

WILLINGNESS TO PAY FOR SAFETY LABEL ON SUGAR AND VEGETABLE OIL AMONG HOUSEHOLDS IN SOUTH – WESTERN NIGERIA

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ABSTRACT

This study investigates willingness to pay for safety label on sugar and vegetable oil among households in South – Western Nigeria. In all, 390 consumers comprising 180 from Oyo and 210 from Lagos were sampled. Data collected include socio-economic, market and food safety information variables using structured questionnaire. Descriptive statistics and logit regression model were used for data analysis. Most (61.6% and 70.0%) of sugar and vegetable oil consumers are in their active age bracket of 16 and 45 years. Gender wise 55.6% and 56.3% of female consumed sugar and vegetable oil, while the corresponding values for male are 44.4% and 43.7% respectively. Consumer distribution by monthly income showed that 34.4% of sugar consumers earned an average income of N48,500 ($\pm 8,445$) while 32.5% of vegetable oil consumers earned an average income greater than N95,500 ($\pm 10,500$). Majority of sugar (52.2%), vegetable oil (51.1%) consumers had primary and tertiary education respectively. The mean household size for sugar and vegetable oil consumers are 4 (± 2) and 6 (± 3) respectively. Fewer (33.3%) of consumers of sugar and (43.8%) of vegetable oil consumers are aware of food safety information. Consumers have higher (66.3%) level of awareness of Vitamin A in vegetable oil compared to sugar (21.1%). The consumer's mean WTP for food safety information was N36.41/kg for sugar and N15.98/litre of vegetable oil. This represented a market premium of 91.3% and 53.3% of the maximum bid for food safety in both sugar and vegetable oil. While increased in age ($\beta = -0.11$) reduced WTP for safety information in sugar, higher level of education increased WTP ($\beta = 0.4569$) at $P < 0.01$. In the case of vegetable oil being a woman ($\beta = 0.9521$), having high income ($\beta = 0.9956$) and purchasing from registered shop ($\beta = 0.9452$) increased WTP at $P < 0.05$. Consumers are willing to pay more for food safety information on sugar compared with vegetable oil. However, consumers willingness to pay (WTP) for safety label increased with buying from registered shop and having high income.

Keywords: willingness to pay, safety label, sugar, vegetable oil, South-Western Nigeria.

INTRODUCTION

Food safety as defined by the FAO/WHO is the assurance that food when consumed in the usual manner does not cause harm to human health and well-being (WHO, 2002). Food safety is of utmost concern in the twenty-first century (Patron, 2004a.). It is a well known fact, food is manufactured in bulk by a few and consumed by many. However, adulterated food poses a threat to consumers worldwide (WHO, 2002, Patron, 2004b). But despite living in a technological era, many people, particularly those living in developing countries may not be sufficiently educated or informed about food safety and why it is important to good health and prosperity (Patron, 2004c). Sequel to the above, the demand for food safety information has been considered important in human nutrition because some food items are adulterated with harmful consequences to human health (Akgungor *et al*, 1997) and by implication, labelling as a marketing function, which help to inform consumers on the quality of products to be purchased, has not been effective. Thus food labelling should be beneficial in selectively targeting segments of the consumer population that would react more favourably

toward healthy products. The cost of providing a safety label should be compensated by the value of the benefit that the consumer received by being assured of non-contamination or adulteration of food purchased. In Nigeria, legislation through National Agency for Food, Drugs Administration and Control (NAFDAC) has been passed on food items which are considered harmful to human health (NAFDAC, 2006). Labels provide added value which ultimately materialize in higher consumption and probably price and margins, which lead to firm competitive advantage (De Chematony and Harris, 2002). A label therefore transforms aspect of quality from credent to search attributes of food and is used as extrusive quality cue. Van Trip *et al.*, (1996) argued that labelling assist the imperfectly informed consumers in the decision process, because it structures the information environment.

Label has been used to identify the country of origin on all fresh and frozen beef product imported in the United State of America, however, in developing countries like Nigeria; label information is just gaining ground among food consumers. A number of arguments have emerged for and against labelling of food in the US. According to Becker (1999), arguments in favour include the idea that the labelling from the country of origin should give US producers the opportunity to create a competitive niche market, as long as consumers select US beef over imported beef. As in the debate over genetically modified foods, labelling advocates make consumers have the “right to know” where their meat products originate. Label has been considered as an unnecessary trade barrier. Some trade officials worry that other countries would retaliate against the labelling policy. For example, the potential costs associated with the implementation of the labelling policy should outweigh the potential benefits (USDA/FSIS, 2002). Moreover the industry compliance costs could be high with consumers bearing the additional cost of mandatory labelling.

