Materials Management As A Panacea For The Performance Of SMEs: Evidence from Kogi State

ABSTRACT

This study focused on the effects of materials management on the performance of SMEs in Kogi State. For this study, the method used was research survey design. The population of the study comprised of the SMEs in food processing and manufacturing industries in the Eastern Senatorial District of Kogi State. A multi-stage sampling was used to select 384 SME owners in Kogi State. Descriptive statistics, Multiple Regression and Ordered Probit Regression were used for analysis. Findings show that material planning and over-stocking of materials have significantly positive effects on profitability of SMEs in Kogi State; while under-Stocking of materials have significantly negative effect on profitability of SMEs in Kogi State. Finding further shows that persistent material under-stocking significantly causes customer's satisfaction of SMEs in Kogi State to decrease. The study concluded that materials management is critical to the achievement of desired performance of SMEs. It was recommended that SME owners should engage in effective material planning and keep over-stocking of materials moderate. The implication of this is that profitability and customer's satisfaction of SMEs in Kogi State will be enhanced if materials are properly managed.

Keywords: Inventory, Inventory Control, **Customers' Satisfaction, Procurement**, **Profitability**, **Business Environment**

1. INTRODUCTION

Recently, Small and Medium-size Enterprises (SMEs) appears to have faced material procurement, inventory and supply challenges. These are crises obviously posed by the economic recession to SME sector. According to Asaolu, Agorzie and Unam (2012), SMEs invest "a considerable amount of capital on materials". This investment on material is essentially required for the survival of SMEs. It is also back up with the fact that operations of SMEs must be unobstructed, and the enterprise their competitive power must be established. Unfortunately, SMEs are observed often engaged in the procurement of low quality materials and unapplaudable inventory managerial approach to reduce cost. The SME owners are not conversant with the fact that material costs are varying parameters. In previous study, Ogbadu (2009) tried to establish that apart from basic price of materials, other varying costs attached to materials acquisition are purchasing cost, marketing cost, obsolescence and wastages.

However, It may be wrong for SME owners to focus only on the procurement of the best quality materials without adequate attention on material planning and control. The application

of planning and control to the management of materials is for effective operations of SMEs. Akindipe (2014) posited that the significant of material management to the effective and efficient operation of SMEs cannot be disputed.

The management of materials by SME owners requires a very good attention in order to achieve uninterrupted production runs and enhanced performance in operations (Khalid, 2008). The performance of SMEs (in terms of customer's satisfaction and profitability) is believed to also depend on material management and functions. Akindipe (2014) stressed that the "material management function is assumed to be organised and operated on an integrated basis and is also presumed to be responsible for material forecasting, planning, inventory control, scrap control and disposal; providing management information regarding purchases and inventories within the framework of the financial policies and norms" (p.37). The main rationale behind inventory control in material management is to prevent materials understocking and overstocking.

Though, there have been studies conducted on the effects of material management on the performance of SMEs in many countries. Oyebamiji (2018) added that previous studies have convergent opinions on the relationship between the materials management and organization performance. The effects of materials understocking and overstocking on the performance of SMEs still lack research attentions. It is observed also that the relationship has not been extracted in Nigeria, due to the interplay between the controllable and uncontrollable environment of SMEs (controllable- organizational design, key workforce, functions and data base; and uncontrollable- political, technological and economic). Interestingly, it is observed that SMEs adopt low quality and quantity approach to cope with the hit by the interplay of these factors in order to adapt with change in the business environment. For instance the bans on imported materials have led many SMEs into finding alternative local materials; planning and controlling inventories cheaply to pursue increased customer's satisfaction and profitability in the Nigerian Business Environment (NBE). SMEs are likely to face threat in material management when the uncontrollable factors overpower the uncontrollable factors. Contrarily, opportunities are likely to be utilized when the controllable factors are favourable and exceed the uncontrollable factors. The factors have much influence on material of the right quality and quantity.

