

## ANALYSIS OF BRAND PREFERENCE FOR VEGETABLE OIL IN ABIA STATE NIGERIA

NWACHUKWU, I.N AND OTEH, O.U

College of Agribusiness and Financial Management, Michael Okpara University of Agriculture, Umudike, Abia State, Nigeria.

Email: [ifnwachukwu@yahoo.com](mailto:ifnwachukwu@yahoo.com); nwachukwu.ifeanyi@mouau.edu.ng

### ABSTRACT

*This study examined the consumer brand preference for vegetable oil in Abia State. It specifically focused on the determining factors that influenced consumer preference between branded and unbranded vegetable oil. This study adopted multistage sampling technique in the selection of a total sample of 150 respondents. Half of the respondents were branded vegetable oil users, while the other half represented unbranded vegetable oil users. Binary logit and paired z-test statistics were the tools of analysis adopted in this study. The result showed that income, education, price, age and perception were the major determinants of consumer preference for branded vegetable oil. It also found that income does not influence consumer preference for branded vegetable oil. This study however recommended that firms in the industry are to increase the level of publicity of their branded products since today's consumers are well-informed. This is based on the perceived benefits that will accrue from frequent patronage. This helps build trust, and confidence in the mind of consumers.*

**Keywords:** vegetable oil, brand, consumer, preference

### INTRODUCTION

Vegetable oil occupies a very strong place in the economy of any nation, especially developing country. Its content together with carbohydrates and proteins, contributes to the improvement of nutritional value of the human diet. It is a source of revenue to government and individuals and used as an ingredient or component in many manufactured products (Inan *et al.*, 2006; USDA, 2000). Vegetable oil is produced from oil fruits such as olives, palm and industrial plants such as soy beans and cotton seed, as well as from plants with oil seed, an example is sunflower etc (USDA, 2008).

USDA (2010) put the global vegetable oil consumption in 2009 at 138.57million metric ton, as against 128.2 in 2007. Out of this figure, Nigeria's domestic consumption stood at 1.79 million metric tons (USDA 2010). More so, most of these products are imported from other countries of the world since local production is not enough to cover domestic consumption. USDA (2005) reported that Nigeria's annual demand for vegetable oil exceeds domestic output by about 168,000 tons per year. Approximately, 201,000 tons were imported from other countries to make up for the short fall. The need to increase production, gain greater market dominance, increase profitability and increased importance of vegetable oil especially in many manufactured products becomes imperative. More so, its use in making bio-diesel and other sundry applications has led to the proliferation of different versions of the products in the market place which are mostly undifferentiated and sometimes substandard. Recently, fake and substandard vegetable oils were impounded by the regulatory agency, NAFDAC in Nigeria because they were unfortified with vitamin A ingredients. This no doubt has health implications such as nutritional deficiency, damage to skin among others (Obioma, 2009). The harsh reality is that these products are marketed as a generic product called groundnut oil, thus reducing chances of consumers from addressing post purchase dissonance properly when they occur. To many consumers, a vegetable oil is a vegetable oil irrespective of its source, maker or function.

Marketing provides a good arsenal through branding, for addressing this problem. Marketing has come to be seen as a central business discipline and its functions act as a sort of a "gearbox" making a profitable connection between a company's core competencies and the needs of the market. For most marketers, brands are the "cogs" in the gearbox (Mark, 1995). Brands and brand marketing lie at the heart of modern business especially in today's competitive business environment; hence the newest mantra in business circle is "nothing happens until someone brands something".

Branding is increasingly being used as a strategy for managing markets in developed countries and by extension less developing countries that are still lagging behind to gain market share growth and product success (Chimboza and Mutandwa, 2007).

Extant literature shows that consumers are influenced by various factors when choosing among alternative brands. These are called success factors and include relative advantage, perceived risk, complexity, compatibility, observability, image, price and trialability (Rogers, 1995; Tornasky and Klein, 1982; Mason, 1990; Kotler and

Armstrong, 2008). This paper is aimed at placing the issue of customer brand preference within a larger perspective than a set of repetitive discrete transactions between consumers and brands. It is in this light that it examines the determinants of brand preference for vegetable oil among consumers in Abia State. In view of the emerging discourse, the following objectives are provoked; (1) to estimate the determinants of brand preference for vegetable oil. (2) to compare demand for branded and unbranded vegetable oil.

