Achieving Operational Excellence through Effective Stock and Waste Control

Lessons from International Breweries PLC, Onitsha

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Abstract: The study explored the effect of stock and waste control on productivity of Nigerian Bottling Company. The main objective of the study is to determine the extent to which waste contributed to economic activities in Onitsha. This study is anchored on Keiski theory of waste which posits that resource use optimization be promoted to help prevent waste from causing harm to human health and environment. The study adopted survey method of research. Data were generated through primary and secondary sources. Data was collection through questionnaire which was administered among the staff of International Breweries Plc randomly. The population of the study was 920. The sample size of the study was two hundred and ninety (290). Two hundred and ninety (290) questionnaires were distributed, while two hundred and seventy (270) questionnaires were retrieved. Using regression analysis method at 0.05% level of significance the hypotheses were tested. The finding of the study revealed that waste when not managed, could cause harm on health. Stock and waste control has a significant effect on productivity in International Breweries Plc in Onitsha given its F-value of 9.418. The study also concluded that the minimization of materials wastage during production is important in order to avoid loss of profits. The study recommends that the three Rs which are Reduce, Reuse and Recycle should be used effectively.

Keywords: Planning, Logistic, stock and waste control

Introduction

Garbages are generated by businesses of all kinds on daily basis and thus required to be managed responsibly to protect and prevent waste from causing harm to human health and our environment. By maximizing the purchase, storage, distribution, and use of materials to suit customer needs while also enhancing the bottom line through cost savings and more effective resource usage, proper management practices is of utmost important as it helps to minimize the garbage and scraps that need handling. Minimizing waste production is critical in promoting circular economy, where products and materials are reused and recycled in a closed-loop system. This is seen in the definition of Noiki et al 2021, which state that waste as any unwanted, castoff, rejected, excess material anticipated for recovery, reuse, reconditioning, or purified by an independent process from the same source material by embracing the principles of a circular economy, we can reduce waste generation and create a sustainable, regenerative society for future generations to lower the impact garbage has on pollution. When the purchasing division spends money on materials, and stores excess of inventory, the idea was seen as a waste of resources (Monday, 2012; Putra et al., 2021).

Statement of the Problems

The density of population increased in these centers of congregation and therefore wastes generated per unit area also increased. On the other hand, available land for disposal of waste decreased in proportion. The density of population increased in these centers of congregation and therefore wastes generated per unit area also increased. On the other hand, available land for disposal of waste decreased in proportion. The state of the brewing industry in Nigeria is indicative of a number of issues, including delays in project execution or delivery, poor work, dis

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overruns due to material shortages and production waste, theft and material displacement on sites, as well as inadequate accounting and security systems of the concerned sites/firms (Adafin, 2011).

Dey (2015) observed that inappropriate management is wasting materials at a rate that is becoming intolerable for the organization owing to its impact on their profit margin and proper material usage to produce quality work using a variety of strategies. By evaluating the impact of the material management concept as a technique for attaining productivity in International Breweries in Onitsha, this study was done to close the knowledge gap.

Objectives of the Study

This study specifically identified the following objectives:

i. To assess the effect of logistic on productivity in International Breweries Plc in Onitsha.

ii. To examine the effect of waste control on productivity in International Breweries Plc in Onitsha

Research Questions

1. To what extent does logistic affects productivity in International Breweries Plc in Onitsha

2. To what measures does waste control influence productivity in International Breweries Plc in Onitsha

Research Hypotheses

The following research hypotheses are formulated to guide this study:

Ho1: Logistic has no significant effect on productivity in Bottling Companies in Onitsha.

Ho2: Stock and waste control has no significant Influence on productivity in Bottling Companies in Onitsha

Review of Related Literature

Conceptual Review

International breweries Onitsha overview

International Breweries, a subsidiary of Ab Inbev Nigeria Holdings Bv is a largest brewing company in Nigeria headquartered in Lagos and was incorporated in December 22, 1971 by Dr. Lawrence Omole. The company's flagship beer production of Trophy, was commenced in December 1978 having an installed capacity of 200,000 hectoliters per annum. Now, they started with only two brands; Trophy lager and Betamalt. Then in 2010, they introduced Hero larger, Castle Milk Stout, Castle Lite, Redds, Eagle larger, Eagle Stout and most recently Budweiser larger, the premium brand.