According to Akindipe (2014), 'the availability of the material in the right quality and quantity will determine to a reasonable extent the availability, quality and quantity of the

resultant output'. Meanwhile, it is expected that inventory control as an aspect of material management will have positive effects on the profitability of SMEs in Kogi State. It is in this regard that this study will be designed in relation to the business environment of Kogi State. The study of Gelagay and Hora (2018) has found that higher levels of inventory management practice can have positive effect on improved organizational performance. The challenge here is that the actual aspect of the organizational performance is unknown. Other studies (Ramakrishna, 2005; Ogbadu, 2009; Ondiek, 2009) identified turnover as a measure of performance, and have shown that materials account for more than 50% percent of it in the manufacturing firms. Thus, material management is believed to have effects on the performance of SMEs (profitability and customer's satisfaction), and studies in this regard have not been explored in Kogi State. On the general belief, high quality materials attract high costs of production which may in turn have effect on profitability; but customer's satisfaction is likely to improve. Few SME owners may adopt quantity increase approach with high regard for low price. This has the tendency of influencing profitability and customer's satisfaction. The nature of this influence has not been ascertained in Kogi State. This study bridged this gap. Thus, the main objective of the study was to investigate the effects of material management on the performance of SMEs in Kogi State. The specific objectives of the study were to:

i. Investigate the effect of material management (material planning, understocking and over-stocking) on the profitability and customer's satisfaction of SMEs in Kogi State.
ii. Ascertain the effects of factors (increasing purchasing cost, increased marketing cost, obsolescence due to over-stocking, wastages due to over-stocking and loss of customer's patronage) on the profitability of SMEs in Kogi State.

2. REVIEW OF RELEVANT LITERATURE

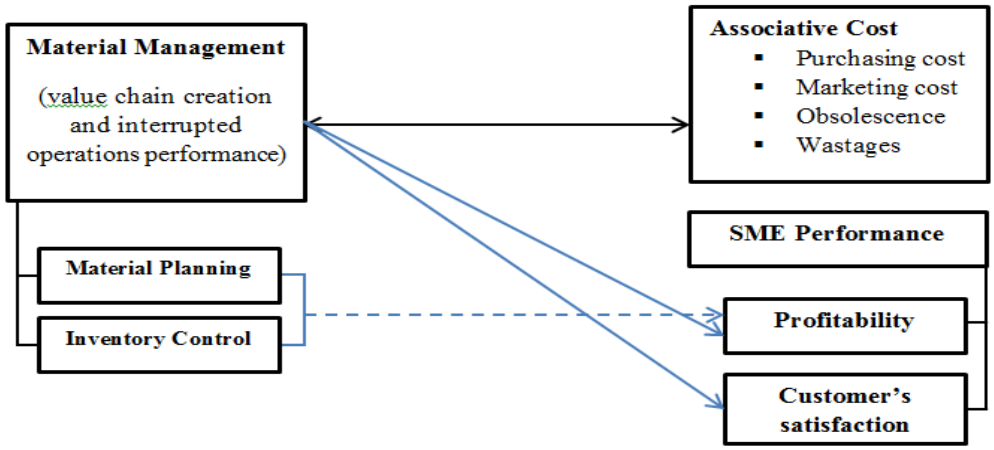
Material management is so much connected with value chain and efficiency in the operations of SMEs. According to Aina *et al.* (2017), "materials management encompasses all operations management functions from purchasing of raw materials through the production processes to the final delivery of the end products". This implies that the management of materials is critical to delivering values to customers. For instance, the management of materials takes account of what customers really need, how can materials be sourced, what quantity and quality must be supplied, how can the material supplied be used effectively and efficiently to deliver a customer's desirable value. Ondiek (2009) added that materials

management brings ‘together under one management responsibility for determining the manufacturing requirement, scheduling the manufacturing processes and procuring, storing and dispensing materials’.

Gopakakreshnan and Sundaresan (2006) stressed that material management is concerned with all activities which are related to the flow of materials, from the supplier's plant through the manufacturing process, into finished goods warehouse and on to the ultimate users of the product. In another way, Donyavi and Flanagan (2009) expressed that “material management is concerned with system for planning and controlling to ensure that the right quality and quantity of materials and equipment are specified in a timely manner” (p.12). Based on their view, it is also depicted that material management is planning and control task that takes into account acquisition cost and on-time delivery to avoid operations shutdown, increase average cost of producing goods, out-of-stock, and so on.

Effective and efficient management of material has so much implication on the overall performance of SMEs. The management of raw material in a manufacturing organization therefore deserves attention and critical study in order to achieve uninterrupted production runs and enhanced performance (Khalid, 2008) in terms of profitability, customer’s satisfaction, reduced cost and high quality. Aina-David *et al.* (2017) asserted that materials management is a tool to optimize performance in meeting customer service requirements at the same time adding to profitability by minimizing costs and making the best use of available resources. Thus, materials management is the process which integrates the flow of supplies into, through and out of SMEs to achieve a level of service which ensures that the right materials are available at the right place at the time in the right quantity and quality and at the right cost.

