

Influence of Nutritional Labelled Baby Food on Consumers Buying Behavior in Anambra State

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Abstract

Over the years there has been an increase in diet related problems, hence the use of nutritious label to market baby food. Nutritional label provides consumer with information that can help them make informed and healthier food decision. In Anambra consumers are increasingly aware of nutritional diets that promote good health for their children. This study adopts empirical and theoretical literature reviews in determining the influence of label on baby food consumers in Anambra State. Survey design was adopted; the study population comprises customers of Roban Stores Awka, Nkwo Market Nnewi and Onitsha Main Market. Stratified sampling method was adopted; sample of 231 respondents was statistically drawn. Questionnaire was the research instrument. Important objectives of this study is to determine the extend healthcare and quality claims influence consumer buying behaviour and express them as a proportion of Anambra population. The study also explores the relationship between demographics such as age, gender, education, and status with the results of consumer preferences for healthy foods. The internal consistency of the instrument was tested using crombach alpha coefficient test. The hypotheses were tested using multiple regressions. The study findings revealed that food safety, country of origin and product quality significantly influences consumer buying behaviour. It is recommended that consumers of baby food should focus more on reading nutritional label contents before buying. While manufacturers of baby food should state clearly without ambiguity on label, the quality of nutrients to be consumed at any point in time. Government should regulate the labeling of nutrition facts and food claims for infants.

I. Introduction

Food labels are of tremendous importance to the consumers, they provides them a means of evaluating the food before purchase, while to the firm producing and selling the product, a means of communicating to the potential consumers the attributes and qualities of the product and to the regulatory bodies, a means of ensuring that food produced and sold meet required standards and a means of protecting the interest of the general public, (Osei, Lawer and Aidoo, 2012). Food label can be defined as information provided on a food package indicating the various nutrients, calories and additives present in the food, (Hong, Wang, Liu and Chen, 2011). Despite the benefits of food labels, there have been many reported instances where non-certified, expired, illegal or fake food products are sold to the public. Cases in point are sale of uncertified

sachet water, the sale of expired canned tomatoes and frozen chickens, and the sale of uncertified imported food products on the Nigerian market (Nigerian Daily Trust.Com 2021).

Many manufacturers in Nigeria do not appreciate the importance of nutrition labelling. With the rise of problems and diseases associated with poor eating habits, people are increasingly reading the information printed on food labels, (Nation Nigerian newspaper 2018). There is growing concern that promotion of breast-milk substitutes for infants and young children has been undermining progress in optimal infant and young child feeding. This concern was recognized by the World Health Assembly (WHA) in 2010, when it urged all Member States “to end inappropriate promotion of food for infants and young children”.

The use of over bloated words, poor labelling strategy and symbols on products create perception in the mind of consumers, hence distrusting the variety of nutrition pack and labeling systems in use, while lack of knowledge or inability to read, understand and evaluate product health benefit stated on label often lead to confusion during buying decision (Rao & Rao, 2009).

Objectives of the Study

1. To determine the extend food safety influence consumer buying behaviour.
2. To determine extent country of origin influence consumer buying behaviour.
3. To determine extend healthcare claims influence consumer buying behaviour.
4. To determine the extent price influence consumer buying behaviour.
5. To determine the extent quality claims influence consumer buying behaviour.

Statement of Hypotheses

The study was based on the following hypotheses:

- H1:** Food safety has significant influence on consumer buying behaviour.
H2: Country of origin has significant influence on consumer buying behaviour.
H3: Healthcare has significant influence on consumer buying behaviour.
H4: Price has significant influence on consumer buying behaviour.
H5: Product quality claim has significant influence on consumer buying behavior.

Scope of the Study

This study focus on the extent nutritional label influences consumers buying of nutritional labelled baby food. Shoppers of baby food formula in Roban stores Awka, Nkwo Nnewi market and Onitsha main Market were used in this study. The study clearly discusses how labelled information, pictures and jar contents assist consumers (parents) in making nutritional baby food buying decisions.

