36-44.

Schonberger, R. (1982). Some observations on the advantages and implementation issues of just-in-time production systems. *Journal of Operations Management*. 3(1),1-11.