Fig. 1: Conceptual Framework of Materials Management and Performance



Source: Adopted from Gopalakrishnan and Sundaresan (2006); Ogbadu (2009); Salome (2014)

Anichebe and Agu (2013) expressed that material management and material planning are used interchangeably. It is worthy of note that material planning is an arm of material management. It is in this regard this present study treats material planning as an aspect of material management. However, it is observed that most SMEs invest largely on material. This is in no doubt that the operations of the SMEs are grossly dependent on materials to provide goods that are demanded by customers in a unique way. Ondiek (2009) is of the opinion that such a large investment requires considerable planning and control so as to minimize wastage which invariably affects the profitability of organizations. Material planning is a scientific way of determining the requirements starting with raw materials, consumables, spare parts and all other materials that are required to meet the given production plan for a certain period. Though a study (Monday, 2008) considered Materials Requirements Planning (MRP), purchasing, procurement of materials, inventory control, storage, materials supply, transportation and materials handling as the activities which affect the performance of SMEs. In this study, effort is only premised on material requirement planning and inventory control. These two activities are observed to be influencing the operations performance of SMEs in Kogi State. SMEs need the materials at the right price (affordable), at the right quantity (sufficient for operations), in the right quality and at the right time. Aina *et al.* (2017) expressed that these will help SMEs to co-ordinate and schedule the production activity in an integrative way for an industrial undertaking.

It has been proven in previous studies that effective material management has the tendency of positively affecting the performance of SMEs. The study conducted by JerutoKeitany,

Wanyoike and Salome (2014) provided this evidence. Some of these studies did not decompose the organizational performance in the course of their survey. Those studies which decomposed organizational performance only used profitability as a parameter. For instance, Ibegbulem and Okorie (2015) discovered that material management has the propensity to contribute to the profitability of organizations. The study of Nwosu (2014) had revealed that material management has significant effect on profitability of organizations. It is observed that these studies were conducted on large firms and enterprises. Little or no effort has been asserted to investigate the same effect on SMEs. This is quite a big loophole, particularly in Nigeria. In fact, there appears to be a big gap even in the context of large enterprises because the effect of material management on customer's satisfaction has not been investigated or not adequately researched. In this study, it is expected that effective material management will have effect on customer's satisfaction of SMEs in Kogi State. This a-priori expectation follows the assertion of Achison (1999) who maintained that material management as a concept requires an organizational structure which often unifies into one functional responsibility- the systematic planning and control of all material from identification of the need through delivery to customers. This study upholds that effective material management can fast-track the supply and management of quality materials that can enhance the production of quality goods that can satisfy the identified need of the customers.

3. RESEARCH METHODOLOGY

3.1 Research Design

For this research, the method used was research survey design. The design focused on the collection and data analysis from the study population which enabled the researcher to look into the causal association connecting the identified variables. The instrument that was used for the collection of relevant data for the study was be questionnaire.

3.2 Population

The 'complete set of cases from which a sample was selected is called the population whether it describes human beings or not' (Saunders *et al*., 2007). For the purposes of this study, the population comprised of the SMEs in food processing and manufacturing industries in Kogi State. It appears that there is no adequate record of SMEs regarding Kogi State. There are many SMEs that are not registered in Kogi State. Thus, this study considered the population infinite.

3.3 Sampling Technique

A multi-stage sampling was used to select 384 SME owners in Kogi State. The first stage was the stratified sampling method. This involved grouping the SMEs according to their location. The second stage involved the use of sampling by sectors, and lastly, the stage involved the use of simple random sampling method to pick the respondents from SMEs' clusters in Kogi State. The simple random technique was used to ensure equal opportunity for the participation of SME owners in the population and to prevent unnecessary bias in the selection process. The total sample size was 384. This cuts across gender, age, marital status, educational qualification and work experience.