II. Literature Review

Concept of Food Label

Food and nutrition labels are integral part of the overall objective of improving the well-being of consumers. In larger societal context, where malnutrition exists, some policies aim to improve the nutritional status of all consumers, with particular emphasis on the most vulnerable groups, i.e., children. Food label aims to establishment a viable system for guiding, coordinating and identifying food with the right content, or diet for body metabolism; (Gobotswang, 2007) noted that consumer’s behaviour in

response to reading food labels will depend upon the reference points from which they came and the values they attach to baby food purchasing.

Moreover, with stricter regulations on label, baby food producers are giving opportunity to market their nutrition contents with clear, well substantiated health claims, which could be used on their product package (Banterle,& Stranieri, 2008). Before a consumer decides to purchase, he or she has identified an unfulfilled need. To fulfill these needs, consumers will search for information about possible solutions. After evaluating this information, consumers then decide to purchase. This is followed by a post-purchase evaluation that incorporates their experience to ensure a quicker decision process in the future (Allen, Wayne, John and John, 2001).

Labels are one of the most important features of product packaging; they are designed to communicate a message, (Héroux, 2008). Label is one of the main elements of the product appearance and as such is an important source of information since consumers rely heavily on labels for product information and also packaging is a significant marketing expenditure larger than advertising itself, (Pires & Ricardpo, 2008).

The level and extent of information required by consumers before purchase is often driven by specific dietary needs or underlying health conditions (Mori, 2010). The list of consideration before and during purchase decision are endless, among which include;

Food Safety

Label help consumers determine whether food products are safe, hygienic, of high quality, country of origin traceability (i.e. the origin, production process and product information of food), quality assurance, and use-by/best-before dates. The latter are seen as good indicators of freshness, shelf-life and general food safety, (Philip 2010). Most consumers are willing to pay more for food label. They believed that label denote food safety and quality (Umberger, 2013).

Country of Origin

Country of origin labelling is basically for the traceability of food products and also to fulfill the demand of mandatory Labelling. There is generally the belief that one`s own country or region produces safer and better food than other countries or regions (Philip. 2010).

Product Quality

When consumers choose among competing products, they are faced with quality and product performance uncertainty. Package is one of the main elements of the product appearance and as such is an important source of information since consumers rely heavily on labels for product information and also packaging is a significant marketing expenditure larger than advertising itself, (Pires & Ricardo, 2008).

However (Padel & Foster, 2005), concluded that “price remains a barrier for many consumers, but it is possible that its significance could be diminished if consumers were made more aware of the reasons for the higher price, and convinced that organic food is a value for money choice despite the premium”.

Although consumers look for date on labels, there is evidence that many misunderstood what terms like “best before” and “use by” actually represent (Mori, 2010).

Proposed Conceptual Model (Mohd Shaharudin et al, 2011)

