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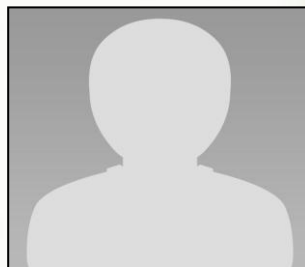
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**“An Appraisal of the Role of Retail Packaging in  
Consumer Buying Behaviour: A Case Study of Dairy  
Powder”**



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## Abstract

The production and packaging of goods in the most efficient and economical manner has continued to be the only reliable option for development, growth and survival both at micro and macro levels. Food safety has also become one of the main priorities for consumers, manufacturers and government. But what do these different parties expect? And what influence do production conditions and retail packaging have on the quality of dairy powder. The roles of Production Management cannot be under estimated in retail packaging, especially for dairy powder. Presently, the two most common packaging methods for dairy powder in Nigeria are pouch/sachet and aluminium cans. The study identified the key drivers, values and belief and attitudes of consumer behaviour in relation to packaging of dairy powder, and examines the retail environment into the near future. In the analysis of data collected during the study, percentages and chi-square statistics with a five percent level of significance are used as the tool to analyze data generated from the survey. The results obtained from the research questions and test hypotheses clearly showed that better dairy packaging does indeed positively impact product valuation. Also appealing dairy packaging led to increased selling price and choice/purchase price. The use of pouch/sachet for displaying dairy products in the retail environment is increasing, and properly designed pouch/sachet enclosures can be moisture resistant, increased shelf life and display friendly.

**Keywords:** *Packaging, Dairy powder, Pouch/Sachet, Aluminium cans, Consumer.*

## Introduction

The consumption of dairy powder has greatly increased among Nigerians over the past years as a result of its benefits to human health. Dairy powder can be packed in various sizes in metal can, paper-based container and flexible packaging.

According to Flexographic Technical Association, 2008, packagings of products can illicit positive consumer effects, or positive feelings about the product or brand. They further stressed that purchases are made as a result of cognition, or thought/reasoning and/or positive effect for the brand or product, which can be a result of effective packaging. Also, many individuals, for example, are interested in a health conscious diet and may purchase a product; they might not otherwise, if the packaging reflected a healthy lifestyle. The feelings, or effect here, are associative in nature. The consumer is striving for a healthy lifestyle, so they associate with the packaging, therefore their purchase is perceived as validated.

The American Marketing Association defined consumer behaviour as “the dynamic interaction of effect (feelings) and cognition (thought), behaviour and the environment, by which human beings conduct, and exchange aspects of their live”(Helium Incorporation 2002). Therefore, in order for consumer behaviour to occur (purchases), there should be stimuli to prompt the action to purchase. Often this stimulus comes in the form of packaging. Additionally, packaging may be teamed with promotions, internet marketing and the like in attempts to creating brand recognition to develop validation of purchase (Flexographic Technical Association, 2008).

Product design has been recognized as an opportunity for differential advantage in the market place and the appearance of a product influence consumer product choice in several ways (Marill 2004)

The role of packaging, as with any marketing medium, is to help move the consumer further along the buying cycle it may simply raise awareness, help us to research alternatives, to form a preferences etc (Maundrill 2004).

### **Statement Of The Problem**

Consumers of dairy powder industries are often mature and always competitive, such that a number of assumptions have been made as to why some consumers give preference to some packaged dairy powder.

Ignorantly, some companies spend a lot of money on advertising than they do on packaging but yet failed to meet consumers' choice/preference. Even when packaging is considered very important, poor packaging or wrong packaging in terms of size, type and method could be the problem. Also, the emotional and functional benefits of packaging of dairy powder for consumption may not be fully understood by consumers and producers.

Another problem is conflict of interest between the producers and consumers as a result of lack of understanding on the factors influencing the market for packed dairy powder for retail purposes. Such factors include legislation, environmental pressures, packaging innovation, consumer preference etc. However, a global approach to the distribution of dairy powder would allow us to determine the best balance between different constraints which affect choice of packaging by different consumers.

The above stated problems if not adequately and properly addressed can inhibit poverty alleviation and income redistribution in a developing economy like Nigeria.