**MATERIALS AND METHODS**

**The Study Area**

The study was conducted in Abia State, Nigeria. The State is located within the Southeastern Nigeria and lies between Longitude 07<sup>0</sup> 30<sup>1</sup> East and Latitude 5<sup>0</sup> 25<sup>1</sup> North. Abia State is bounded by Imo State on the Western border; Ebonyi and Enugu States on the North; Cross River and Akwa – Ibom States on the East and Rivers State on the South. Its population stood at about 2.883,999 persons with a relatively high density of 580 persons per square kilometer (NBS, 2007).

Abia State is divided into administrative blocks called Local Government Areas which is grouped into three (3) agricultural Zones namely Ohafia, Umuahia and Aba Zones. In terms of occupation, about 70% of Abians are farmers and have the potentials for the production of agricultural produce and products such as palm oil, cassava, vegetables, palm kernel, yam, rice, cocoa etc, livestock, fish and also engage in food processing (ABSG, 1992). The presence of a good number of agricultural institutions in the state, e.g. National Root Crops Research Institute, Michael Okpara University of Agriculture, Faculty of Agriculture of Abia State University, Extension outfit of Ahmadu Bello University etc in the state guarantees an unquantifiable advantage and adds to their capacity and potential in agricultural production.

**Method of Data Collection**

The study employed purposive and multistage sampling techniques in the selection of location and respondents. In the first stage, two urban cities (Aba and Umuahia) were chosen purposively due to the fact that consumption of vegetable oil is much more concentrated in the cities than in the rural areas. The second stage was a random selection of five streets from each of the cities and the last stage was a random selection of fifteen respondents from each of the streets. This aggregated to One hundred and fifty respondents for the study. In order to accommodate the objective on comparison between branded and unbranded, The sample size was partitioned into two, each half (75) apportioned to the consumers of branded and unbranded vegetable oils.

**Method of Data Analysis**

For the realization of the objectives, a number of analytical tools and econometric models were employed. Binary logit model was used in the estimation of the determinants for brand preference while paired Z-test statistic was employed for the comparison between branded and unbranded consumers. The binary logit for the estimation of the consumer brand preference is stated thus:

$$Z = b_0 + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + b_5 X_5 + b_6 X_6 + b_7 X_7 + \epsilon_1 \dots\dots\dots(1)$$

Where Z= Preference for branded vegetable oils (Dummy:  
1=preference for branded and 0 = otherwise)

- X<sub>1</sub> = Age (years)
- X<sub>2</sub> = Income (Naira)
- X<sub>3</sub> = Education (years)
- X<sub>4</sub> = Price (Naira)
- X<sub>5</sub> = Perception of quality (Dummy: 1=has quality; has no quality)
- X<sub>6</sub> = Household size (No)
- X<sub>7</sub> = Sex (Dummy)
- ξ<sub>1</sub> = Composite error term

In the comparison of buyer preference and willingness to pay between branded and unbranded vegetable oils, the paired z-test statistic was be employed and thus stated as:

$$z = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{S_1^2 + S_2^2}{n_1 + n_2}}} \dots\dots\dots(2)$$

Where z = z -test statistics  
 $\bar{X}_1$  = mean value of branded vegetable oil consumers.  
 $\bar{X}_2$  = mean value of unbranded vegetable oil bought by consumers

- $S_1^2$  = sample variance of branded vegetable oil bought by consumers  
 $S_2^2$  = sample variance of unbranded vegetable oil bought by consumers  
 $n_1$  = sample size of branded vegetable oil bought by consumers  
 $n_2$  = sample size of unbranded vegetable oil bought by consumers

These are consistent with Nwachukwu *et al* (2009) who employed same in their studies.

## RESULTS AND DISCUSSION

In estimating the determinants of brand preference for vegetable oil, the following text factors were used; age, income, education, price, perception to quality, and sex. The binary logit model was employed and the result is shown in Table 1.