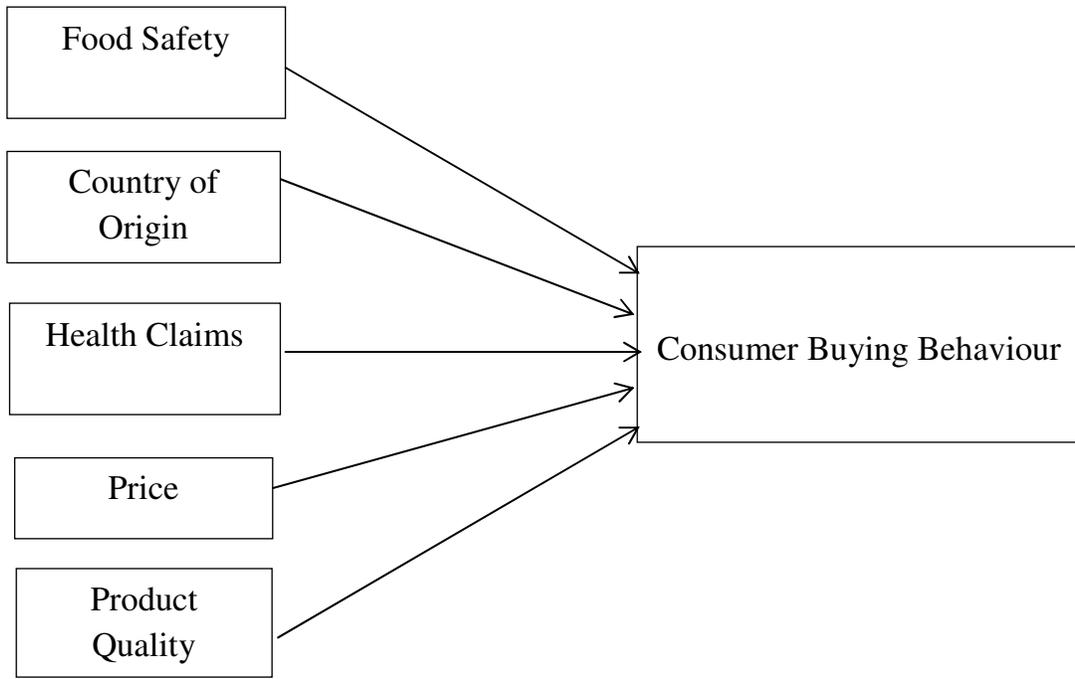


Fig. 1: Proposed Conceptual Model

Based on the literature reviewed and the hypothesis proposed, the conceptual model of this study was developed. The model is based on the work of (Shaharudin, Ismail, and Omar 2011). Previous studies supply evidence that consumers’ buying behavior could be influenced by external factors such as label format and content, as well as by internal factors such as nutritious knowledge to process nutrition information (Mizerski, 2012).

III.METHODOLOGY

Research Design

Survey design is adopted in carrying out this work. It involves asking questions, gathering, collecting and analyzing the data collected from respondents. The study focused on consumers choice of nutrition baby food through label.

Population of Study

The study was conducted primarily among baby food consumers. The majority of the participants are (parents) nursing mothers in Anambra State Nigeria. The State has estimated population of 301,657 as of (2006, Nigerian census). Samples are drawn from respondents’ in Roban stores, Nkwo Nnewi Market and Onitsha main market Anambra State.

Sample Size and Sampling Technique

Stratified sampling procedure is used in this research; the research is carried out in Awka, Nnewi and Onitsha main market of the Anambra. Participants were randomly selected, shop owners and managers consent were sought thereby avoiding negative reactions. Consumers are approached at random after checkout and were politely ask if they purchased any labelled packaged baby (formula) food and if they are willing to participate in this study. At recruitment, shoppers are told that there was no right or wrong answers in the task, and that the study aim at exploring how people make their baby food choices based on label. Since the population size of this study is not known, considering the fact that it is infinite population; to determine the sample size for unknown population among consumer of nutritional labelled food, this formula below is used.

$$n = \frac{Z^2(p)(1-P)}{c^2}$$

Where

n = Sample Size ()?

Z = the standard deviation given at a correspondence confidence level (at 95% confidence level is 1.96) from standard normal distribution table).

e or c = sampling error at 5%

p= maximum variability of the population

P = 90% (0.90) is assumed

(1-P) = (1-0.8) =0.20

c = 0.05 since we have chosen 95% as confidence limit

$$n = \frac{(1.96)^2 \times (0.8)(0.2)}{0.05^2} = 245.86 \text{ approximately}$$

= 246 shoppers

Source: (Cochran, 1977)

However, since the sample size is 246 customers, 82 questionnaires were distributed to each of the three groups that make up the respondents.