### **Purpose Of The Study**

It is in recognition of the fact that the manufacturers of dairy powder must grapple with difficult problems of knowing how much and how important it is to invest in packaging and the best way to go about making that investment to have an edge over there competitors that forms the basis behind this study. Also of importance is for the consumers to have better understanding on the role of packaging of dairy powder as it affects various technical, emotional, beliefs values and producers' marketing strategy before making a choice.

The manufacturer shall have good understanding of the consumer trends and purchase behaviour in relation to packaging of dairy powder.

The study will help in promoting good understanding of the changing retail environment and developments in dairy powder packaging innovations and technologies, both internationally and domestically.

The study will assist managers in selecting package designs for achieving desired consumer responses.

It will help product development managers in dairy powder industries in optimizing the appearance of their products.

It will also assist in identifying the packed dairy powder mostly consumed in Lagos environment.

The overall objective of this study is: to investigate the driver, values, belief and attitudes of consumer behaviour in relation to packaging of dairy powder, and examine the retail environment into the near future.

### **Research Questions**

In this study, the following research questions were answered.

1. How preferable is milk powder to any other forms of milk by Nigerians?
2. Does packaging influence consumers' willingness-to-pay?
3. Does consumer purchase consideration and choice influenced by packaging qualities?
4. What role is cost of purchase play in consumers' choice of packed dairy powder?
5. To what extent is environmental impact of packaging of dairy powder influence buying behaviour?
6. Does packaging impact consumers' brand choice?
7. Do different kinds of packaging evoke different reactions in consumers?
8. Are the external manifestations of these reactions in terms of consumers' purchasing behaviour?

### **Literature Review**

Self-service retail that was introduced in the 1950s, made the role of packaging to become very important since it got the role of providing mass-produced food at reasonable prices (Alerstam, Bovin & Jonson, 1995). The new food products also placed new demands on packaging.

Another role of the package was to be the bearer of information to consumers, and the package became essential in the product-selling process when self-service stores were introduced (Olsson & Gyorei 2002; Olsmats, 2002)

The development towards self-service store, more exports, increased competition and new food processing technologies placed new demands on food packaging, and in today's society packaging has become pervasive and essential (Robertson, 1993) and a strategic business tool (Olsmats, 2002)

The packaging industries in Nigeria developed very quickly after the independence and became successful. Notable Packaging Industries in Nigeria include First Aluminium, Wahum Packaging, Flexible Packaging, Decent Polybag, Greif, Tetra Pack West Africa etc for producing cans, glass, plastic containers, carton, nylon etc. But most pouch/sachets and Tetra Park are still being imported for quality reasons.

### **Food packaging and innovations**

Innovations in the food industry are combined with social and cultural innovations, and the objective is "to produce food that satisfies the nutritional, personal and social needs and wants of all communities" (Earle 1997). New food processing and packaging technologies have facilitated the distribution of food products over geographical areas without unacceptable loss of quality over longer time periods and regardless of economic constraints (Sonneveld, 2000). The most important function of a food package is that of preservation for food safety.

The development of new food preservation technologies together with packaging technology has been going on for several years (Sonneveld, 2000). Furthermore, a package is part of the

product throughout the entire supply chain, which means that package design will also influence the efficiency of the entire chain in terms of function, features, information and cost aspects (Olsson & Gyorei, 2002). However, many people see packages just as a necessary evil and an unnecessary cost.

These viewpoints on packaging arise from a limited knowledge or limited consideration of what functions a package has to perform (Robertson, 1990). Even though packages are almost taken for granted, food-packaging development should be viewed as driven by consumer desires, distribution needs and new materials, as well as the functional, industrial or legislative developments that continuously impose new demands on the development of packaging materials and packaging design (Gerding, Rijk, Jettan, Van Den Berg, De Kruijff, p 156). Poorly designed packages as an outcome of disregarding the role of the package will result in frustrated users; thus packaging development has to be “consumer driven, distribution driven and technology driven” as claimed by Coles and Beharrell (1990, p24).

Families and individuals are changing their life styles and are increasingly buying prepared food which started with cans and continued with frozen, and more recently, chilled food (Robertson, 1990).