Cochran's (1977) method outlined in Bartlett, Kotrlik, and Higgins (2001) was adopted to determine the sample size. The formula is presented below.

$$\underline{n_0} = \frac{t^2 \times p \times (1-p)}{d^2}$$

Where;

$\boldsymbol{n_0}$ is the minimum estimated sample size

t is the value of the *t*-distribution corresponding to the chosen alpha level – for .05 this is 1.96

p is the estimate of population proportion*

d is the margin of error – Bartlett *et al*. recommend using 5%

*When *p* is unknown, generally it is best to set it at .5

Therefore,

$$\frac{(1.96)^2 \; x \; 0.5 \; x \; (1-0.5)}{0.05^{\;2}}$$

$$\frac{3.8416 \;\; x \; 0.5 \; x \; 0.5}{0.0025} = 384 \;.16 \; = \; 384 \;\; Approximat \;\;\; ely$$

3.4 Validity and Reliability of Instrument

To establish the instruments' validity, a panel of experts was consulted. To establish the instrument reliability, the Cronbach Coefficient alpha (α) was used. The Cronbach

Coefficient results are materials planning (α = 0.78), materials under-stocking (α = 0.81), materials over-stocking (α = 0.70), profitability (α = 0.71), customer's satisfaction (α = 0.75), increasing purchasing cost (α = 0.72), increased marketing cost (α = 0.80), obsolescence due to over-stocking (α = 0.70), wastages due to over-stocking (α = 0.77) and loss of customer's patronage (α = 0.82).

3.5 Method of Data Analysis

The descriptive method of data analysis was employed as analytical tool for the study. Descriptive statistics is a potent method used in social science research to describe the features of the research sample like percentage, means, and standard deviations (SD). In addition this study used Multiple Regression and Ordered Probit Regression for analysis. The model that was used in ascertaining the effects of the independent variables on the dependent variables of the study has been specified as:

Objective One: Multiple regression model

$Y = f(X)$

$y_1 = f(x_1, x_2, x_3)$ ……...…1

$y_2 = f(x_1, x_2, x_3)$……2

$y_1 = \alpha 0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \mu$ ……1

$y_2 = \alpha 0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \mu$ ……2

Where:

y_1 = Profitability

y_2 = Customer's Satisfaction

X_1 = Material Planning

X_2 = Under-Stocking

X_3= Over-Stocking

Objective Two: Ordered Probit Regression Model

$\mathbf{Y^* = x^1\beta + e_1}$

Where y* is the exact but unobserved dependent variable

X is the vector of independent variables and

B is the vector of regression coefficients which is estimated.

$\mathbf{Y = (X_1 + X_2 + X_3 + X_4 \ldots\ldots\ldots X_n) + e}$

$\mathbf{X_1}$ = Increasing Purchasing Cost

$\mathbf{X_2}$ = Increased Marketing Cost

$\mathbf{X_3}$ = Obsolescence Due To Over-Stocking

$\mathbf{X_4}$ = Obsolescence Due To Over-Stocking

$\mathbf{X_5}$ = Loss of Customer's Patronage

Y*= Profitability

e = Error term

4. DATA ANALYSIS AND RESULTS

Table 1 Questionnaire administration

Questionnaire	Frequency	Percentage
Administered	384	100.00
Returned	263	68.49
Unreturned	121	31.51

Source: Field Survey (2019)

Table 1 indicates that 384 questionnaires (100%) were administered; 263 questionnaires (68.49%) were returned while 121 questionnaires (31.51%) were not returned. Based on the result, the study analyzed data on the returned questionnaires.

Table 2 Showing demographic characteristics

Gender	**Frequency**	**Percent**
Male	149	56.7
Female	114	43.3
Total	**263**	**100.0**
Age	**Frequency**	**Percent**
Below 20 Years	21	8.0
21-25 Years	19	7.2
26- 30 Years	76	28.9
30-35 Years	55	20.9
36- 40 Years	36	13.7
40- 50 Years	27	10.3
Above 50 Years	29	11.0
Total	**263**	**100.0**
Certificates	**Frequency**	**Percent**
Primary	30	11.4
Secondary	49	18.6

College of Education	96	36.5
University	88	33.5
Total	**263**	**100.0**
Business Experience	**Frequency**	**Percent**
Below 1 Year	20	7.6
1-2 Years	31	11.8
2-4 Years	88	33.5
4-6 Years	75	28.5
6-10 Years	20	7.6
10-15 Years	20	7.6
Above 15 Years	9	3.4
Total	**263**	**100.0**

Source: field survey, 2019

Table 2 above shows the gender of respondents. It is observed that 149 respondents (56.7%) were male; and 114 respondents (43.3%) were female. The implication of this is that majority of respondents in the study area were male.

