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Consumers' Understanding and Usage of Food Labels in Purchasing Decisions in Kwara State, Nigeria

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Abstract

Food labels are the primary means of educating consumers on packaged content. With the rising urbanization in Nigeria and its corresponding change in lifestyle toward increased consumption of packaged food products, it is crucial to deepen consumers' knowledge of food labels. The study aimed to evaluate consumer awareness of food labels in Kwara State, Nigeria; understand their impact on purchasing behavior, analyze the factors influencing consumer understanding of food labels, and identify constraints to their usage. A total of 150 randomly selected respondents provided primary data, which was analyzed using descriptive statistics and ordinal logit regression. The patrons were youthful (38.6years), mostly educated, with 65% being female, and 40% belonging to less than 4 member-households. Food labels were unimportant to 17% of the respondents whereas 17% were knowledgeable about food labelling. Only 11.3% of the respondents are very intentional in their use of food labels in making decisions. About 68.2% of respondents don't check allergen information on labels, 60% lack knowledge about food regulatory bodies in Nigeria, and 22% find food label quality irrelevant to purchasing behavior. Determinants of consumers' level of understanding include: (+) educational status, product health claims, health knowledge, consumer's health status, (-) language/terminology, label orientation, and gender ($p < 0.05$). The study reveals that consumers' awareness and usage of food labels in Kwara State are significantly low due to language complexity, time factor, and language barriers. We recommend manufacturers and regulatory agencies to develop standardized, legible labels and focus on local language labeling for better inclusion.

Keywords: Diet, Food labels, Overweight and obesity, Health claims, Nutritional information

Introduction

Despite the staggering number of Nigerians living below the food security line and the additional 25 million at risk of becoming food insecure in 2022-23 period (UNICEF,2023), the challenge of health issues such as obesity, metallic syndrome and cancer remains a concerning subject in the country. The worries around these health issues are wide spread and have been linked to poor dietary habits (Labban 2022; Juul, Vaidean, and Parekh, 2021). For instance, obesity has been recognized by the World Health Organization as a public health challenge across lower income and

affluent countries alike for almost three decades (UNICEF, 2023; Ramalan, Gezawa, Musa, Uloko, and Fakhraddeen, 2023; WHO, 2000). Although several factors interplay to predispose individuals to being overweight or obese, the roles of diets and nutritional choices are overwhelming. Similarly, high-sodium diets have been linked to an increased risk of hypertension and cardiovascular disease. A lack of essential nutrients, which is frequently associated with poor dietary choices, can impair immune function and increase susceptibility to a wide range of infections and diseases (Juul, Vaidean, and Parekh, 2021). As a result, several countries across the world, especially in Global North, prioritize consumers' education on contents of their food choices.

Food labels represent the primary approach adopted to educate consumers on contents and nutritional attributes of food products. There are considerable variations as to how food products are labelled from one country to the other (Dinardo, Fierro, del Giudice, Urbani and Fiocchi, 2023). However, minimum acceptable standards have been successfully established on country basis. While the more developed countries are driving policies to further strengthen food labelling by industries and health advocates are pushing for accountability in the packaged food industries, many developing countries continue to remain casual on the discuss. There is scanty literature to support that the various parties involved such as government, regulatory bodies, food manufacturers, and even consumers are thorough in their responsibilities in policy processes, regulation, information supply, and the use of such food labelling information.

Evidence exists that obesity is becoming increasingly prevalent across demographics in Nigeria. For instance, a study carried out in Nigeria and Ghana by Akpa, Okekunle, Sarfo, Akinyemi, Akpalu and Wahab *et al* (2023) revealed that up to 47.5 percent of the participants were overweight or obese. An analysis of the 2018 Nigeria Demographic Health Survey dataset also revealed the prevalence of obesity and overweight with varied findings depending on respondents' socio-demographic characteristics (Baruwa, Gbadebo, Adeleye, Tabana, and Fagbamigbe, 2023). Similar observations were reported in a study by Oluwasanu, Akinyemi, Oluwasanu, Oseghe and Oladoyinbo *et al.* (2023) where the authors found that incidences of obesity and overweight significantly increased among students over the 10-year period considered in a tertiary institution in South-western Nigeria.