In Nigeria, awareness has been created on the importance of label and consumption of organic and processed foods, notably from the media. An example is the issue of potassium bromate in bread. There are other food adulteration problems in other food items consumed by Nigerians. These include beans, rice, maize flour, wheat flour, semolina, and in foods fortified with Vitamin A, in particular, salt, sugar and vegetable oil. NAFDAC’s report has shown that these food items imported into the country or even manufactured within the country are mostly adulterated. And for consumers to be aware of the health implications, they need to be conversant with food safety information is pertinent. Consumers’ awareness of food safety information has been acknowledged as a policy relevant variable in food demand analysis (Henson, 2005) . This study therefore examined consumer’s preference for food safety attributes with respect to fortification of sugar and vegetable oil respectively.

Label is an important strategy to stimulate consumer’s demand for food. Food safety information is affected by the decision of producers, processors, distributors, food service operators and consumers as well as government regulations (Caswell, 2003). In developing countries, however, measures toward food safety have little impact because of a dearth of information on food safety. This has constrained the effectiveness of labelling in stimulating food demand. The consumption of irradiated foods without sufficient scientific data on the nutritional status has been discovered as a major risk to consumers’ health (Patron, 2004a). With increasing inflow of organic and processed food into the Nigerian markets, many consumers, particularly those living in developing countries have not been sufficiently educated about food safety and its importance in good health (Patron, 2004b). In Nigeria, adulteration of food is common among producers and shopkeepers with a scandalous disregard for the health of the consumers. The form of adulteration vary from mixing different grades of food items together to repackaging/rebagging. These practices allow sales of fake and poor quality product at higher prices to the consumers. Food safety problems could be in the form of food adulteration or contamination (Caswell, 2003). Reported cases of food adulteration in Nigeria include;

1. The case of the introduction of poisonous or killer Indomie Noodles into the Nigerian market, which sounds like a preconceived action given the fact that the noodles were produced without batch numbers.
2. Prevalence of unfortified salt, sugar, vegetable oil and flour in Nigeria markets which poses health problems to consumers as reported by NAFDAC.

The extensive use of potassium bromate in bread production, which has serious health implication for consumers. In all of these cases and many others, Nigerian consumers are kept in the dark regarding the required information that would guide their preference and perception for food safety. Such information is also required to determine their willingness to pay for food safety attributes among other factors that would determine their perception and preference.

It therefore becomes imperative for an investigation of the consumer's perception and willingness-to-pay (WTP) for food safety information. Inedia (2004) analyzed consumers' behaviour towards food safety label on bread. The study focused on the presence or absence of bromate in bread consumed. The study could not address consumers' perception of food safety information and their willingness to pay for the food safety information. If consumers are aware of food safety information and its implications, they may be willing to pay for food safety information on food items. In the developed countries on the other hand, consumer demand for high quality food has been on the increase based on their increased knowledge about links between diet and health, awareness of quality characteristics and access to information about new production and processing [Oni *et al*, 2005]. Nigeria therefore is lagging behind on food safety and quality issues. However it should be noted that the problem of food safety in the developed countries differs considerably from that in developing countries. For instance whereas traditional methods are used for marketing fresh produce in developing countries, food processing and packaging are the norms in industrialized countries. While WTP for food safety information on food has been duly acknowledged in developed countries (Fulponi, 2005), it is a major concern in developing countries.

This study therefore raised the research questions below for the investigation into consumers' perception and preference for food safety attributes (Sugar and Vegetable oil) in south west Nigeria. This study intends to address these gaps based on the following research questions: What are the factors that determine consumers' perceptions and preference for food safety information?, How do socio-economic, food safety and market-related variables influence consumers' willingness to pay for food safety information? and what market premium are consumers willing to pay for food safety information? . The general objective of this study is to examine consumers' perception and preferences for food safety attributes in Sugar and Vegetable oil among south western households, Nigeria. The specific objectives of the study are to: address consumers' perception and preference for food safety information, identify the factors influencing consumers' willingness to-pay for food safety information in the study area and calculate the market premium that consumers are willing to pay for food safety information in the study area. The null hypothesis tested is consumers' socio-economic and food-demand characteristics do not significantly influence consumers' willingness to pay for food safety information.