According to Beigl, P., Lebersorger, S and Salhofer, S, (2008), dumping sites, incineration, recycling and composting are some of the disposal methods that have been in use for many years now but people still dump their wastes along the roads and gutters. However, they stated that it's very common for solid wastes to be dumped at inappropriate places. And Fakere, A.A., Fadairo, G.F. & Oriye, O.(2012) on Domestic waste management and urban residential environment, further stressed that such indiscriminate dumping leads to the generation of leachates as a result of www.idosr.org Mba and Nnadi rainfall which are washed off into water bodies resulting in pollution and other environmental risks.

Beigil et al [2008] in their research mentioned that Lagos is one of the few states in Nigeria that make house to house collection services available as well as communal collection points. He reported that the state commissioned a transfer loading system to serve different areas in the state to help waste get compacted before being taken to the dump sites. They also stated that materials and resource requirements which include purchasing waste management facilities, equipment, regular maintenance of the facilities, equipment, and payments of workers are factors that affect solid waste management.

Adewole (2009) had revealed that there are still a lot of areas that need to be improved upon for sustainable developments to be achieved.

Generally, waste management have certain challenges due to inadequate waste disposal infrastructure compared to the rising generation of wastes, weak cost recovery plan for solid waste management services rendered, and no cooperation from the public Idowu, O.B.A., Omirin, M.M. and Osagie, J.U. (2011). According to Ezeudu, O.B, Oraelosi, T.C., Agunwamba, J.C., Ugochukwu, U.C. (2021), different factors have been responsible for the challenges in solid waste management and prominent among these are Lack of financial assistance for the private operators by the government, People's lack of commitment, Lack of proper enforcement, Low level of environmental awareness, Bad planning, Population growth, Attitude to work and Corruption. Some other identified challenges of waste management include irregular waste collection, lack of funding, inadequate facilities such as landfills, incinerators, waste vehicles, absence of technical knowledge and more. And because of these challenges in managing solid wastes, Longe, E., Longe, O., & Ukpebor, E. (2009) mentioned that it creates negative effects such as drain blockage, flooding, erosion, traffic congestion, soil pollution, air pollution, health problems, unaesthetic dump sites and loss of community pride.

Theoretical Exposition

Stock Control

Amoro (2011) claims that the majority of manufacturing companies struggle with stock outs, excess supply, overstocking, stock obsolescence, poor forecasting, stock theft, and a lack of adequate material management tools, techniques, and procedures that lead to low productivity. Construction material management, according to Ajayi et al. (2017), is the process of decreasing the quantity and environmental impact of material waste produced throughout a project. Material management is defined by Muleya & Kamalondo (2017) as an integrated process of designing, building new structures or remodeling existing structures, and using materials more effectively. This process is significant for improving the performance of the construction industry and addressing issues with material waste management. The copies of the purchase orders are received and examined to ensure that the quality and other standards comply with those of the company. The inspection task is then completed. The storekeeper, technical staff, or a department request can all conduct the examination (Morrison 2014).

Waste Control/Management

The complexity of waste issues cannot be overemphasized. This is as a result of a significant negative impact it poses on people's health and the environment. The essence of waste management is to reduce its environmental impact. To achieve the efficient of waste management, the process of Using, and recycling of resources within the production activity of manufacturing companies should be well understood. In Nigeria, the frequently practiced waste disposal methods are open dumping, open air burning, and waste burial

Organizational Productivity

Productivity is "the increased functional and organizational performance, including quality," according to Dorgan (1994). According to Rolloos (1997), productivity is defined as what people can produce with the least amount of effort. Employee productivity is defined by Nda & Fard (2013) as the economic measure of output per unit of input. Alternatively, Rohan and Madhumita (2012), in another perspective defined employee productivity as the log of net sales over the total number of employees. Pritchard (2015) gave three definitions of productivity: output/input, or a measure of efficiency; a combination of effectiveness and efficiency; and anything that improves an organization's performance. The benefits of improved staff productivity in manufacturing companies include higher earnings, profits, and incomes, this cannot be overemphasized. Increased availability of both capital and consumer goods at more affordable prices; ultimately shorter workdays and better living and working environments; enhancing the workers' overall economic base (Parker, Waller, & Hu, 2013).