The development of new preservation technologies resulted in new, more convenient pre-packed products needing controlled storage and distribution and offering a choice (Louis, 1990). The shift from small-scale to large-scale processing required a packaging development driven by the need for distribution to customers and consumers. The shift from a regulated economy over to a competitive economy and the appearance of global products required packages that helped to differentiate and market the products (SOU, 1997). The development from unpackaged to packaged food accelerated with the introduction of self-service stores followed by a trend towards environmental consciousness, i.e. less or minimally packed products and/or recycling (Gerding et al, 1996)

The importance of distribution and storage is seen as a consequence of introducing dairy foods requiring a defined temperature all the way to the end user. Consequently, adequate package was required. In the initial stages of dairy food, the demands on packaging were set high due to lack of experience. Akerlund & Rausing and Esselte Pac were the two innovators in food packaging, with the Espresso and Ving-Hermetet systems (machines for erecting, filling and sealing the cartons) introduced at the beginning of the 1950s (A &R Information Department, 1993; Stark, 1999). Before this development, the products were put into cellophane pouches manually, then into outer cartons and finally outer wraps were applied. Leakage was a major problem for some products, e.g. berries in sugar, and leaking packages were seen as one of the major issues for some food packaging. The introduction of dairy food confirms that a new technology may drive the development of new packaging due to new requirements being placed on packages from a product and a distribution perspective.

A major breakthrough came with plastics and the polyethylene extrusion coating of cartons in the 1950s. Polyethylene can be heat-sealed, which is another advantage. A & R was the first company in the world to industrially master the extrusion coating technology, which came in handy for cartons not only for dairy powder, but also for liquids and became one of the prerequisites for Tetra Pak's success internationally (Stark, 1999; Ready meals)

## Dairy Packaging

Dairy packaging requires special care and attention. Different dairy products have different packaging options. But one important factor to consider is to maintain the freshness of the product. Packaging manufacturers and suppliers have come up with wide range of films, bags, laminates and equipment for packaging bulk dairy products, as well as, consumer portioned items, by considering such factors like protecting the flavours and textures throughout display and distribution.

## Types Of Dairy Products

Dairy products available locally in Nigeria are as follows:

- Milk: Powdered and liquid
- Fermented Milk
- Whey based drinks
- Curds
- Cheese
- Cottage Cheese
- Cream
- Butter etc.

## Branding In Packaging

Packaging is an integral part of the brand identity. The packaging of any dairy product should deliver consumer expectations of natural dairy taste and freshness, and should have a unique natural appeal and should extend shelf life. Dairy packaging has three main functions to perform:

- To contain the product.
- To protect the product.
- To sell the product.

## Types Of Dairy Packaging

- **Pouch/Sachet:** The pouch or sheets are formed from either a reeled or flat film. UV light may be used to sterilize the film. It is used to package butter, cheese, milk powder etc.
- **Carton:** It plays a very important role in the bulk packaging of milk. It is used for liquid, frozen and coagulated milk products. It is mainly available as preformed container or as precut blanks or sheets ready to be formed into containers.
- **Packet:** Usually made of plastic, it is used to keep pasteurized liquid milk.
- **Barrel:** Barrel are usually made of wood and are coated with wax on the inside. They are used for bulk packaging of semi-solid buttermilk, sweetened condensed milk, etc.
- **Cup:** Cups are made up of paper with plastic or wax coating on inner surface. They are usually covered with a lid and used for frozen and coagulated products.

- **Cans:** This is popularly used for various types of semi-solid powdered products. Aluminium cans widely used. They are the most convenient for gas packing and suitable for dairy packaging.
- **Bottles:** Made of glass with aluminium closures, the bottles are suitable for storing milk shakes and liquid stuffs.
- **Collapsible Tubes:** It is used for packaging semi-fluid products like sweetened condensed milk, processed cheese spread etc. it is usually made up of aluminium and lacquered on the inner side.

## **Research Method**

### **Research Design**

The cross-sectional survey research design method was used in this study. A sample of the target population was selected in a systematic manner.