**Table 1: Determinants of Brand Preference for Vegetable oil in Abia State**

Variables	Co-efficient (B)	Standard error	Wald	Exp. (B)
Constant	-4.282	2.623	2.666	0.014***
Age (X <sub>1</sub> )	0.013	0.003	27.729	1.003***
Income (X <sub>2</sub> )	0.292	0.167	3.066	1.108***
Education (X <sub>3</sub> )	-0.189	0.119	2.505	0.828***
Price (X <sub>4</sub> )	-0.108	0.160	0.452	0.898
Perception to qty (X <sub>5</sub> )	-0.370	0.898	0.170	0.691
Sex (X <sub>7</sub> )	0.103	0.053	3.715	1.109***
Cox and Snell R <sup>2</sup>	0.170			
Nagelkerke R <sup>2</sup>	0.231			

**Source:** Computed from Field Survey, 2009.

\*\*\* denote statistical significance at 1% risk level

The result of Table 1 shows that the coefficient of age, income, education and sex are statistically significant at 99% confidence level as showed by the wald test statistics. They equally posses positive signs indicating that the variables have a direct relationship with preference and willingness to buy branded vegetable oil.

Education and income had a positive impact on preference as evident in Table 1. This result is consistent with the findings of Kotler and Armstrong (2004) and Kotler and Keller (2007), who opined that a person's economic situation affects his product choice. This gives credence to economic theory that when a consumer's income increases, his tastes and preferences change, which translate into improvement in his standard of living. Education brings about with it consumer knowledge. Consumer knowledge is what drives the differences that manifest themselves in brand selection, preference and overall brand equity. Positive sign for income also coincides with the findings of Umberger *et al* (2003) who found that wealthier consumer tend to use the price as an indicator of quality. Branded items are believed to be of higher quality and as such command premium price. This proves the consumer notion that branded

goods are quality products and as such brand loyalists are willing to pay to sustain their preference (Chimboza and Mutandwa, 2007). Positive price is also consistent with the findings of Haque *et al* (2009) who had a positive sign for price co efficient. In consonance with the positive coefficient for education, higher level of education could lead to a higher awareness of the external effects of consumption (Henseleit *et al*, 2007).

The outcome justifies the fact that age, education, income and perception to quality are positively related to preference for brands of vegetable oil.

The Cox-snell and Nagelkerke R<sup>2</sup> values are attempts to provide a logistic analogy to coefficient of multiple determination, R<sup>2</sup> in OLS regression. The Nagelkerke measure adapts the Cox-snell measure so that it varies from 0 to 1 as does R<sup>2</sup> in OLS. At 17% and 23% for Cox-snell and Nagelkerke respectively, the regression line fits data up to the stipulated level. As such, they imply the extent of explanation of variation in the dependent.

In order to compare preference for branded and unbranded vegetable oil, paired z-test statistics was used and the results are presented in Table 2.

**Table 2: Paired z-test for comparison of preference for branded and unbranded vegetable oil Consumers in Abia State, Nigeria**

Variable	Individual Mean	mean	Paired Differences Standard Deviation	z
Perception of Quality – Branded	0.87	0.20	0.66	2.35
Unbranded	0.67			
Income – Branded	309.20	-210057.5	154565.80	-10.53
Unbranded	210366.67			
Price – Branded	309.20	118.20	153.25	5.98
Unbranded	191.00			
Age – Branded	31.48	2.37	10.99	1.67
Unbranded	29.12			
Education – Branded -	14.88	2.21	3.48	4.93
Unbranded	12.67			

**Source:** Computed from Field Survey Data, 2009. \*\*\* denoted statistical significance at 1% risk level

Among the variables for the paired sample analysis, income, education, perception of quality, price and age were statistically significant at various probability levels. Given the fact the mean value of the income of the unbranded consumer was more than that of the branded consumer as shown by their individual mean(s), it implies that preference for branded vegetable oil was not influenced by income.

Unlike in education, perception to quality, price and age where the mean value of the branded consumers are higher than those of the unbranded, it indicates that preference for branded vegetable was influenced by the four variables.

This result is consistent with the findings of Nwachukwu *et al* (2008) and Nwachukwu *et al* (2009) who had a similar research outcome.

## CONCLUSION

This paper shows that certain individual factors such as personal motives, preference and perception influence consumer purchase decisions. Importantly, these individual factors are affected by personal characteristics such as, age, income, and perception to quality, price, household size and education. Combined, they serve as important determinants of consumer preference for vegetable oil. Based on this understanding, it is suggested that given the fact that today's consumer is educated and well-informed, and based on the fact that organizations benefit from frequent patronage, firms in the industry are advised to increase the level of publicity of their branded products. This helps build trust, and confidence in the mind of consumers.

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