

Packaging Materials and Consumer Purchase Decision of Tea Products in Akwa Ibom State, Nigeria.

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ABSTRACT: The study was conducted to determine the relationship between packaging materials and consumer purchase decision of Tea Products-Milo, Bournvita and Ovaltine in Akwa Ibom State, Nigeria. The survey research design was used in the study. Data for the study were obtained through questionnaire administered to the respondents. A convenience sampling technique was used to select 280 respondents. Three hypotheses were formulated and tested at the 0.05 level of significance. Data obtained from the respondents were analyzed using descriptive statistics basically mean, standard deviation and skewness. The hypotheses were tested using simple linear regression. The findings of the study showed that glass, plastic (sachet) and metal (can) packages have significant positive relationship with consumer purchase decision of Tea Products-Milo, Bournvita and Ovaltine in Akwa Ibom State, Nigeria. The result indicates that plastic (sachet) package was more rated than other packaging materials. Based on the findings of the study, it was recommended that for the manufacturers of Tea products to solve the packaging materials problems they should ensure continuous improvement on the quality of their packaging materials-glass; plastic (sachet) and metal (can) to attract consumers' attention and patronage.

Keywords: Packaging material, glass, plastic (sachet), metal (can) and consumer purchase decision.

I. INTRODUCTION

The choice of packaging material by a firm for its product is very crucial for its success in the market. Packaging materials are types of container or wrapper used for a product. It includes plastic, paper, metal, glass, wood and so forth

(Attih, 2020). The type of material used by a firm to package its product plays an important role in influencing consumer purchase decision. Nowadays, various packaging materials are available for use by Tea manufacturing firms. The most common are glass, metal (can) and plastic (sachet).

Packaging material may be developed for different uses such as containment, preservation, protection, etc. It may also be developed to convey or position product in terms of quality or status. According to Lal, Yambrach and Mc Proud (2016), packaging material perceptions in different countries typically develop from a variety of factors, including climate, lifestyle and cultural acceptance with regard to a particular product.

With advanced in technology, creative and innovative ideas, different packaging materials are developed by firms to attract consumers' attention to their products. Tea Products-Milo, Bournvita and Ovaltine which are the subject matter of this study are considered as the popular brands within the product class. Consumers in Akwa Ibom State, Nigeria are very familiar with these products and they represent typical household beverage products which consumers purchased always. Hence, this study is basically to determine the relationship between packaging materials and consumer purchase decision of Tea Products-Milo, Bournvita and Ovaltine in Akwa Ibom State, Nigeria.

Objectives of the Study

The main objective of this study was to determine the relationship between packaging materials and consumer purchase decision of Tea Products-Milo, Bournvita and Ovaltine in Akwa Ibom State, Nigeria. The specific objectives were:

(i) To examine the relationship between glass package and consumer purchase decision of Tea Products-Milo, Bournvita and Ovaltine in Akwa Ibom State, Nigeria.

(ii) To determine the relationship between plastic (sachet) package and consumer purchase decision of Tea Products-Milo, Bournvita and Ovaltine in Akwa Ibom State, Nigeria.

(iii) To ascertain the relationship between metal (can) package and consumer purchase decision of Tea Products-Milo, Bournvita and Ovaltine in Akwa Ibom State, Nigeria.

Research Questions

Based on the objectives of the study, the following research questions were raised:

(i) What is the relationship between glass package and consumer purchase decision of Tea Products-Milo, Bournvita and Ovaltine in Akwa Ibom State, Nigeria?

(ii) To what extent does plastic (sachet) package influence consumer purchase decision of Tea Products-Milo, Bournvita and Ovaltine in Akwa Ibom State, Nigeria?

(iii) What is the relationship between metal (can) package and consumer purchase decision of Tea Products-Milo, Bournvita and Ovaltine in Akwa Ibom State, Nigeria?

Research Hypotheses

Based on the objectives of the study, the following hypotheses were formulated:

H₀₁: There is no significant relationship between glass package and consumer purchase decision of Tea Products-Milo, Bournvita and Ovaltine in Akwa Ibom State, Nigeria.