In another word, the term "productivity" describes the actual production per labor unit. It is a significant force behind global money flows. Due to higher employment rates than in the euro region, the United States appears to have the highest productivity levels (Skoczylas & Tissot, 2005). Meneze

(2006) defined productivity as an employee's capacity to generate work, goods, and services that meet or exceed the requirements set by their employers. By comparing the entire output to the total input required to produce it, productivity is determined (Bojke, 2012). According to Amah (2006), productivity is the measurement of how effectively and efficiently resources (inputs) are combined and used to produce goods and services (outputs) of the caliber required by society over the long term. This suggests that productivity is a result of both effective utilizations of resources and performance. High productivity shows that resources are used effectively and efficiently, and waste is kept to a minimum within the company. Productivity strikes a balance between the efforts put out in pursuit of various economic, social, technological, and environmental goals (Amah, 2006). High productivity increases investors' returns and fosters the growth of the business. Productivity measurement identifies potential improvement opportunities and evaluates the success of improvement initiatives. It aids in the evaluation of efficacy and efficiency.

A measurement or computation of productivity compares inputs and outputs. Inputs are the amount of time, money, effort, physical resources, technology resources, and human resources used by the business, whereas outputs are the outcomes. The worker is deemed productive if the inputs and outputs are equal. An organization may do more in a given amount of time when it is productive. Efficiency also saves their business money on labor and time. When workers are not productive, projects take longer to finish, which increases costs for workers because of wasted time (Ikeanyibe, 2009). Productivity is a ratio to measure how well an organization converts input resources (labor, materials, machines, money) into goods and services (Tokaříková, 2013).

Theoretical Framework

Waste Management Theory is founded on the expectation that waste management is initiated to prevent waste that causes harm to human health and environment. This study was anchored on Pau Palmer theory of zero waste propounded in 1970. Zero waste approach can reduce waste management by 84% through the 5Rs: Refuse, Reduce, Reuse and Recycle. Other issues, and it offers the mathematical underpinnings for logistics. A company that must choose how much to order each time period to meet demand for its products is faced with the inventory control challenge. The issue can be modeled mathematically utilizing network optimization, dynamic programming, and optimum control.

Empirical Review

Wahab A.B & Lawal A.F (2011) studied an evaluation of waste control measures in construction industry in Nigeria. They aimed at assessing the forms, causes and factors incidental to waste and measures to effectively control construction waste using value index. The study showed that most of the firms do not calculate waste indices which could assist them to determine the amount of waste that could be generated on sites and therefore, sorting exercise that could help firms to identify economy advantage associated with the waste streams is not adequately carried out. It was also discovered that most firms do not incorporate waste management plan into the collection of documents that are required of contracting firms during tendering process. The study concluded that there is need for proper control in the handling, storage and use of materials on site. Recommendation was made that waste management plan should be incorporated as one of the documents dearly expected to be submitted by contracting firms during tendering process.

Egwuatu, (2020) investigated the effect of material management and organizational productivity in breweries industry South-East in Nigeria. The study aims to examine the effect of material control and organizational productivity of brewer industry and to examine the relationship between material planning strategy and organizational productivity of brewer industry South-East in Nigeria. Relevant conceptual theoretical and empirical literature was reviewed. The study was anchored on Inventory Management Theory. Descriptive survey research design was adopted. The study was carried out in South-East, Nigeria. The population Sample size calculation was employed to determine the sample size of 328. The instrument used for the study was questionnaire. Face and content validity was adopted while, test re-test and Cronbach Alpha method were carried out to achieve reliability of the instrument. Simple percentage analysis was employed to answer the research questions and Multiple Regression analysis was used in testing the hypotheses. Statistical package for social sciences (SPSS) version 21 was employed to run the test. Results showed that material control has a significant positive influence on organizational productivity in Nigeria brewer industries South-East. Material planning strategy has a positive significant effect on organizational productivity in Nigeria brewer

South-East. The study concludes that material management positive significant effect on organizational productivity in Nigeria brewer South-East. The study recommendedthat manufacturing firms develop a policy framework to facilitate faster implementation material control systems in Nigeria brewer so as to excel and guarantee its future, hence improving organizational productivity. Nigeria breweries in Nigeria should increase their resource commitmentto staff training and Research and Development in material planning strategy so as to develop the necessary skills, update their knowledge, and enhance organizational productivity.

