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**WAREHOUSING PROCESSES AND THE PHYSICAL DISTRIBUTION
EFFICIENCY IN THE BREWERING INDUSTRY IN NIGERIA**

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Warehousing Processes And The Physical Distribution Efficiency In The Brewery Industry In Nigeria

Abstract

The study sought to examine the warehousing processes and physical distribution efficiency in the Brewery Industry in Benin, ascertain the challenges encountered in the physical distribution operations and responsibilities in the Brewery Industry, and determine the cost of physical distribution in the Brewery Industry in Benin. The probability sampling method was used to select 300 people from the brewery under studied, Benin. The instrument used for data collection was primarily, questionnaire, secondary and interview. The descriptive research design was adopted for the study. The hypotheses were tested using method of correlation analysis and the t-statistics. The findings indicated that physical distribution is the responsibility of the marketing department in the brewery industry. The marketing manager oversees the physical distribution of goods; proper documentation are made prior to distribution and orders are usually arranged according to requisition before distributing. The customer bears the cost of warehousing; distribution cost is reasonable; cost of transportation affects the company's profit; maintenance cost reduces profits, cost of shipment is borne by the customer.

The finding also indicated that warehousing cost and distribution cost in the brewery industry in Benin ($R^2 = 0.71$ or 71%; $R^2 = 0.66$ or 66%; $F. Stat = 13.11$; $DW - stat = 1.7$), escalating costs, increased industrial concentration, and the threat of product obsolescence inherent in accelerating technological innovations. The study concluded that management of the breweries warehousing reduces adverse effect on physical distribution cost, improved distribution efficiency and embraced profits in the companies. The study recommended that management of the brewery could even engage the warehousing processes as contract. This would help in service delivery at effective manners. Such contract should comprise contractors. This is the only way those contractors can be made to accept policies of the companies in an efficient manners.

Keyword: Warehousing Processes, Physical Distribution, Efficiency and Brewery Industry.

Introduction

There have been criticisms on the storage of goods before they are transported from the demand source to supply destinations. The cost of shipment is ineffective where compared in terms of speed and maintenance policy which can be quantified in monetary terms. Since the management of organisations generally involves people and the environment, a preconceived idea and knowledge of this entity (warehousing) would help to enhance its effectiveness and performance.

It is generally agreed that the subject of marketing owes its origin to economist' inquiries into the nature of the distributive process at the end of the last century. However, despite this early interest, it is only in recent years, that the firm has turned its attention to the role which distribution has to play as an element of competitive strategy (Baker, 1991). Drucker (1962) characterised distribution as the "Economy's Dark Continent" and noted that whereas the cost of physical distribution accounted for as much as half of the total cost of finished goods, it had received relatively little attention by comparison with management's cost reduction efforts in other directions. It is being noted that extant concepts assume vertical integration or, alternatively take the viewpoint that physical distribution operations and responsibilities cease where a transfer of ownership occurs. It ignores the fact that many manufacturers sell at least part of their output through intermediaries and this implies that they take no further interest in the scales processes once their output has passed into the wholesaler's inventory. Similarly, vertical integration is a typical of present distributive structures (Baker, 1991).

Statement of the problem

Warehousing cost is a competitive pressure attributable to escalating costs, increased industrial concentration and the threat of product obsolescence inherent in accelerating technological innovations, it is clear that distribution policy has become a question of acute importance to the marketers of the brewery in Benin thus the study seek to examines

warehousing processes and physical distribution efficiency in Benin metropolis in Nigeria: A study of Guinness Nigeria Plc, Nigeria Brewery Plc and Bendel Brewery Ltd, Benin City.

Objectives of the study

The main objective of this study was to examine warehousing and physical distribution cost as it enhances efficiency under the brewery studied in Benin City in Nigeria. However, other subsidiaries objectives are:

1. To examine the physical distribution operations and responsibilities in the Brewery Industry.
2. To assess the cost of physical distribution in the brewery industry.

Research questions

To achieve the above objectives, the following research questions were raised:

1. What are the physical distribution operations and responsibilities in the brewery industry?
2. What are the costs of physical distribution in the brewery industry?

Research hypotheses

The study proposes the following hypotheses:

1. The Marketing Manager, Marketing Department, arrangement of orderly, transportation mode and proper documentation are composition of physical distribution operations and responsibilities in the breweries in Benin
2. Warehousing cost, distribution cost, transportation cost, maintenance and shipment cost are challenges encountered in warehousing processes and physical distribution efficiency in the brewery industry in Benin.