H₀₂: There is no significant relationship between plastic (sachet) package and consumer purchase decision of Tea Products-Milo, Bournvita and Ovaltine in Akwa Ibom State, Nigeria.

H₀₃: There is no significant relationship between metal (can) package and consumer purchase decision of Tea Products-Milo, Bournvita and Ovaltine in Akwa Ibom State, Nigeria.

Significance of the Study

The findings of this study will be useful to the manufacturers of Tea Products-Milo, Bournvita and Ovaltine. It will help the manufacturers to identify the type of packaging material consumers prefer most for their products. The findings will also add to the existing body of knowledge on packaging materials and consumer purchase decision. It will serve as a

reference material for researchers who want to carry out a study on similar or related topics.

Scope of the Study

The study was restricted to consumers of Tea Products-Milo, Bournvita and Ovaltine in Akwa Ibom State, Nigeria. It focused specifically on three (3) types of packaging materials-glass, plastic (sachet) and metal (can) as independent variables as well as consumer purchase decision as dependent variable. The unit of analysis was the consumers of Tea products in Akwa Ibom State, Nigeria.

II. LITERATURE REVIEW

This section covers the concept of packaging material, types of packaging materials, concept of purchase decision and empirical review of literature.

Concept of Packaging Material

Packaging material is the type of container and wrapper used for packing a product. Packaging material is material which is used for packing the final product. For example, glass, rubber (plastic), metal (can), etc. (www.igi.global.dictionary).

Types of Packaging Materials

The types of packaging materials include the following:

Glass: Hornsby (2015) describes glass as a hard, usually transparent substance used for making windows and bottles. Bottle is the type of glass which is used for food packaging (Shin and Selke, 2014). Basically, glass is produced from silica obtained from sand. The use of glass for product packaging is reducing over the decades, with glass losing market share to metal cans, with relative increase to plastics. Thus, it continues to perform an essential function in product packaging (Shin and Selke, 2014).

Metal: Metal is used in packaging in a variety of applications from racks systems to tuna cans. For food packaging, four types of metal are commonly used: steel, aluminum, tin and chromium (Shin and Selke, 2014). Steel and aluminum are commonly used in production of food cans and are the primary materials for metal packaging. Food cans are most often made of steel and beverage cans are usually produced from aluminum. Steel tends to oxidize when it is exposed to moisture and oxygen producing rust. Therefore, tin and chromium are used as protective layers for steel (Shin and Selke, 2014).

Plastics: Plastics are special group of polymers that can be formed into a wide variety of shapes using controlled heat and pressure at relatively low temperatures compared to metal and glass (Shin and Selke, 2014). Marsh and Bagus (2007) established that plastic materials are large organic molecules that can be formed into different useful products. Paine and Paine (2012) opined that the utilization of plastic materials in producing container or wrapper has been on the increased worldwide.

Concept of Consumer Purchase Decision

Kolter and Armstrong (2016) described consumer purchase decision as a buyer's decision-making stage wherein an individual decides to actually buy a product being considered. They explained that a purchase decision is the decision regarding a brand to be purchased. In the same vein, Djatmiko and Pradana (2015) stated that the purchase decision-making process is the stage wherein consumers actually buy the product. Consumer purchase decision refers to the final choice or selection made regarding what product to buy. The act of purchase is the last stage, which the consumer deciding on what to buy, where to buy, and how to buy (Preetham and Mohan, 2019).

Empirical Review of Literature

Wambugu (2014) conducted a study on consumers' attitude towards Milk packaging design in Nairobi, Kenya. The survey research design was used in the study. The sample size of 1000 consumers was selected using the random sampling technique. The data obtained for the study were analyzed using Multi Attitudes Model. The various packaging materials for which consumers' attitudes were examined included tetra pack, plastic bottles, foil paper fin pack, aseptic tetra pack and nylon pouch. The findings of the study revealed that plastic bottle packaging has the most favourable multi attribute attitude. It was concluded that packaging materials influence consumer purchase decision of food products.