### **Characteristics of the study population**

This study was targeted on people from 18 years of age and above, who are literate enough to read and write and of any ethnic nationality and sex, found in Lagos as at the time of information gathering.

However, all respondents are consumers of dairy powder. People who do not consume dairy powder due to medical or religious reasons were not eligible for the study.

### **Sampling Design and Procedures**

For the purpose of this study and in view of its relevance to the characteristics of the study population, qualitative method was used to gather the information sought by this study. The sample constitutes those who consume dairy powder either as stand-alone drink or in other forms e.g. in tea, pap, custard, cocker oats etc.

The sample consisted of four (4) focus areas, each with twenty-five respondents (25), bringing the total of respondents to one hundred (100).

The selection of respondents was random with emphasis on the characteristics of the study population.

The four (4) areas selected for survey included: Shomolu, Ikorodu, Mushin, and Oshodi. These areas were selected based on accessibility and convenience.

### **Data Collection Instrument**

The data obtained for this study were through primary source. The instrument for data collection was a research questionnaire.

In constructing the questionnaire, respondent's characteristics and data on relevant variables were sought. The respondent's characteristics included the sex, age, level of education, marital status, and occupation/profession. The data on relevant variables forms the main body of the questionnaire, containing questions on facts, preferences views, and expectations of the respondents on the subject matter of the study.

The questionnaire contained structured scale and counter-check questions which are close-ended aimed at eliciting valid and reliable view of respondents on the role of retail packaging in consumer buying behaviour. The logical scale of measurement such as Strongly Agree,

Agree, Undecided, Disagree, Strongly Disagree were used. The second source of data was secondary materials.

### **Administration of Data Collection Schedule**

The researcher personally went to various areas mentioned. He administered the questionnaire through personal contact with respondents and visited the areas for collection when they were completed. The method provided an opportunity to obtain free information regarding consumer purchase behaviour from the point of view of dairy powder. The response rate from the Shomolu was twenty five (25), Ikorodu twenty three (23), while Mushin and Oshodi were twenty one (21) and twenty four (24) respectively. That is, ninety-three percent (93%) response which represents a sizeable population from which meaningful inferences can be made.

### **Hypotheses**

Four hypotheses were tested in this study, they are:

**H<sub>0</sub>** Packaging does not influence consumers' willingness-to-pay.

**H<sub>1</sub>** Packaging influence consumers' willingness-to-pay.

**H<sub>0</sub>** Packaging does not impact consumers' brand choice.

**H<sub>1</sub>** Packaging impact consumers' brand choice.

**H<sub>0</sub>** Different kinds of packaging do not evoke different reactions in consumers.

**H<sub>1</sub>** Different kinds of packaging evoke different reactions in consumers.

**H<sub>0</sub>** There are no external manifestations of these reactions in terms of consumers' purchasing behaviour.

**H<sub>1</sub>** There are external manifestations of these reactions in terms of consumers' purchasing behaviour.

### **Data Analysis And Presentation**

The data gathered through research questionnaire from 93 respondents were presented here in the form of sex, age, level of education, marital status and occupation/profession.

Of the respondents, 58.1% were male while 41.9% were female. This shows that more male respondents participated in the study. Also, 28.0% were between 18-30 years of age; 38.7% were between 31-40 years; respondents between 41-50 years were 23.7% while 60 years of age and above were 9.7%. In terms of level of education, 23.7%, 37.6% and 38.7% each represents people with SSCE, ND/NCE certificates and HND/B.Sc and above respectively. Of the total respondents, 31.2% were single while 68.8% were married. Monthly earners were 20.4%, 20.4% were students, self employed were 35.5%, while trade were 23.7%. The above results shows fair representation of respondents in terms of sex, age, level of education, marital status and occupation.

However, of all the respondents, 7.5% consume Blue Boat and Three Crown brands of dairy powder, 6.5% consume Coast brand, 19.4% Cow Bell brand; CowHoney, Halib and Real brand were 5.4% each, 14% consume Dano brand, Jago brand is consumed by 12.9%. Also, 9.7% consume Nido brand; 3.2% each consume Nunu and Peak brands. It can be deduced



from above that the most consumed dairy powder in Lagos area is CowBell brand. However, there is keen competition among various brands in the market.