Daniel, (2019) examined the effects of materials management on the productivity of an organization. Many business organizations in Nigeria fail to value the role of materials managementin improving their productivity. A simple size of 255 was obtained from the population of 705 at 5% error tolerance and 95% degree of freedom using Yamane's statistical formula 255(100%) of the questionnaires distributed 250 (98%) were returned and 5(2%) were not returned. The questionnaire was designed in Likert scale format. The researchers conducted a pre-test on the questionnaire to ensure the validity of the instrument. Pearson moment product co-efficient and regression analysis were used to test the hypotheses. The study discovered that material management used by the organization adds to the profitability of the company, sufficient storage facilities stops interruption on production process amongst other things. As an outcome of the above, it was suggested that there should be respectable record system of materials for the processes of the organization as it influences production and the training of staff to obtain new skills and knowledge required for the work for the profit of the organization.

Methodology

Research Design

The study used a cross-sectional descriptive survey design to gather information. Data from the targeted individuals were gathered using a questionnaire as the source of the data collecting instrument.

Population of the Study:

A total of 920 people made up the study's population, which also included employees from International Breweries. It was possible to select each of the many respondents in the sample without bias through stratified random sampling. A survey was used to get the data. In testing hypotheses, the calculated value of the test statistic was compared with critical and table value of the statistic. The critical or table value serves as a benchmark for rejecting or not rejecting the null hypotheses. Therefore, the decision rule applied in this research is to reject the null hypotheses if the calculated value at 5% significance level with respective degrees of freedom is greater than the table value, otherwise do not reject.

Data Presentation and Analysis

Data Presentation and Analysis Responses to Questionnaire

A total of two hundred and ninety (290) questionnaires were distributed to respondents. 11 questionnaires returned unanswered while 9 questionnaires were misplaced by the respondents. Only (270) two hundred and seventy were returned. The set of returned questionnaires represents the total distribution.

Out of 100% of the distributed questionnaires, (290) two hundred and ninety, total of 11 were returned unanswered, total of 9 misplaced and (270) two hundred and seventy were returned. Therefore, all computations, interpretations and analysis were therefore based on the number of returned questionnaire i.e 270.

Hypotheses Testing

Hypothesis one

1. Ho1: Logistic has no significant effect on productivity in International Breweries plc in Onitsha.

The test conducted revealed that the large significance value (F.sig<.002) indicate no group differences. Since the F-value of 9.418 with a significance of .000 is less than .05 (i.e .002<.05), from the test conducted above it was discovered that alternative hypothesis is accepted which State that, logistic has a significant effect on productivity in International Breweries plc in Onitsha.

Hypothesis two

1. Ho2: Stock and waste control has no significant Influence on productivity in International Breweries plc in Onitsha

The test reveal that small significance value (F. sig<.05) indicate group differences. Since the Fvalue of 34.035which has a significance of .008 is less than .05 (i.e .001<.05), there exist significant difference among the variables. It was discovered that alternative hypothesis is accepted which state that, waste control influences productivity in International Breweries Plc in Onitsha.

Findings, Conclusions and Recommendations

Findings:

The study revealed that waste when not managed, could cause harm on health. Again, that Stock and waste control has a significant effect on productivity in International Breweries Plc in Onitsha given its F-value of 9.418.

Conclusion

The minimization of materials wastage during production is important in order to avoid loss of profits.

Recommendations

1. The study recommended that firms develop a policy framework to facilitate faster implementation of waste control systems in Nigeria brewer so as to improve organizational productivity as well as to excel and guarantee its future existence.

2. The study recommends that the three Rs which are Reduce, Reuse and Recycle should be used effectively.

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