Method of Data Analysis

Data collected were presented in percentage and analyzed using descriptive statistics, inferential statistics, cross-tabulation and frequency distribution. Descriptive statistics utilized mean and frequencies to summarize the data. The study also used multiple regressions to make conclusion on data collected. The multiple regression models were computed on statistical Package for Social Science (SPSS) 20.0 spreadsheet using the formula:

$$Y = a+b_1*x_1+b_2*x_2+b_3*x_3+b_4*x_4+b_5*x_5$$

Where: a+b₁safty x₁+b₂country of origin x₂+b₃healthclaim x₃+b₄price x₄+b₅quality x₅+e_i

CoBB = Consumer buying behaviour

a=y intercept

b=slope of the line

Fs=Food safety
 Co=Country of origin
 Hc=Healthcare claims
 Pr=Product price
 PQ=Product Quality
 Ei=error margin

IV. Respondents Demographic Information

The demographic factors analyzed include respondents shopping location, gender, age, marital status and consumer’s buying behaviour of nutritional labelled baby foods in Anambra State.

Respondents /Shoppers per market location

The research sought to establish the Shoppers per market location. The results are shown in table 4.1.

Table 1: Summary of Questionnaire Distributed to Shoppers per market location

| Organization | Frequency | Retrieved | Valid Percentage | Cumulative Percentage |
|---------------------|------------------|------------------|-------------------------|------------------------------|
| Roban stores Awka | 82 | 78 | 33.8% | 33.8 |
| Nkwo Market Nnewi | 82 | 73 | 31.6% | 65.4 |
| Onitsha Main Market | 82 | 80 | 34.6% | 100 |
| Total | 246 | 231 | 100% | |

Source: Field Survey, 2021

Table 1 shows that total of 246 questionnaires were distributed to respondents in the three cities; each location got 82 questionnaires, while 231 (93.9%) were retrieved. A breakdown shows that 78(33.8%) questionnaires were validly retrieved from **Roban Stores Awka**, 73(31.6%) from **Nkwo Market Nnewi** while 80(34.6%) were retrieved from **Onitsha Main Market** customers respectively.

Descriptive Statistics

This section presents the findings based on the objectives of this study. The study used descriptive statistics in the analysis and discussion.

Table 2: Descriptive Statistics

| Variables | N | Mean | Std. Deviation |
|----------------------|----------|-------------|-----------------------|
| Food safety 1 | 231 | 3.41 | .894 |
| Food safety 2 | 231 | 3.11 | 1.139 |
| Food safety 3 | 231 | 3.29 | 1.146 |
| Food safety 4 | 231 | 3.19 | .912 |
| Country of origin 1 | 231 | 2.79 | 1.081 |
| Country of origin 2 | 231 | 3.22 | 1.189 |
| Country of origin 3 | 231 | 3.19 | .811 |
| Country of origin 4 | 231 | 3.48 | .860 |
| Health care claims 1 | 231 | 3.82 | .889 |
| Health care claims 2 | 231 | 4.02 | .783 |
| Health care claims 3 | 231 | 1.160 | .793 |
| Health care claims 4 | 231 | 3.67 | 1.197 |
| Product price 1 | 231 | 3.66 | .718 |
| Product price 2 | 231 | 3.47 | 1.215 |
| Product price 3 | 231 | 3.32 | .915 |
| Product price 4 | 231 | 3.48 | 1.325 |
| Quality claims 1 | 231 | 3.65 | .799 |
| Quality claims 2 | 231 | 3.15 | .840 |
| Quality claims 3 | 231 | 3.55 | .924 |
| Quality claims 4 | 231 | 3.16 | 1.267 |
| Valid N list wise | 231 | | |

Source: SPSS 20

The table above shows the descriptive statistics, mean and standard deviations of the items in the questionnaire. The table reveals that most of the items have standard deviation greater than one, except food safety 1 and 4; country of origin 3; health care claims 1, 2 and 3; product price; quality claims 2 and 3. Standard deviation above one shows high variations in response; except for 11 items with high variation, other items have standard variation less than one and this shows respondents' agreement with the outcome of the research.