Even though the preference for packaging types is very close with 53.8% respondents preferring pouch/sachet packages and 46.2% preferred can packages. It can be deduced that majority of the respondent preferred pouch/sachet packaging.

Furthermore, 15.1% respondents strongly agreed that milk powder is preferable to any other forms of milk; 28.0% respondents agreed, while 21.5% were undecided; 24.7% disagreed; while 10.8% strongly disagreed with the assertion. However it can be deduced that milk powder is yet to claim dominance over other forms of milk.

On whether packaging influences consumers' willingness to pay, 41.9% respondents strongly agreed and agreed, 9.7% were undecided; while 3.2% respondents, each disagreed and strongly disagreed with this assertion, it can therefore be deduced that consumers are ready to opt for the product in attractive packaging over the product in ordinary packaging if at comparable price.

However, on whether packaging of milk powder should contain special information in a special language, 11.8% respondents strongly agreed with this assertion, 18.3% agreed, 26.9% undecided while 22.6% and 20.4% disagreed and strongly disagreed respectively. It can therefore be deduced that majority of the respondents were undecided and that reasonable number of respondents believed packaging needs not contain special information in a special language.

Furthermore, distribution pattern of how the size of packaging influences packaging type shows that 23.7% respondents strongly agreed, 44.1% agreed. 20.4%, 5.4% and 6.5% respondents were undecided, disagreed and strongly disagreed respectively. It can be deduced that the size of packing influences packaging type since the majority of respondents were in agreement with this assertion.

Most of the respondents were not sure of how different packing materials for dairy powder affect shelf life, possible because they are not specialists in this area. The distribution pattern showed that 8.6% strongly agreed, 22.6% agreed, 41.9% undecided while 17.2% and 9.7% disagreed and strongly disagreed respectively.

To show that the type of packaging really influences the taste of dairy powder, 7.5% strongly agreed, 11.8% agreed, 19.4% disagreed while 31.2% and 30.1% disagreed and strongly disagreed respectively. Majority of respondents are of the opinion that present packaging type has no effect on taste of dairy powder.

When the respondents were asked if cost of purchase plays a significant role in consumers' choice of packed dairy powder, 26.9% strongly agreed, 48.4% agreed and 11.8% undecided with this assertion. 7.5% disagreed while 5.4% strongly disagreed. Deduction can be made that cost of purchase plays a significant role in consumers' choice of packed dairy powder since it is cheaper and more convenient to pack various sizes of milk powder in sachet than it can be done in cans.

Majority of respondents are motivated by packaging aesthetics since 38.7% strongly agreed and 40.9% agreed to this assertion. Also, most respondents do not consider the environmental impact of packaging in making their choices, and therefore are not environmental conscious

on the impact of the packaging waste on the environment. 35.5% respondents and 19.4% strongly disagreed that environmental impact is a major consideration in the choice of packaging for dairy powder. Only 8.6% strongly agreed and 19.4% agreed while 15.1% were undecided.

Most respondents also believed that the existing packaging types have no effect on its solubility either in hot or cold water. This is because 8.6% strongly agreed, 19.4% agreed, 15.1% undecided, but 32.3% agreed while 24.7% strongly disagreed.

Distribution pattern on whether type of packaging of dairy powder influences consumer buying behaviour showed that majority of respondents are of belief that type of packaging of dairy powder influences consumer buying behaviour since 19.4% strongly agreed and 43.0% agreed, 29.4% undecided while 9.7% and 7.5% disagreed and strongly disagreed respectively.

It can also be deduced that the degree to which packaging influences consumer buying behaviour is significant. This is because 26.9% respondents strongly agreed, 41.9% agreed, 18.3% undecided while 8.6% and 4.3% disagreed and strongly disagreed respectively.

However, most respondents believed dairy powder packaging is a necessary evil because its quality is considered in making a choice, and also unnecessary cost because packaging does not have much effect on quality and quantity of milk powder in the pack. This is as a result of distribution pattern of respondents where 24.7% strongly agreed, 23.7% agreed, 14.0% undecided while 27.7% and 12.9% disagreed and strongly agreed respectively.