Ounsuvan (2010) examined food packaging and its influence on elderly consumers' food choices in Bangkok, Thailand. The quantitative (questionnaire survey) and qualitative

(focus group) research design methods were used in the study. The sample size of 100 Thai elderly consumers was selected randomly for the study. The study was undertaken to find out the influence of packaging materials-plastic, glass, paper, and metal including tin, can, aluminum and foil packaging on consumers' food choices. The findings of the study revealed that plastic packaging was the most preferred packaging material followed by glass packaging; paper packaging, metal packaging including tin, can, aluminum and foil packaging were less preferable. It was concluded that packaging materials have great influence on consumers' choices of food products in Bangkok, Thailand.

III. METHODOLOGY

This section focuses on the methods and procedures used in collecting and analyzing data for the study. It covers the research design, population of the study, sample size/sampling technique, conceptual specification of model, method of data collection, instrument for data collection, reliability of instrument and methods of data analysis.

Research Design

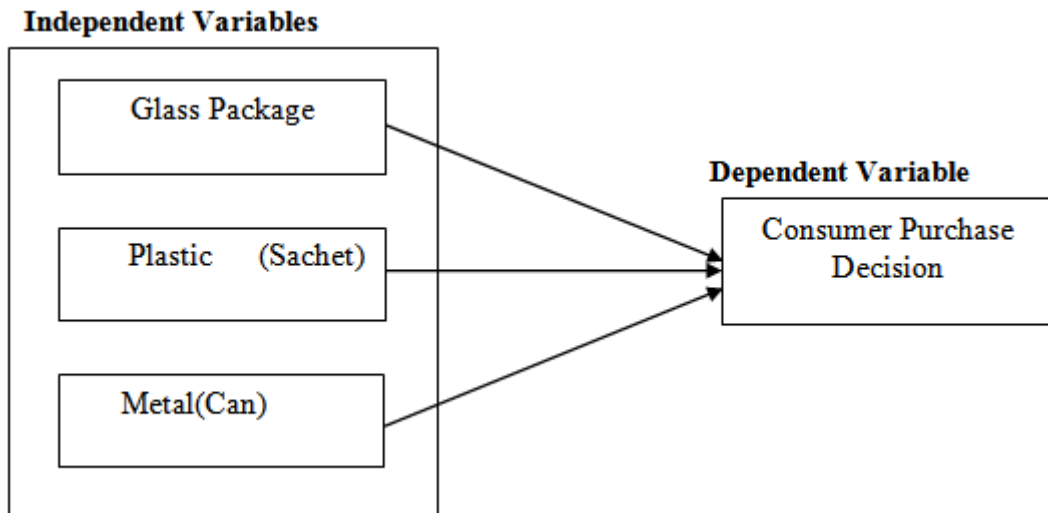
The survey research design was used in the study. It involved obtaining the primary data from the respondents through the use of a structured questionnaire.

Sample Size/Sampling Technique

The sample size of 280 consumers of Tea Products-Milo, Bournvita and Ovaltine in Akwa Ibom State, Nigeria was selected using convenience sampling technique.

Conceptual Specification of Model

Based on the research hypotheses, conceptual model was developed to determine the relationship between packaging materials as independent variables and consumer purchase decision as dependent variable. The model specifies that consumer purchase decision of Tea Products-Milo, Bournvita and Ovaltine is influenced by packaging materials-glass, plastic (sachet) and metal (can).



Source: Author’s Conceptual Model (2023).

Method of Data Collection

Data for this study were collected through primary source. The primary data were obtained through a structured questionnaire administered to respondents.

Instrument for Data Collection

The research instrument for this study was a structured questionnaire. The questionnaire contained items based on four point Likert scale ranging from strongly agree 4, agree 3, disagree 2 and strongly disagree 1.

Reliability of the Instrument

The reliability of the instrument was determined using Cronbach Alpha method and reliability coefficient of .749 for glass package,

.867 for plastic(sachet) package, .960 for metal (can) package and .94 for consumer purchase decision. The entire scale yielded reliability coefficient of .963. The reliability coefficients obtained for each of the sub-variables as well as the entire scale were greater than .70 indicating that the instrument is reliable.