It is plausible that there are linkages between food labelling and the ability of consumers to make informed health choices concerning their diets. In that case, addressing the part of obesity and overweightness challenge that is attributable to diets should have at its departure point the appropriateness of food labels that are made available to consumers and ultimately the proper usage of such information by consumers. We therefore carried out this study to answer the following research questions: Firstly, what is the level of consumer awareness of food labels in Kwara State, Nigeria? Secondly, how do food labels affect consumers' purchasing behavior

in the study area? Thirdly, what are the factors influencing consumers' understanding of food product labels in the study area? Lastly, what are the constraints to consumers' usage of food labels?

The justification for this study arises from the fact that a good understanding of food labels is fundamental to consumers' ability to make informed choices concerning the products they consume. This is particularly important considering the increasing level of urbanization in Nigeria with corresponding changes in lifestyle toward a rise in consumption of out-of-home, ready-to-eat, and processed food products. Consumers' inability to make crucial and informed choices may consequently have health implications. To stem this challenge, it is crucial to first gain insight into consumers' awareness and usage of food labels on products. Having this knowledge will serve as a foundation to bringing food producers up to standard in terms of what information they make available on food labels and in the most appropriate version for consumers' understanding. On the other hand, this research will help unfold how information can be best passed on to end users who are consumers of these food products. Finally, this research will provide crucial insight that can drive policies toward improving consumer knowledge, safeguarding public health, ensuring regulatory compliance, enhancing marketing strategies, and promoting transparency in the food industry.

Methodology

Area of study

The study was conducted in Kwara State, Nigeria (Figure 1). This state lies on 8°30'0.00" N and 5°00'0.00" E and is located in North Central Nigeria. There are 16 Local Government Areas in Kwara State (Ayinde *et al.*, 2023).

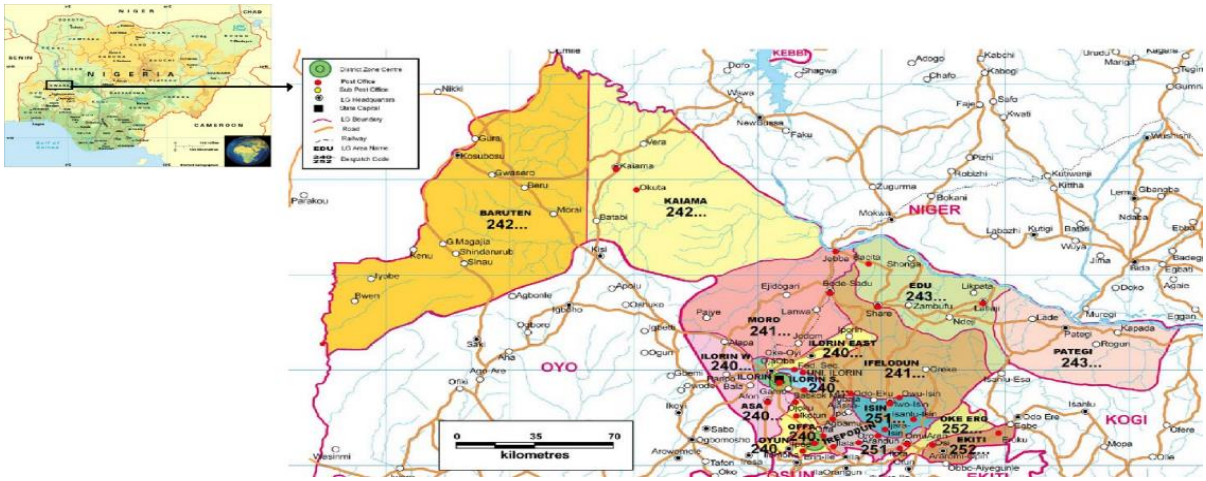

Figure 1: Kwara State, Nigeria (Source: https://nigeriazipcodes.com/451/kwara-state-zip-code-map

Kwara State currently occupies a total land mass of about 36,825 square kilometres and has an estimated population of 3,033,072 (National Bureau of Statistics, 2018). It consists of sixteen Local Government Areas (LGAs) with the state Capital situated in

Ilorin. Over the past two decades, the population of Ilorin, the Kwara state capital has experienced exponential growth as compared to other towns in the state, clearly indicating growing urbanization. Currently, the state capital's population stands at 1,128,094 which is over 37% of the state.