When asked if the present packaging styles/methods of dairy powder in Nigeria are quite satisfactory, 18.3% strongly agreed, 40.9% agreed, 21.5% undecided. However 12.9% disagreed and 6.5% strongly disagreed. Meaning that majority of respondents believed present packaging methods in Nigeria are quite satisfactory.

Respondents were asked whether effort should be geared toward improving on the locally existing packaging type for dairy powder, majority were undecided (43.9%). This may be as result of the fact that majority were satisfied with the present packaging methods. Also those who were undecided are probably ignorant of what it requires to improve on packaging.

On whether dairy powder packaging development should be viewed as driven by consumer desires, 25.8% strongly agreed, 45.2% agreed, 17.2% undecided while 7.5% and 4.3% disagreed and strongly disagreed respectively. It can be deduced that majority of respondents were of belief that dairy powder packaging development should be viewed as driven by consumer desires.

Of the respondents, 24.7% strongly agreed and 40.9% agreed that dairy powder packaging is distribution driven. 20.4% undecided while 9.7% and 4.3% disagreed and strongly agreed respectively.

Lastly, most respondents believed that packaging of dairy powder is technological driven, this is because 25.8% strongly agreed and 50.5% agreed to this assertion. Only 7.5% disagreed and 2.2% strongly disagreed while 14% respondents were undecided.

## Hypotheses Testing

For the purpose of testing the hypotheses of the study, chi-square ( $\chi^2$ ) was used. The significance level of the test is the maximum probability of rejecting a true hypothesis and is given as five percent (5%) for the testing in this study.

Chi-square test is given as

$$\chi^2 = \frac{(O - E)^2}{E}$$

Where

O = Observed frequency

E = Expected frequency

$\chi^2$  = Chi-square

df = Degree of freedom

H<sub>0</sub> = Null Hypothesis

H<sub>1</sub> = Alternative Hypothesis

### Hypothesis 1

H<sub>0</sub>: Packaging does not influence consumers' willingness-to-pay.

H<sub>1</sub>: Packaging influence consumers' willingness-to-pay.

**Observation:** It is observed that the;

$\chi^2_C = 9.204$  with 4df and  $\alpha = 0.05$  (Test statistics table)

$\chi^2_t = 9.49$  (Cumulative Chi-square distribution table)

### Decision:

Since the calculated value of  $\chi^2$  is lesser than the tabulated value of  $\chi^2$  at the 0.05 significance level and 4 degree of freedom, the null hypothesis H<sub>0</sub> is accepted and alternative hypothesis is rejected, meaning that packaging does not influence consumers' willingness-to-pay..

### Hypothesis 2

H<sub>0</sub> = Packaging does not impact consumers' brand choice

H<sub>1</sub> = Packaging impact consumers' brand choice

**Observation:** It is observed that the;

$\chi^2_C = 75.871$  with 4df and  $\alpha = 0.05$ (Test statistics table)

$\chi^2_t = 9.49$  (Cumulative Chi-square distribution table)

**Decision:** Since the calculated value of  $\chi^2$  is greater than the tabulated value at the 0.05 significance level and four degree of freedom, the null hypothesis (H<sub>0</sub>) is rejected while the alternative hypothesis (H<sub>1</sub>) is accepted, meaning that packaging impact consumers' brand choice.

### Hypothesis 3

H<sub>0</sub>: Different kinds of packaging do not evoke different reactions in consumers.

H<sub>1</sub>: Different kinds of packaging evoke different reactions in consumers.

**Observation:** It is observed that the;

$\chi^2 C = 15.333$  with 4df and  $\alpha = 0.05$  (Test statistics table)

$\chi^2 t = 9.49$  (Cumulative Chi-square distribution table)

**Decision:** Since the calculated value of  $\chi^2$  is greater than the tabulated value at the 0.05 significance level and four degree of freedom, the null hypothesis H<sub>0</sub> is rejected, and the alternative hypothesis H<sub>1</sub> is accepted, meaning that different kinds of packaging evoke different reactions in consumers.