Analysis of food safety information is relevant, given the health risks associated with consumption of adulterated food. Food adulteration contributes to the poor quality of life in the ill-provisioned and under-regulated areas of the world (Collins, 1993). Fraudulent adulteration of basic food stuff, the use of preservatives and colorants and bacterial contamination are examined successively to show that the majority of basic food legally pure, however legalized adulteration with chemicals was widespread and ever increasing (Collins, 1993).

Previous marketing research efforts have examined the effect of label on consumers' behaviour toward non-food products. Erickson *et al.*, (1994) conducted research to determine whether labels affected consumers' benefits when evaluating cars. Their results suggest that an image variable does affect belief formation rather than attitude. The same conclusion was reached from the studies of Chung and Masson (1988) and Strutton and Pelton (1999). While those studies discussed behaviour toward country-of-origin labels, food studies have examined consumers' perceptions associated with labelling in agricultural products. Schupp and Gillespie (2001a) sampled beef processors, retailers and restaurants in Louisiana to identify why beef handling firms would either support or reject a mandatory labelling policy. Their findings revealed that supporters of the policy felt their consumers would find the label valuable while opponents of the policy thought mandatory labelling simply meant more government intervention.

In a companion study by Schupp and Gillespie (2001a), Louisiana households were surveyed to find consumers' degree of support for mandatory labelling of bread from grocery stores and restaurants. Over 80% of the respondents supported a compulsory labelling program. Although these studies show beef handlers' and consumers' support of mandatory labelling, they do not shed light on whether consumers would be willing to pay the additional cost associated with the mandatory labelling policy.

In the study of consumer behaviour, a Willingness-To-Pay (WTP) study by Quagraine *et al.*, (1998), compared a popular beef product from Alberta with a similar product produced elsewhere in Canada. Based on their findings, a 15% reduction in the price of the non-Alberta meat product would be necessary in order for consumers to be indifferent about the two sources. In a similar study, Umberger *et al.*, (2002), found consumers could discern taste differences and were willing to pay (WTP) a significant premium of \$0.07 per pound on average for corn-fed beef raised in the United State versus grass-fed beef raised in and imported from Argentina. Despite their conclusion that consumers are willing to pay a premium for geographically labelled products, these studies likely are not representative of local consumers' preferences for labels on food.

In Nigeria, studies have been carried out on food safety information and consumers' perception for food safety labels. Inedia (2004), identified education, gender, income, prior knowledge of the presence of bromate as positively influencing the probability of the consumers' decision to pay for safety labels, while prices of bread and consumers' confidence and perception held by respondent negatively influence consumers' willingness to pay more for safety labels. In the same vein, Akinmade (2006) also used the probit model to obtain the information on how socio-economic variables influence their knowledge of food safety and their awareness of food safety and their choices. The result showed that income of the respondent at 1% and amount spent on salt at 1% have a significant effect on consumers' willingness to pay for food safety labels. Knowledge of the respondent about iodized salt and preference for safety label also significantly affect consumers' willingness to pay for food safety labels in salt at 5% level of significance.

Finally the study recommend that respondents in the study area should be enlightened on the health implication of iodized salt in human diets and that respondents in the study area should strive to raise their income by getting involved in other productive opportunities. Akinwale (2007), indicated that variables such as the health implication of bromate used in bread significantly influence the probability of respondents' willingness to pay for safety labels while income, education, price per grain, knowledge about bromate and health implication of the residue positively influence the probability of willingness to pay for safety labels. Age and household size on the other hand are negatively related to willingness to pay. The study thus suggested a more intense public enlightenment programme concerning the health implication of bromate residue in bread through electronic and print media.

While studies have been carried out on food safety information and consumer's perception, no study in Nigeria has identified determinants of consumers' perception and preference for food safety information on sugar and vegetable oil. Furthermore, past studies have not computed the premium that consumers are willing to pay for food safety information and no literature in Nigeria has simultaneously estimated consumers' willingness to pay and consumers' preference and perceptions, for sugar and vegetable oil and the premium that consumers are willing to pay for food safety information. This study therefore adds to literature in consumers perceptions and adulterated food and willingness to pay (WTP) for food safety label using sugar and vegetable oil as case studies.