Table 2 above shows the level of education of respondents. It is posited that 30 respondents (11.4%) were Primary School Certificate holder; 49 respondents (18.6%) were Secondary School Certificate Holder; 96 respondents (36.5%) were College of Education Certificate Holder; and 88 respondents (33.5%) were Bachelor of Science Certificate Holder. It is opined that majority of respondents in the study area were College of Education Certificate Holder.

The table 2 above shows the age bracket of respondents. It is observed that 21 respondents (8.0%) were below 20 years; 19 respondents (7.2%) were within 21-25 Years; 76 respondents (28.9%) were within 26- 30 Years; 55 respondents (20.9%) were within 30-35 Years; 36 respondents (13.7%) were with 36- 40 Years; 27 respondents (10.3%) were within 40- 50 Years; and 29 respondents (11.0%) were above 50 years. This denotes that the majority of respondents in the study area were within 26- 30 Years.

Table 2 above shows years involved in business. It is studied that 20 respondents (7.6%) were below 1 year; 31 respondents (11.8%) were 1-2 Years; 88 respondents (33.5%) were 2-4 Years; 75 respondents (28.5%) were 4-6 Years; 20 respondents (7.6%) were 6-10 Years; 20

respondents (7.6%) were 10-15 Years; and 9 respondents (3.4%) were above 15 years. It is observed that majority of respondents in the study area were 2-4 Years.

Table 3: Multiple regression analysis of the effect of Material Planning, Under-stocking and Over-stocking

Variables	**Column I Profitability**			**Column II Customers' Satisfaction**		
	Coef	**t-stat**	P-Value	**Coef**	**t-stat**	P-Value
Material Planning	.480	28.505	.001	-.064	.255	.775
Under-Stocking	-.160	7.064	.001	-.275	3.872	.022
Over-Stocking	.376	16.795	.001	-.436	.923	.338
Multiple R	.772			.628		
R – squared	.595			.394		
Adjusted R-Squared	.583			.382		
F-Statistics	46.739			33.385		
P-value	.001			.001		

Dependent Variable: Profitability and Customers' Satisfaction of SMEs
Predictors: Material Planning, Under-stocking and Over-stocking

The Multiple R (0.772) in table 3(I) indicate strong linear relationship between the variables. The coefficient of determination (R^2= 0.595) show the spread of data on the regression line. The R-square indicates that 59.5% variation in the profitability of SMEs is explained by the predictor variables (such as material planning, under-stocking and over-stocking of materials). The remaining 40.5% shows that there are other variables that account for variations in the profitability of SMEs in Kogi State.

Table 3(I) shows the levels of variability within a regression model and forms the basis for tests of significance. The *P*-value for the *F* test statistic (*F*= 46.739) is 0.001, providing strong evidence against the null hypothesis. The squared multiple correlation R^2 = SSM/SST = 156.613/263.000 = 0.772, indicating that 77.2% of the variability in "profitability" variable is explained by "material planning, under-stocking and over-stocking of materials" variables. Table 3(I) shows the relationships between each of the independent variables and profitability of SMEs in Kogi State. The material planning in the regression model is 0.480 with the p-value less than 0.001. This coefficient represents the mean increase in profitability for every additional material planning activity. Thus, 48.0% increase in profitability of SMEs in Kogi State is as a result of the significantly proportional change in material planning activity. Under-Stocking in the regression model is -0.160 with the p-value less than 0.001. On the

contrary, the coefficient represents that the mean decrease in profitability is significantly caused persisting under-stocking of materials. Unaddressed increase in under-stocking is likely to significantly cause dwindling profitability in almost the same proportion. The over-stocking in the regression model is 0.376 with the p-value less than 0.001. This coefficient represents that the mean increase in profitability is significantly brought about by every increase in over-stocking of materials. Thus, 37.6% increase in profitability of SMEs in Kogi State is as a result of the significantly proportional increase in over-stocking of materials.