Table 3: Summary Descriptive Statistics for Research Variables

| Category | Aggregate Mean | Standard Deviation |
|---|----------------|--------------------|
| Influence of Food Safety on consumer buying behavior | 3.41 | 0.894 |
| Influence of Country of Origin on consumer buying behavior | 3.48 | 0.860 |
| Influence of Health care claims on consumer buying behavior | 4.02 | 0.783 |
| Influence of Price on consumer buying behavior | 3.66 | 0.718 |
| Influence of Quality claims on consumer buying behavior | 3.65 | 0.799 |

From the results, Health care claims have the highest aggregate mean value 4.02, which implies that respondents were more concerned or influenced with health claims. Price influenced consumer buying behaviour by a mean of 3.66, while quality claims influenced the respondents buying decision by a mean of 3.65. Country of Origin influenced buying behaviour as shown by a mean of 3.48. Food Safety influence buying behaviour as shown by a mean of 3.41. Hence the mean scores are above 3.4, this implies that Health care claims, Price, Quality Claims, Country of Origin, and Food Safety on label influences consumers buying behavior of nutritious baby food. This implies that labelling attributes guide consumer buying hence they are importance.

The findings show that consumers mostly check the health claims on the labelled baby food and other independent variables before buying. Most of the respondents strongly agreed that good baby food must have label reflecting healthiness of the product.

Hypothesis One: Food Safety label on Baby food has Significant Influence on Consumer Buying Behaviour.

Based on our findings we accepted the alternate hypothesis that food safety has significant influence on consumer purchase of nutritious labelled baby food in Anambra State. Our study outcome is in line with the work of National Institute of Nutrition (2006) on households. The study is related to food safety, it revealed that 60 per cent of the households buy packed nutritious baby food and other 20 per cent of households check the food labels, for ingredient content and their safe for consumption.

Product price and quality claims were second and third respectively in the degree of influence they have on consumer buying behaviour. Respondents stated that country of origin help them make volume judgments which influences their purchasing choice when the quality of the product is hard to determine. Therefore, the country of origin encourages the consumer to think of the product as having better quality, health benefit and price efficiency.

Hypothesis Two: Country of Origin label on Baby Food Has Significant Influence on Consumer Buying Behaviour.

Based on the outcome of this study, the findings accept the alternate hypothesis which stated that country of origin label on baby food has significant influence on consumer behaviour. This finding is consistent with work of (Wier, Doherty, Andersen, and Millock, 2008) in their study they found in their survey of consumers in Britain and Denmark that 72% of all respondents would prefer to buy domestic baby food or fruits and vegetables rather than organic foreign produce.

Moreover the study outcome is in line with the Research conducted by (Umberger, 2003) he reveals that the surveyed consumers in Chicago and Denver were willing to pay a premium for Country-of-Origin Labelling. This reflects a common belief that local produce is not only safer, better tasting, and of superior quality, but that it is also easier to verify its origin (Philip, 2010).

Hypothesis Three: Healthcare claim on Baby Food has Significant Influence on Consumer Buying Behaviour.

The study findings accepted the Alternate hypothesis that health care claims have significant influence on consumer buying behavior of nutritious labelled baby food in Anambra. Our finding is consistent with the work of (Magistris, Gracia, & Barreiro, 2010) aimed at testing a theoretical model explaining why consumers follow healthy eating habits and in particular to identify how the health claims on nutritional labels use influences this behavioral pattern. The results indicated that the individuals who utilized more often nutritional labels follow healthier eating habits, such as avoiding a lower intake of salt and avoiding the fat intake. According to them, label use, health knowledge, health status and being aware of the diet-health relation were found significant.

Hypothesis Four: Price of Baby Food Has Significant Influence on Consumer Buying Behaviour.

Based on the study findings we accepted that product price has significant influence on consumer purchase of nutrition labelled baby food in Anambra State. Our research findings agree with (Padel & Foster, 2005) in their work, they concluded that price remains a barrier for many consumers, that its significance could be diminished if consumers were made more aware of the reasons for the higher price, and convinced that nutritious label is a value for money despite the premium” when making baby food choices.

Furthermore, Charles, (2002) released in his study that 70% of purchasing decision is based on price. For the lowest income group, baby food price was the major determining factor of the types of foods they buy (Mahgoub, Lesoli & Gobotswang, 2007).