METHODOLOGY

The study was carried out in South West Nigeria in view of the fact that consumers of sugar and vegetable oil are prevalent. South West Nigeria falls on latitude 6° to the North and latitude 4° to the South. It is marked by longitude 4° to the West and 6° to the East. The zone comprises of six states (Oyo, Osun, Ondo, Ogun, Ekiti and Lagos), the geographical location of (SW) Nigeria covers about 114,271 kilometres square, that is approximately 12% of Nigeria total land mass. The total population is 15,456,789 and more than 96% of the population is Yorubas (NPC, 2006). The zone is bounded in the North by Kogi and Kwara states in the East by Edo and Delta states, in the South by Atlantic Ocean and in the West by Republic of Benin.

The two most populous and urban states (Lagos and Oyo) were purposively selected from the South-West (SW). Five Local Government Area (LGAs) based probability proportionate to size of the states were randomly chosen. In each LGAs, respondents were randomly selected from three strata namely, Low -, medium – and high income areas. In all 390 consumers comprising 190 from Oyo and 210 from Lagos were sampled. Data collected include socio-economic, market and food safety information variables using structured questionnaire. Descriptive statistics and logit regression model were used for analysis. The model is specified as consumers' willingness to pay for food safety in fortified sugar and vegetable oil is:

$$WTP_i^* = \beta_0 + \beta_1 Bids + \beta_2 Educ + \beta_3 Age + \beta_4 GEND + \beta_5 PRIC + \beta_6 SOUR + \beta_7 INCM + \beta_8 KNOW + \beta_9 PERC + \beta_{10} HHSZ + E_i \dots\dots (11)$$

Where:

- WTP_i* = Willingness to pay for food safety information (Yes =1;0 = No)
- BIDS = Random amount the consumer will be asked to pay in Naira
- EDUC = Level of education of respondents in years
- GEND = Sex of the respondents (Female = 1, Male = 0)
- PRIC = Unit price of fortified sugar/vegetable oil
- SOUR = Source of fortified sugar/vegetable oil (Registered = 1, Unregistered = 0)
- INCM = Income of consumers in Naira
- AGE = Age of consumers in years
- KNOW = Knowledge of food safety information(Aware=1, Not aware=0)
- PERC = Perception of consumers on food safety information (1 = No chance of health problem, 0 = chance of health problem)
- HHSZ = Household size in number
- E_i = Error Term

Market premium that consumers are willing to pay for food safety information. Willingness-to-pay estimates (Hanemann 1989) for food safety information was obtained using:

$$(WTP) = \frac{1}{\beta_I} \ln \left[\frac{1 + e^\alpha}{1 + e^{\alpha - \beta_1 \text{Bidmax}}} \right] \dots \dots \dots (12)$$

α = grand constant Equals the sum of all the products of the estimated coefficients (except the one corresponding to the bid amount) times the mean values of their corresponding explanatory variables.

Bidmax = the highest bid amount for food safety information in Naira

β_1 = is the estimated coefficient associated with the bid amount.

The result from the logit model was used to generate the confidence intervals of the welfare estimates calculated in equation 12 by a bootstrapping technique (Park *et al*, 1991). The technique used the estimates of the parameter vector, denoted by β_1 , and the estimated variance – covariance matrix, denoted by $\Sigma\beta$. Multiple random draws to create a new parameter vector β are made from a multivariate normal distribution with variance – covariance Σ_p and mean WTP was calculated using equation 12. Mean WTP values and their respective confidence interval were determined.

RESULTS AND DISCUSSION

Age distribution shows that 61.6, 70.0 and 71.3 percent of sugar, vegetable oil and consumers of both respectively are in their active age bracket of between 16 and 45 years. Gender distribution of consumers revealed that 55.6, 56.3 and 54.5 percent of female consumed sugar, vegetable oil and both items respectively while the corresponding values for male are 44.4, 43.7 and 45.5 percent. Respondents distribution by monthly income showed that majority (34.4%) of sugar consumers earned income between ₦41,000 and ₦60,000. For vegetable oil, 32.5% earned income greater than ₦60,000 while in the case of consumers that consumed both products, majority (40.5%) earn ₦20,000 or less. Educational status of respondents showed that majority of sugar (52%), vegetable oil (51%) and consumers of both items (48%) had primary, tertiary and secondary education respectively. The mean household size for sugar consumers is 4, while that of vegetable oil consumers is 6. Consumers of both products have mean household size of 8 members.