The Multiple Coefficient of Determination (R= 0.772) in table 3(II) indicates strong linear relationship between the variables. The coefficient of determination (R^2= 0.394) shows the spread of data on the regression line. The R-square indicates that 39.4% variation in the customer's satisfaction of SMEs is explained by the predictor variables (such as material planning, under-stocking and over-stocking of materials). The remaining 60.6% shows that there are other variables that account for variations in the customer's satisfaction of SMEs in Kogi State. The *P*-value for the *F* test statistic (*F*= 33.385) is less than 0.001, providing strong evidence against the null hypothesis. The squared multiple correlation R^2 = SSM/SST = 103.559/263.000 = 0.394, indicating that 39.4% of the variability in "customer's satisfaction of SMEs" is explained by "material planning, under-stocking and over-stocking of materials" variables.

Table 3(II) shows the relationships between each of the independent variables and customer's satisfaction of SMEs in Kogi State. The material planning in the regression model is -0.064 with the p-value more than 0.05. This coefficient represents the mean increase in customer's satisfaction for every decrease in material planning activity. Interestingly, 48.0% increase in customer's satisfaction of SMEs in Kogi State is not significantly brought about by proportional decrease in material planning activity. Under-Stocking in the regression model is -0.275 with the p-value less than 0.05. Also, the coefficient represents the mean decrease in customer's satisfaction of SMEs for every persisting under-stocking of materials. Unaddressed increase in under-stocking significantly causes customer's satisfaction of SMEs in Kogi State to decrease in almost the same proportion. The over-stocking in the regression model is -0.436. This coefficient represents the mean increase in customer's satisfaction of SMEs for every decrease in over-stocking of materials. Interestingly, 37.6% increase in customer's satisfaction of SMEs in Kogi State is as a result of the proportional decrease in over-stocking of materials; but this appears to be insignificant.

Table 4: Probit regression result of factors affecting profitability

Variables	Coefficients	Standard Error	P>|z|
X_1 Increasing Purchasing Cost	.234	.113	.000*
X_2 Increased Marketing Cost	-.541	.259	.014*
X_3 Obsolescence Due To Over-Stocking	-.179	.041	.000*
X_4 Wastages Due To Over-Stocking	-.507	.270	.031*
X_5 Loss Of Customer's Patronage	.063	.065	.384

Source: Field Survey, 2019

Number of Obs=		263
PR chi^2	=	189.244
Prob > chi^2	=	0.000
R^2 *(Probit)* =		0.419

NB: Figures in the column of z-values* symbolize significance respectively.

The Table 4 shows the factors affecting the profitability of SMEs in Kogi State. The factors are increasing purchasing cost, increased marketing cost, obsolescence due to over-stocking, wastages due to over-stocking and loss of customer's patronage.

From the result of the Ordered Probit Regression on the table 4, the PR chi^2 is 189.244. The Pearson goodness-of-fit chi-square statistic tests the null hypothesis that the model adequately fits the data. The significance value of the test is small (less than 0.05 or equal to 0.01); therefore, the model does adequately fit the data. It is thus appropriate to say that the data do not violate the model assumptions. Prob > chi^2 = 0.000 which implies that 100% of the changes in the profitability of SMEs were explained by the variables in the model. The R^2 (Probit) of 0.419 shows that about 41.9% of the profitability of SMEs is explained by the significant factors (increasing purchasing cost, increased marketing cost, obsolescence due to over-stocking and wastages due to over-stocking). The implication of this is that factors (such as increasing purchasing cost, increased marketing cost, obsolescence due to over-stocking and wastages due to over-stocking) affect the profitability of SMEs significantly among others. It is observed that 'increased marketing cost, obsolescence due to over-stocking, wastages due to over-stocking' entered the model with a negative sign, which implies that change in these factors would lead to a probabilistic inverse change in the profitability of SMEs in Kogi State. Only 'increasing purchasing cost' positively relate with the profitability of SMEs in Kogi State. Importantly, factor (such as loss of customer's patronage) appear to be insignificantly related to the profitability of SMEs in Kogi State.

5. DISCUSSION OF FINDING

Finding shows that majority of SMEs witness under-stocking and over-stocking of materials. There is likelihood that SME owners have weaknesses relating to materials planning. It is discovered that under-stocking and over-stocking of materials are inevitable in the operation of SMEs. There are seen to have implications on the profitability rate of their enterprise. SME owners appear to have stable and satisfactory profitability. Empirical investigation proves that 59.5% variation in the profitability of SMEs is explained by material planning, under-stocking and over-stocking of materials. It was found that material planning and over-stocking of materials have significantly positive on profitability of SMEs in Kogi State. Under-Stocking is discovered to have significantly negative on profitability of SMEs in Kogi State. The studies of Ondiek (2009) and Miller (2010) are in agreement with the finding of this study. Meanwhile, the finding of this present study provides clearer understanding of specific constructs (material planning, under-stocking and over-stocking of materials) as they reflect on profitability of SMEs in Kogi State. The finding of Ibegbulem and Okorie (2015) and Nwosu (2014) provided a holistic empirical backing that material planning, under-stocking and over-stocking of materials as core parts of material management significantly contribute to the profitability of organizations.