Review of related literature

Conceptual framework

What is warehousing? We must look beyond the warehouse manager and examine the needs of the whole organisation. This involves those who plan the total operation, those who provide the money to pay for it, those who make or provide the items it holds, those who use its services, those concerned with the movement and distribution of stores and those who sell products and the clerical staff of the warehousing organisation itself. The following cost heads:

- (i) Capital expenditure: Land, Building, Road/trail and other facilities, equipment and machinery, and the cost of the average value of stores held.
- (ii) Revenue: Salaries and wages, transport, insurance, maintenance costs, and stationary and other consumables.
- (iii) The cost of store purchases to maintain stocks at their average level. (Lee and Dobler, 2007)

The cost of distribution channels: This is viewed differently by various authors. Baker (1991) defined it as the structure of intra-company organization units and extra company agents and dealers, wholesale and retail, through which a commodity, product or service is marketed. It can also be defined as the route taken to pass title to the product as they move from the producers to the final consumers or the ultimate users (Kotler, 2007).

The need for warehousing

In all the stocks held in the warehouse of this country were to be sold for what they had cost, there would probably be enough money to pay off the National Debt. Warehouse is needed to store shares for further use. There is a gain in having a use lead time. If only those stocks which had been held for more than twelve months were to be share at cost, there would be enough money for the replacement of a sizeable amount of the production machinery of the organisation. If this was added to the cost of buildings and land used to

house then, the amount would be a surprisingly large one. Since this represents frozen capital, we should add the amount of interest the money equivalent could be earning. If stocks stands idle for only three months it is too long a time, for the money tied up in them could be better used in a hundred ways. Even investments in a building society would be much more profitable (Burton, 1980).

Theoretical framework

In the ideal world, warehousing should be plan so that things and items arrived as they were wanted. All that would be required would be a trans-shipment area, stores being delivered and unloaded in lost sufficient to keep the production line going for a day. The same containers which brought materials could be used to ship out completed products to customers. In such a world no storehouses would exist, money would be turned into stores and back again into money each day and one day's worth of money could be sufficient to provide all the stores required for the year. (Morrison, 2003).

Emperical review

Banjoko (1989) conducted a study on inventory control in Nigeria: the case of Lagos, Southwest metropolitan area. The study aimed at ensuring inventories as a stock of items used in the operation of the business which include items used within the production system such as basic raw materials, supplies of component or spare parts, work-in-process and finished goods. He opine that with adequate supply of inventories, manufacturing operations will grinds to a halt. The researcher used both primary and secondary sources to gathered data. It findings were established to be the factors affecting effective inventories in the metropolis. These are: inadequate supply of inventories to a sizeable ones, lack of maintenance of an optimum level of inventory necessary to support the production system at any time and at the least cost possible. In view of the above, the researcher recommended that adequate inventories would help in large production and items would arrive where and when needed so that customers could be satisfied.

Okoye (2003) conducted a study on distribution challenges and proposed solutions. Objectives of the study: to identify the methods for distribution for product of manufacturing goods in Benin, Nigeria. The study was carried out primarily through survey method and interview of employees from Edo State. Its findings were that, installation requirements are directly related to equipment sales needs which can be calculated from standard lists and sales forecasts, provided that the latter are reasonably accurate. Forecast dispatches of equipments are needed well in advance so that the work of the installation teams can be planned. The items requested must be got to the teams before they can commence work and therefore are best sent with the products requiring installation. In the light of the above, the researcher recommended that distribution time is important and should be reduced to the minimum. Damage and incorrect items being issued, play an important part in making the image of the brewery and should be eliminated.

Methodology

This study was carried out primarily through descriptive of the three breweries in Benin. Secondary data was obtained through books, journal, internet, and statement of account published. The probability sampling method was Taro Yamani method used to select a sample size of 300 staff and customers of the breweries under studied. Data collected were presented in tables and hypotheses were tested using correlation analysis and T-statistics using SPSS.

Data analysis and discussion

The data obtained from the field were presented and analysed with descriptive statistics to provide answers for the research questions.

Table 1: Physical distribution operations and responsibilities

S/N	STATEMENT	% Response				
		SA	A	UD	D	SD
1.	Physical distribution is the responsibility of the marketing department in my company	50	15	10	10	15
2.	The marketing manager oversees the physical distribution of goods	50	20	15	10	5
3.	Order are usually arranged according to requisition before distribution	45	15	20	10	10
4.	Transportation mode is selected depending on goods type, distance to be covered and urgency of order/delivery	55	15	10	10	10
5.	Proper documentation is made prior to distribution	40	20	30	5	5

Source: Field survey, 2016

Over 50% of the respondents agree that, physical distribution of the marketing department in the brewery industry; the marketing manager over sees the physical distribution of goods; order are usually arranged accordingly to requisition before distribution; transportation mode are selecting depending on goods, type, distance to be covered and urgency of order/delivery and that proper documentation are made prior to distribution.

Table 2: Cost of Physical Distribution

S/N	STATEMENT	% Response				
		SA	A	UD	D	SD
1.	Customer bears the cost of warehousing	30	25	15	5	5
2.	Distribution cost is reasonable	45	20	15	10	10
3.	Cost of transportation affects the company's profit	50	20	10	15	5
4.	Maintenance cost reduces profit	30	25	35	5	5
5.	Cost of shipment is bear by the customer	20	40	15	15	10

Source: Field Survey, 2016

Over 50% of the respondents agree that customer bears the cost of warehousing; distribution cost is reasonable cost of transportation affects the company's profile; maintenance cost reduces profit; and the cost of shipment is borne by the customer.