Table 1: Socio economic characteristics of respondents (n=90)

	Sugar Consumers		Vegetable Consumers		Sugar & Vegetable Consumers	
	F	%	F	%	F	%
Age						
≤ 15	3	3.3	2	2.5	5	2.3
16 – 30	30	33.3	36	45	70	31.8
31 – 45	25	27.8	20	25	87	39.5
46 – 60	24	26.7	18	22.5	50	22.7
≤ 60	8	8.9	4	5	8	3.7
Gender						
Female	50	55.6	45	56.3	120	54.5
Male	40	44.4	35	43.7	100	45.5
Marital Status						
Single	24	26.7	34	42.5	79	35.9
Married	60	66.7	40	50	124	56.4
Widowed	1	1.1	1	1.3	2	0.9

Divorced	5	5.5	5	6.2	15	6.8
Monthly Income (₦)						
≤ 20,000	13	14.4	14	17.5	89	40.5
20,000 – 40,000	19	21.1	15	18.8	68	30.9
41,000 – 60,000	31	34.4	25	31.3	32	14.5
≥ 60,000	27	30.0	26	32.5	31	14.1
Occupation						
Artisans	09	10	06	7.5	10	4.5
Civil Servants	29	32.2	30	37.5	95	43.3
Trading	20	22.2	16	20	34	15.5
Professionals	32	35.6	28	35	81	36.2
Educational Levels						
Primary	47	52.2	17	21.2	56	25.5
Secondary	23	25.5	22	27.5	105	47.7
Tertiary	20	22.2	41	51.3	59	26.8

Source: Field Survey, 2008

Determinants of Consumers' Willingness To Pay for Food safety Information in Vitamin A fortified Sugar consumption

The result of determinants of consumers' willingness to pay for food safety label in sugar in South West Nigeria is presented in table 10. The significance of chi square and log-likelihood function shows that logit regression model is fit for the analysis. Among the regressors, age of consumers, awareness of food safety information, years of education of consumers and price of sugar are the significance factors that influence Consumers' Willingness to Pay (WTP) for food safety labels in fortified sugar consumption.

Age of consumers negatively and significantly ($P < 0.01$) influence consumers WTP for food safety information in fortify Vitamin A sugar. The result implies that younger age group consumes sugar and are less likely to pay for food safety information in fortified vitamin A sugar. The marginal effect result shows that a year increase in age of the sugar consumer reduces WTP for food safety information by 0.53%. Knowledge or awareness of food safety information is positive and significantly ($P < 0.05$) influences WTP for food safety information in sugar. Knowledge/awareness of food safety information increase consumers WTP by 13.72%. Year of education of consumers is positive and significantly ($P < 0.01$) influences consumers WTP for food safety information and by implication, a year increase in education of sugar consumers reduces consumers WTP for food safety information by 0.18%. Years of education reduces consumers WTP for food safety information because majority of sugar consumers are not well educated. This findings agrees with Lawrence *et al* (2003) which says that consumers with higher education tend to be more willing to pay for moderately for food safety information.

Average unit price of sugar is negative and significantly ($P < 0.01$) influences consumers WTP for food safety information. The negative signs are expected, because price exerts a negative relationship with demand function analysis. The result implies that low price of vitamin A in sugar increases consumers WTP for food safety information. Other variables included in the model (gender, households' size, income, source of purchased, perception and bids) do not significantly influence consumers WTP for food safety information in fortified sugar. For example payment for label (Bids) label for sugar consumers is low. Also most consumers of purchased sugar fortified Vitamin A sugar in unregistered source. Income of majority of sugar consumers was reportedly very low.