It was discovered that SME owners have achieved moderate customer's satisfaction. Customer's often get what they need in good shape and in line with their value. Empirical investigation shows that 39.4% variation in the customer's satisfaction of SMEs is explained by material planning, under-stocking and over-stocking of materials. Empirical evidence shows that persistent material under-stocking significantly causes customer's satisfaction of SMEs in Kogi State to decrease. Material planning and over-stocking appear insignificant to influence customer's satisfaction of SMEs in Kogi State. This finding aligns with that of Planert (1999) that material resources planning do not significantly affect customer's satisfaction. Kim (2014) opined that material resources planning can only predict customer's dynamic behavior. With respect to the effect of materials under-stocking, Ewuola, Imoundo, Ajibefun, daramola and Ayodeji (2005) buttressed that avoiding issues of under stocking ultimately guarantee customer satisfaction.

It is found that there are several costs associated with poor material planning. Descriptive analysis shows that increasing purchasing cost, increased marketing cost, obsolescence due to over-stocking, wastages due to over-stocking, loss of customer's patronage and production

breakdown due to under-stocking associate with poor material management of Small and Medium enterprises. Empirically, 'increased marketing cost, obsolescence due to over-stocking and wastages due to over-stocking' negatively and significantly affect the profitability of SMEs in Kogi State. It is found that only 'increasing purchasing cost' positively and significantly relate with the profitability of SMEs in Kogi State. Empirical investigation proofs that 'loss of customer's patronage' is insignificantly related to the profitability of SMEs in Kogi State.

6. CONCLUSION

Materials management is critical to the achievement of desired performance of SMEs. Considering some aspects of materials management, material planning, under-stocking and over-stocking of materials have varying predicting power over varying dimensions of the performance of SMEs. Though, material planning, under-stocking and over-stocking of materials are practices of SME owners in their routine operation, but their implications are different.

Based on the finding of the study, material planning and over-stocking of materials have significantly positive implication on the profitability of SMEs in Kogi State. proper materials planning has the propensity to influence profitability of SMEs. Also, over-stocking of materials is seen to have short-run positive implication on the profitability of SMEs in Kogi State. Under-Stocking of materials has significantly negative implication on the profitability of SMEs in Kogi State. Factually, under-stocking of materials may cause production short-down, and there may be gap in supply and meeting of customers' demand at the short-run. This may make customers' to find alternative or substitute for their demanded products. The consequence of this is that profitability of SMEs suffers a setback. The empirical evidence provided by this study shows that persisting materials under-stocking will bring about decreasing customer's satisfaction of SMEs in Kogi State. Material planning and over-stocking have not been found instrumental to the increasing customer's satisfaction of SMEs in Kogi State. Avoiding issues of materials under stocking will help to enhance customer satisfaction.

However, increased marketing cost, obsolescence due to over-stocking and wastages due to over-stocking have been found to negatively and significantly affect the profitability of SMEs in Kogi State. In the case of 'increasing purchasing cost', profitability of SMEs is seen to

have direct relationship. The profitability of SMEs in Kogi State is in no way influenced by 'loss of customer's patronage'.

7. RECOMMENDATIONS

With respect to the findings of the study, the following recommendations are made that:

i. SME owners should engage in effective material planning and also keep over-stocking of materials moderate. Over-stocking is evidently proven to be more favourable to under-Stocking. Under-Stocking of materials should be discouraged; as all these will boost profitability of SMEs in Kogi State if properly adhere to.

ii. SME owners should avoid persistent material under-stocking to enhance customer's satisfaction in Kogi State. Material planning and over-stocking should be given less attention if customer's satisfaction of SMEs in Kogi State will be achieved.

iii. SME owners should reduce marketing cost, minimize obsolescence due to over-stocking and minimize wastages due to over-stocking to achieve increased profitability in Kogi State. In addition, SME owners should purchase more materials as this has positive effect on profitability of their enterprises in Kogi State.

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