### Hypothesis 4

H<sub>0</sub>: There are no external manifestations of various reactions in terms of consumers' purchase behaviour.

H<sub>1</sub>: There are external manifestations of various reactions in terms of consumers' purchase behaviour.

**Observation:** It is observed that the;

$\chi^2 C = 39.394$  with 16df and  $\alpha = 0.05$  (Test statistics table)

$\chi^2 t = 26.30$  (Cumulative Chi-square distribution table)

**Decision:** Since the calculated value of  $\chi^2$  is greater than the tabulated value at the 0.05 significance level and sixteen degree of freedom, the null hypothesis H<sub>0</sub> is rejected, and the alternative hypothesis H<sub>1</sub> is accepted, meaning that there are external manifestations of various reactions in consumers' purchasing behaviour.

### Conclusions

The study revealed that the brand of milk mostly consumed in Lagos metropolis is CowBell. This may be due to the producer's aggressive advertisement and promotion strategies, better and wider distribution channels for the product. Also, most consumers of dairy powder preferred pouch/sachet package, because sachet lends itself to packaging in various sizes which could be costly in ca/metal package. Dairy powder tastes better in pouches than in cans, and can be stored on a pantry shelf, hold a longer shelf life, require reduced storage space, more convenient, easy to open and use. The cost of packaging by brand owners in pouches is also cheaper than packaging in cans/metals, which has a direct effect on the cost of purchase by consumers.

Even though majority of respondents preferred milk powder to any other forms of milk because of longer shelf life after the first opening of either the can or pouch, reasonable number of respondents still preferred evaporated or liquid milk because of perceived superior quality. The size of packaging will definitely influence packaging type. This agrees with the reason why most consumers preferred pouch/sachet package. It is interesting to know that the influence packaging on shelf life of dairy powder is not known to many consumers as majority of respondents were undecided about this. It is believed that for a package not to affect shelf life it must be air-tight and must not react with the milk powder. According to literature it has been proved that dairy powder packaged in pouches tastes better than those

packaged in cans. Though types of packages currently in use would not affect the taste of dairy powder as long as the packaging is not defective, contaminated and it is not made of inferior packaging materials.

Consumers of dairy powder are cost conscious. Therefore, the roles that cost of purchase plays in making choice of any packed dairy powder are highly significant. This is why most consumers prefer pouch packaging to can packaging. Packaging aesthetics is another motivating factor in which consumers consider in making a choice of packed dairy powder. Consumers do not attach much importance to the environmental impact in making preference for any type of package for dairy powder. In the same vein, consumers also do not believe that type of package has an effect on solubility of dairy powder in any solvent.

Consumers' buying behaviour is indeed influenced by the type of packaging used to pack a dairy powder. This is why there are divergent views and opinion among various consumers on preference for pouch and can/metal packaging. Therefore packaging influences the consumers' buying behaviour to a degree that is highly significant.

While it is good to use packaging to promote and sell dairy powder, the consequence is that the cost of achieving this is passed on to the consumers. This is why most respondents are of the belief that dairy packaging is a necessary evil and unnecessary cost. Most respondents are quite satisfied with the present dairy powder packaging methods and style in Nigeria. However, packaging experts need to stand ahead of others by engaging better branding of their products.

Most respondents are undecided on whether effort should be geared toward improving on the locally existing methods and type of packaging. It is however recognized that a lot of difference can be made among various producers on the quality of raw materials, forming and sealing machines being used for packaging. Dairy powder packaging development without any doubt should be viewed as driven by consumers' desires and also technologically driven. Distribution channels and network influences packaging sizes with direct consequence on the type of packaging to use. Therefore, dairy powder packaging is distribution driven.

Therefore, the role of retail packaging of dairy powder in consumers' buying behaviour is multi-dimensional and can be viewed from various perspectives which include: consumers' desire, brand owners' technological know-how, distribution network, quality of packaging, the converters and foreign competition.

Finally, this study revealed that:

- 1 Packaging impact consumers' brand choice.
- 2 Different kinds of dairy packaging evoke different reactions in consumer.
- 3 There are external manifestations of various reactions in consumers' purchase behaviour.