Table 3: The regression results for fixed effect model or time invariant result in Nigeria brewery, Guinness brewery and Bendel breweries

Variable	Coeff.	Std err	t-stat	Prob.
WC	0.88	0.19	4.55	0.00
Dnb	1.99	0.94	2.68	0.00
Dg	-1.41	0.57	-5.55	0.00
Dbb	-1.53	0.85	-3.83	0.01
Drt(7)	-0.30	0.22	-1.37	0.18

$$R^2 = 0.71 \text{ or } 71\% \quad R^2 = 0.66 \text{ or } 66\% \quad F - \text{stat} = 13.11$$

$$DW - \text{stat} = 1.7$$

Source: Field survey, 2016

The explanatory variable account for 71% of the systematic variation in the explained or dependent variable, and only 29% is unexplained. This indicates that the model has goodness of fit and also since the R^2 cannot be "1", the observed R^2 which is 66%. It means warehousing cost account for much of the performance of profits to the three breweries under study. The F – statistic which is used to test for the overall significance of the estimated equation shows that all the explanatory variables are not equal to zero, under 1% and 5% significance levels. It means that the explanatory variables indeed affect the dependent variable. The result of the t – statistics indicates that dub (during variable for Bendel brewery) are individually significant using the rule of thumb (i.e "2"). This is because of the high absolute values of the t – statistics. As indicated earlier, a high value of the t – ration usually "2" or more indicates that the parameters in question are significantly different from zero, hence the associated independent variables (dnb, dg and dbb) actually influence the dependent variable (profit of Guinness, Nigeria Brewery and Bendel Brewery). From the coefficient of the independent variables, not all conformed to apriori expectation unlike the Dg and Dbb. A unit increase in Dbb will increase profit of Guinness by 1.41 units. By taking the individuality of each country or the cross sectional unit into consideration which suggests that

the intercept of the three breweries in question is different, could be due to special features. Like culture of the organisation, management style, distribution pattern, environment, etc. It means that the Guinness and Bendel Breweries loss more when they increase their cost of warehousing because a unit change in the variable D_g will lead to a loss of N1.41K as against N1.53K of D_{bb} (during for Bendel Brewery). A unit increase in cost of warehousing of Nigeria brewery will increase their profit by N1.99K. Clearly, high cost of warehousing reduces the profit of the breweries, so the breweries should try to find a way to reduce the cost of warehousing in order to increase their profit margin especially Bendel Brewery which ran at a loss.

Findings

- (1) Physical distribution operations and responsibilities enhance efficiency in the brewery industry. Cost of physical distribution help to determine brewery profitability.
- (2) Increased industrial concentration as a result of mergers and acquisition add to capital volume in the brewery industry.
- (3) The regression calculated indicated that high cost of warehousing reduces the profit of the breweries so the breweries should try to find a way to reduces the profit of the breweries so the margin especially Bendel Brewery which ran at losses between 2000 up till date.
- (4) The result for fixed effect model of time invariant result shows that the explanatory variable account for 71% of the systematic variation in the explained or dependent variable and only 29% is unexplained. This indicates that the model has a goodness of fit and also since the R^2 cannot be "1" the observed R^2 suggests that the regression lines fit the data very well. It shows that warehousing cost has effect on profits in the three breweries.
- (5) The coefficient of the result indicates that an increase in WC by one unit will increase the profit margin of Nigeria Brewery by 1.91 units with the D_w – statistic of 2.03. It

indicates that there is absence of serial auto correlation in the model. It shows that regressor account for 96% variable in the regress and (profit), while 0.4% is unaccounted for; the coefficient of the result indicate that an increase in “WC” by one unit will increase the profit margin of Bendel brewery by 0.42 units with the Dw-statistics of 2.09; it indicate that there is absence of serial auto correlation.

- (6) The intercept of the three breweries are different. This could be as a result of special features like culture, management style, leadership, distribution pattern of each brewery. This is however an indication that management is after the survival and profitability of the breweries studies.
- (7) The standard model in which it was assumed that the latent individual effect is a time-invariant random variable.

Conclusion

This study concluded that warehousing processes is very important in determining physical distribution efficiency in the breweries industry. Management of the breweries should not allow lapses affect warehousing. Emphasis should be placed on the objectives of the organisation especially to enforce effective warehousing at a reduced cost.

Recommendations

- (1) The management of the brewery could even engage the warehousing processes as contract. This would help in service delivery manners such contract should comprise committees both from the companies and contractors. This is the only way those contractors can be made to accept policies of the companies in an efficient manners.
- (2) Cost of warehousing should be bargained and we should also ensure that the cost of maintenance is at minimum level. Management should acquire resources, make efficient use of input, produce output, performing technical and administrative task as well as to invest in the organisation and satisfying the varying interest of staff and customers in the companies.

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