Methods of Data Analysis

Data obtained from the respondents were analyzed using descriptive statistics basically mean, standard deviation and skewness. The hypotheses were tested using simple linear regression. All hypotheses were tested at the 0.05 level of significance with $P < 0.05$ indicating statistical significance. To enhance data analysis, Statistical Package for the Social Sciences (SPSS), Version 22.0 was used.

IV. DISCUSSION OF RESULTS

Table 1: Summary of the descriptive statistics for the research variables

Variables	No. of items	Mean score	Standard deviation	Skewness
Glass package	3	7.27	2.36	.12
Plastic(sachet) package	3	8.66	2.20	-.55
Can package	3	8.48	2.37	-.50
Consumer purchase decision	3	8.26	1.93	-.37

Result presented in Table 1 shows mean score of 7.27 for glass package, 8.66 for plastic (sachet) package and 8.48 for metal(can) package with standard deviation of 2.36, 2.20 and 2.37 respectively. This indicates that plastic(sachet) package was more rated than other product packaging variables while in terms of consistency of the scores, the score obtained on plastic package

were also found to be more consistent than that of glass and can package. The skewnesses obtained with the exception of glass package were all less than 0 indicating negatively skewed data while that of glass package was positively skewed. The relationship among the variables was examined and the result obtained is as presented in Table 2. Result shows that glass package ($r = .318, p < 0.01$),

plastic(sachet) package ($r = .195, p < .01$) and metal (can) package ($r = .209, p < .01$) all have significant positive relationship with consumer purchase decision. This result indicates that packaging as

measured by glass, plastic(sachet) and metal (can) packages is significantly related with consumer purchase decision.

Table 2: Summary of the relationship between glass package, plastic(sachet) package, metal (can) package and consumer purchase decision

Variables	1	2	3	4
Glass package	1			
Plastic(sachet) package	.054	1		
Metal (Can) package	.040	.016	1	
Consumer purchase decision	.318**	.195**	.209**	1

**Significant at 1% ($p < 0.01$), *Significant at 5% ($p < 0.05$)

Test of Hypotheses

H₀₁: There is no significant relationship between glass package and consumer purchase decision of

Tea Products-Milo, Bournvita and Ovaltine in Akwa Ibom State, Nigeria.

Table 3: Summary of simple linear regression results showing the relationship between glass package and consumer purchase decision of Tea Products-Milo, Bournvita and Ovaltine

Variables	β_{uns}	SE	β_s	t-calc.	P-value
Constant	6.386	.385		16.569	.000**
Glass package	.258	.050	.317	5.117	.000**
R^2	0.100				
R^2 adjusted	0.096				
F-calc.	26.183				
P-value	0.0000				
p-value for Breusch-Pagan-Godfrey	0.5929				

SE= standard error, β_{uns} = unstandardized coefficients, β_s = Standardized coefficients, **significant at 1% ($p < 0.01$).

Result in Table 3 shows that glass package ($\beta = .317, S E = 0.050, t\text{-calc.} = 5.117, P\text{-value} = 0.000, P\text{-value} < 0.01$) has positive significant relationship with consumer purchase decision of Tea Products-Milo, Bournvita and Ovaltine. The standardized beta of .317 indicates that if other variables are held constant, for every 1 unit improvement in glass package, consumer purchase decision of Tea Products-Milo, Bournvita and Ovaltine will improve by .317. This also implies that glass package has a positive relationship with consumer purchase decision of Tea Products-Milo, Bournvita and Ovaltine. Result also shows t-calculated of 5.117 with p-value of 0.000 is less

than 0.05 ($p < .05$) meaning that there is a significant relationship between glass package and consumer purchase decision of Tea Products-Milo, Bournvita and Ovaltine in Akwa Ibom State, Nigeria. Test of Heteroscedasticity was conducted using Breusch-Pagan-Godfrey test and p-value of .5929 was obtained which is greater than 0.05 ($p > 0.05$) indicating that the error term is homoscedastic.

H₀₂: There is no significant relationship between plastic (sachet) package and consumer purchase decision of Tea Products-Milo, Bournvita and Ovaltine in Akwa Ibom State, Nigeria.