Table 2: Result of Logit Regression Model (Determinants of WTP for food safety information in fortified Sugar)

Variables	Coefficient	Standard error	Marginal effect
Consumers Age	-0.1137 ***	0.0305	-0.0053
Gender (Sex)	1.0229	0.3688	-0.3948
Knowledge	0.355 **	0.1639	0.1372
Household size	-0.0439	0.0659	-0.0169
Years of Education	-0.4569 ***	0.1286	-0.1764
Income	0.0555	0.1639	0.1372
Average Price	-0.2878 ***	0.0275	-0.111
Source of Purchase	0.0003	0.0301	0.001
Perception of Label	0.02921	0.4329	0.1128
BIDS	0.0043	0.8211	0.224
Constant	0.0821 ***	0.0211	0.001

Source: Computer Printout, 2008

Log-likelihood ratio = -53.50** Chi squared = 24.59** Sample size (N) = 390

*** Significant@1% **Significant@5% *Significant@10%

Determinant of Consumers WTP for food safety information in fortified vegetable oil

The result of determinants of consumers WTP for food safety label in vegetable oil in South-West Nigeria, is presented in table 8. The significance of Chi-square and log-likelihood show that logit regression model fit for the analysis. Among the regressors, gender of consumers, knowledge of consumers, education level of consumers, income of consumers and source of purchase of vegetable oil are significant factors that influence consumers WTP for food safety labels in fortified vegetable oil consumption. Gender is positively and significantly ($P < 0.01$) influence, consumers WTP for food safety information in Vitamin A vegetable oil. The result implies that female consumers relative to male counterpart are more likely to pay for food safety information in fortified Vitamin A vegetable oil. The marginal effect result shows that consumers willingness to pay for food safety information increases by (0.012%). Knowledge of food safety information positively, and significantly ($P < 0.05$) influences Consumers Willingness To Pay (WTP) for food safety information. Consumers' awareness of food safety information increases Willingness To Pay (WTP) by 1.05%. Years of education positively and significantly influences Willingness To Pay (WTP) for food safety information in vegetable oil. The result implies that consumers of vegetable oil are educated. Source of purchased of vegetable oil positively and significantly ($P < 0.05$) influence WTP for food safety in vegetable oil. Source of purchased increases consumers' WTP by 0.02%. Other variables included in the model (Age of consumers, household size, average price, bids and perception of label do not significantly influence consumers WTP for food safety information in fortified vegetable oil). For instance, perception of label for vegetable oil consumers is low. Also, most consumers of vegetable oil purchased fortified Vitamin A vegetable oil from unregistered source.

Table 3: Determinant of Consumers WTP for food safety information in fortified Vegetable Oil

Variables	Coefficient	Standard error	Marginal effect
Consumers Age	0.2852	0.3915	0.4121
Gender (Sex)	0.9521***	0.3211	0.1254
Knowledge	0.5236**	0.8492	1.0541
Household size	0.2566	0.1832	0.0051
Years of Education	1.2892**	0.6834	1.0114
Income	0.9956***	0.2141	0.3241
Average Price	-0.8432	0.5244	0.3111
Source of Purchase	0.9452**	0.3721	0.0211
Perception of Label	0.3121	0.4186	0.0821
BIDS	0.41228	0.510	0.8111
Constant	0.1884**	0.0915	0.0251s

Source: Computer Printout, 2008

Log-likelihood ratio =** Chi squared =** Sample size (N) = 390

*** Significant@1% **Significant@5% *Significant@10%

Source from Willingness To Pay Estimates

WTP estimate for sugar and fortified vegetable oil calculated as ₦36.41k/kg and ₦15.98/litre respectively implies that consumers of fortified sugar are willing to pay 91.03% of the maximum bid of N40 for food safety information on sugar. In the same vein, the premium for vegetable oil estimated as ₦15.98/litre over the maximum bid of ₦30/litre implies that consumers of vegetable oil are willing to pay 53.27% of the maximum bid for food safety information on vegetable oil.

Table 4: Willingness to pay estimates for fortified sugar and vegetable oil

FOOD ITEM	MEAN WTP	PERCENTAGE (%)
Fortified Sugar	₦36.41/kg	91.03
Fortified Vegetable Oil	₦15.98/litre	15.98

CONCLUSION

The conclusion from this study is that consumers’ willingness to pay for food safety label in the study area was high for sugar but low for vegetable oil. The study also established the fact that education, income, knowledge and perception are significant factors influencing consumer’s willingness to pay for safety labels. The following are the policy recommendations based on the finding of study: There is need for government to strengthen the perception of consumers about the Importance of safety labels through National Agency for Food, Drugs Administration and Control (NAFDAC). There is need to enlighten the consumers of vegetable oil to buy from accredited dealers, so that incase of any adulteration of the product it can be easy traced, given that there knowledge of safety information was very low.

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