Hypothesis Five: Quality claims on Baby food Has Significant Influence on Consumers Buying Behaviour. Finally, we also accept that baby product quality claims significantly influence consumers' purchase of nutrition labelled baby food in Anambra State.

This findings is in line with a research conducted by (chakraborty, 2017), their outcome indicate that an individual will be more attracted towards a product if he/she is more aware of its price, brand, features, and quality.

Moreover, (Srivastava, Dash & Mookerjee, 2016), in their study indicate that it is difficult for parents to judge the quality or results of some nutritious baby products as they are consumed by babies or toddlers who cannot express their opinion about the product .Making purchase decision on behalf of child could be very stressful for the parents as they need to anticipate child's needs (Way & Meyers, 2013).

V. Summary of Findings

The majority of respondents are female, they fall within age range of 36-45 most of them are married, had higher education, some are civil servants. The study shows that nutrition labelled baby food influence buying behaviour on the following basis:

1. **Food safety:** Strongly Influence the consumption of baby food. While
 - Sophisticated labelled claims on package, attracts consumers purchase of baby food.
 - Company brand label attract consumers of baby food.

2. **Product Quality:** Consumers in Anambra agreed that;
 - High Price is perceived as sign of high quality vice versa.
 - They agree that quality/standard labelled baby food Product should have design Specification.

3. **Health Benefit:** Majority of respondents agreed that accurately labelled baby food with right nutrients is important for healthy baby.
 - They see labelled baby food (infant formula) products as purer, healthier and better tasting.

4. **Product price:** Majority of the respondents agreed;
 - That healthier, baby diet cost more than substitutes;
 - The agreed that expensive baby food gives them confidence that they are buying the right baby food.
 - While cheap nutritional baby food serves as good substitute to low income earners.

5. **Finally on product quality:** Most respondents strongly agreed that;
 - Although not all consumers read and understand labelled information on baby food.
 - Those that read and understand agree that it help them in making critical quality buying decision.

5.2 Conclusion

This study provided empirical support that use of nutrition claims on food label for babies, raises crucial public health concerns. In fact food safety, product quality, health benefit, price and product quality have significance influence on consumer buying behaviour.

The study found that consumers especially mothers with poor nutrition knowledge may have inaccurate attitudes and expectations toward health claims, thus they may have lower buying intentions for labelled nutritional baby food. This may lead them to choose less healthy foods, resulting in their child malnutrition.

The major findings of the study indicated that the overall set of independent variables strongly influence dependent variable. These analyses make it possible to discover consumer decision-making rules.

Using independent variables as predictors of consumer buying behaviour in Anambra, we accepted the alternate hypothesis “Nutritional labelled baby food significantly influence consumer buying behavior”.

5.3 Recommendation

5.3.1 Recommendations

In line with the findings, this study recommends that:

1. Consumers of baby food should focus more on reading nutritional label contents before purchase.
2. The study showed that consumers look at price first prior to label, thus the study recommends that manufactures should do more research to understand the influence of price on consumer behavior.
3. Consumers need to read other sub labelled word such as:
 - ❖ Recommended age of introduction of baby food e.g. suitable for baby six months of age.
 - ❖ A statement that the product is “suitable for all ages”;
 - ❖ Nutrition and health claims that are not permitted by national legislation;
 - ❖ Avoid or seek interpretation of labelled information in the appropriate language of the country in which the product is sold;
 - ❖ Use of images of infants reflecting stages or “growth milestones”, which may be reached before six months (e.g. when baby begins to sit up);
4. Producers and marketers of baby food should segment their markets along age and income in order to be guided on subset to serve satisfactorily and profitably.
5. Manufacturers of baby food should state clearly without ambiguity on label, the quantity of nutrients to be consumed at any point in time
6. Control bodies in Nigeria, such as Standard organization of Nigeria (SON), National agency for food drug administration and control (NAFDAC) and other international organizations like world health organization (WHO) and United nations international children’s emergency fund care fund (UNICEF) should be more proactive in enacting and strengthening laws regulating nutritional baby food label.

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