Table 4: Summary of simple linear regression results showing the relationship between plastic(sachet) package and consumer purchase decision of Tea Products-Milo, Bournvita and Ovaltine

Variables	β_{uns}	SE	β_{s}	t-calc.	P-value
Constant	6.591	.498		13.239	.000
Plastic (sachet) package	.193	.056	.220	3.461	.001
R^2	0.049				
R^2 adjusted	0.044				
F-calc.	11.980				
P-value	0.001				
p-value for Breusch-Pagan-Godfrey	0.0552				

SE= standard error, β_{uns} = unstandardized coefficients, β_{s} = Standardized coefficients, **significant at 1% ($p < 0.01$).

Result in Table 4 reveals that plastic package ($\beta = .220$, S E = 0.056, t-calc. = 3.461, P-value = 0.001, P-value < 0.01) has positive significant relationship with consumer purchase decision of Tea Products-Milo, Bournvita and Ovaltine. The standardized beta of .220 was obtained which indicates that if other variables are held constant, for every 1 unit improvement in plastic (sachet) package of Tea Products-Milo, Bournvita and Ovaltine, consumer purchase decision of these products will increase by .220. Result also yielded t-calculated of 3.461 with p-value of 0.001 is less than 0.05 ($p < .05$) meaning

that there is a significant relationship between plastic(sachet) package and consumer purchase decision of Tea Products-Milo, Bournvita and Ovaltine in Akwa Ibom State, Nigeria. Test of Heteroscedasticity was conducted using Breusch-Pagan-Godfrey test and p-value of 0.0552 was obtained which is greater than 0.05 ($p > 0.05$) indicating that the error term is homoscedastic.

H_{03} : There is no significant relationship between metal (can) package and consumer purchase decision of Tea Products-Milo, Bournvita and Ovaltine in Akwa Ibom State, Nigeria.

Table 5: Summary of simple linear regression results showing the relationship between metal (can) package and consumer purchase decision of Tea Products-Milo, Bournvita and Ovaltine

Variables	β_{uns}	SE	β_{s}	t-calc.	P-value
Constant	6.469	.452		14.327	.000**
can package	.211	.051	.260	4.120	.000**
R^2	0.067				
R^2 adjusted	0.063				
F-calc.	16.973				
P-value	0.000				
p-value for Breusch-Pagan-Godfrey	0.8672				

SE= standard error, β_{uns} = unstandardized coefficients, β_{s} = Standardized coefficients, **significant at 1% ($p < 0.01$).

Result in Table 5 shows that can package ($\beta = .260$, S E = 0.051, t-calc. = 4.120, P-value = 0.000, P-value < 0.01) has positive significant relationship with consumer purchase decision of Tea Products-Milo, Bournvita and Ovaltine. The

standardized beta of .260 was obtained which indicates that if other variables are held constant, for every 1 unit improvement in metal (can) package of Tea Products-Milo, Bournvita and Ovaltine, consumer purchase decision of these

products will increase by .260. Result also reveals t-calculated of 4.120 with p-value of 0.000 which is less than 0.05 ($p < .05$) meaning that there is a significant relationship between metal (can) package and consumer purchase decision of Tea Products-Milo, Bournvita and Ovaltine in Akwa Ibom State, Nigeria. Test of Heteroscedasticity was conducted using Breusch-Pagan-Godfrey test and p-value of 0.8672 was obtained which is greater than 0.05 ($p > 0.05$) indicating that the error term is homoscedastic.

V. CONCLUSION AND RECOMMENDATION

The study examined the relationship between packaging materials-glass; plastic (sachet), metal (can) and consumer purchase decision of Tea products-Milo, Bournvita and Ovaltine in Akwa Ibom State, Nigeria. The results clearly showed that glass, plastic (sachet) and metal (can) packages have significant positive relationship with consumer purchase decision of Tea Products-Milo, Bournvita and Ovaltine in Akwa Ibom State, Nigeria. The result indicates that plastic (sachet) package was more rated than other packaging materials. Therefore, it is concluded that different packaging materials influenced consumers' purchase decision of Tea Products. Based on the findings of the study, it was recommended that manufacturers of Tea Products should ensure continuous improvement on the quality of their packaging materials-glass; plastic (sachet) and metal (can) to attract consumers' attention and patronage.

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