## **Recommendations**

For any significance achievement in poverty alleviation in a developing country like Nigeria to be recorded through advancement in dairy packaging the following recommendations are suggested for both manufacturers and consumers:

- 1 Any brand of dairy powder that must have an edge over its competitors, particularly in Lagos market must have distinguishing features and must improve on its distribution network, promotion and advertisement.
- 2 Packaging industries should package more of their product in pouch/sachet as there are demands for this packaging type than packaging in can/metals. This is because various consumers from low to medium to higher income earning can easily be satisfied by packing in different sizes at affordable prices.
- 3 NAFDAC should put in more effort in its regulatory roles by ensuring that sub-standard or poor quality or expired milk powder are prevented from getting to the consumers. This is because most quality conscious respondents that have apathy for milk powder and with consequence preference for liquid milk adduced there reasons to these problems.
- 4 Producers should adhere strictly to the weight specified on the pack by filling-in the correct quantity of milk powder in the package. Some brands have loss consumers' loyalty because of this insincerity and cheating on consumers.
- 5 Local production of packing materials at lower cost should be encouraged and improved upon without compromising on quality. Presently, there are many manufacturers of laminated films for pouch/sachet pack and tin coated aluminium cans. However and regrettably they are of lower qualities when compared to the imported ones.
- 6 Environmental impacts of the wastes generated from these packing materials are enormous. Government spend a lot of money to manage the collection and disposal of such wastes. Manufacturers should find a means of recycling these wastes to create more wealth and through this reduce the cost of producing the packing materials.

## References

- Alerstan T, Bovin J.O, Johnson G (1995): Lund University Press: Lund.
- American Plastics Council, APC (2003):[www.americanplasticsconcil.com/benefits/aboutplastics/history.html](http://www.americanplasticsconcil.com/benefits/aboutplastics/history.html)
- Asika N (2006): Research Methodology in the Behavioural Sciences, Longman Nigeria Plc.
- Berner A, Louise et al (1998): Functional Foods and Health Claims Legislation: Application to Dairy Foods International Dairy Journal, Volume 8, issue 5-6.
- Coles R.C, Beharrell B (1990): Packaging Innovation in the Food Industry, British Food Journal.
- Downes T.W (1989): Food Packaging in the IFT Era: Five Decades of Unprecedented Growth and Change, Food Technology.
- Earle M.D (1997): Innovation in the food industry. Trends in Food Science & Technology.
- Flexographic Technical Association (2008): Packaging Design Magazine.
- Food Research International (2007): Volume 40, Issue 8, Elsevier BV.
- Gerding T.K, et al (1996): Trends in food packaging: Arising opportunities and shifting demands, Packaging, Technology and Science.
- Helium Incorporation, USA (2002).
- Kasumu R.A (2000): A Basic Course in Statistics, JAS Publishers, Lagos
- Land O Lakes Incorporation (2000): Consumer Research-Usage and Attitude, Strategic Business Report, Uganda.

- Marielle E.H. et al (2004): The Different Roles of Product Appearance by Consumer choice, *Journal of Product Innovation management*, Volume 22, Issue 1.
- Olsmats C (2002): The business mission of packaging. Packaging as a strategic tool for business development towards the future. Abo Akademi University Press: Abo.
- Olsson A, Gyorei M (2002): Packaging throughout the value chain in the customer perspective marketing mix. *Packaging Technology and Science*, 15:231-239.
- ReadyMeals, [www.readymealsinfo.com/articles/eurmm.htm](http://www.readymealsinfo.com/articles/eurmm.htm)
- Recommended Practices for Selection and Use of Packaging System (2000): AORN, Volume 72, Issue 6.
- Robertson G.L (1990): Good and Bad Packaging: Who Decides? *International Journal of Physical Distribution & Logistics Management*.
- Robertson G.L (1990): Introduction to food packaging. In *food Packaging- Principles*.
- Singh K, Rakarsh et al (2005): Quality of Packaging Foods: Innovations of food packaging.
- Sonneveld K (2000): What drives (food) packaging innovation? *Packaging Technology and Science*.
- SPSS Statistics 17 for window evaluation version.
- Stark O (1990): Tetra Park International AB Lund.