Given the peculiarity of this study on food labels, we focused on the urban areas of the state. In most cases, people living in the urban areas are the ones with ready access to stores and supermarkets that stock packaged food products which are of interest in this research. Moreover, the busy lifestyle of urban dwellers makes them more attuned to purchasing such food products than their rural counterparts. Generally, urban areas are characterised by higher population densities, higher literacy rates, a larger number of institutions, greater access to modern amenities and infrastructure, and a more diverse and cosmopolitan population all of which matter, based on our interest in this study.

Sampling Technique

We selected the sample for this survey in a three-stage sampling procedure. In Stage 1, we purposively selected three urban cities in the state namely; Ilorin, Offa, and Omu-Aran. The second stage entailed a random selection of ten locations from the listing of stores, supermarkets, and malls in each of the cities. The listing of the markets was created during an initial reconnaissance survey that was conducted across the study locations as there were no existing up-to-date records of relevance to this study. In the third stage, we employed a systematic sampling technique to select every 5^{th} patron that approached the shelves to make purchases in each of the stores, starting our selection from a random point at each of the store. A total of 150 respondents were selected for this study. However, only 140 of these were found to be useful for our analysis.

Data Collection

Data for this study was collected using a semi-structured questionnaire which was administered to the respondents. The questionnaire was designed to collect information on the consumers' awareness of food product labels, their reading habits, and their preferences for certain types of information on food product labels. Before administering the questionnaire, we obtained informed consent from the participants and ensured their anonymity and confidentiality were protected throughout the data collection process. Secondary information was collected through a review of relevant literature, reports, and databases on food labelling regulations, consumer behaviour, and other related topics. We also reviewed the labelling practices of food manufacturers and retailers in Kwara State to gain insights into the information that is typically provided on food product labels in the state.

Analytical Techniques

Descriptive statistics was used to assess the level of consumer awareness of food labels in the study area. Using descriptive statistics, we also examined how food labels affect consumers' purchasing behavior in the study area. For the third objective which is to assess the factors influencing consumers' understanding of food product labels, we employed the ordinal logit regression model based on maximum likelihood. The ordered logit regression model is a regression model for ordinal dependent variables which was first considered by McCullagh (1980). The intuition behind the ordered logit regression model is that we have an underlying latent variable y^*, and that as people cross thresholds on this underlying variable, their values on the observed ordinal variable *y* changes. It follows that if the underlying process being described is written as:

$$y^* = x^T\beta + \varepsilon \ldots\ldots(i)$$

Where y^* is the exact, albeit, unobserved dependent variable, x is the vector of independent variables, ε is the error term, and β is the vector of regression coefficients to be estimated. Having established that y^* is unobservable, we can only observe the categories of responses of *y* which is stated as:

$$y = \{0 \ if \ y^* \leq \mu_1, \quad 1 \ if \ \mu_1 < y^* \leq \mu_2, 2 \ if \ \mu_2 < y^* \leq \mu_3, \ldots \quad N \ if \ \mu_N < y^* \quad \ldots\ldots\ldots\ldots(ii)$$

Where parameters μ_i are the externally imposed endpoints of the observable categories. Then the ordered logit technique will use the observations on *y*, which are a form of censored data on *y**, to fit the parameter vector *β*.

The ordered logit model is therefore expressed as:

$$Log\left[\frac{y_j(x_i)}{1 - y_j(x_i)}\right] = \mu_j - (\beta_1 x_{1i} + \beta_2 x_{2i} + \cdots + \beta_k x_{ki}) \ldots\ldots\ldots\ldots(iii)$$

Where *j* = 1,..., *j*; I = 1,..., n; y_j is the cumulative probability which is defined as $y_j(x_i) = y(\mu_j - \beta' x_i) = P(y_i \leq j|x_i)$; β_i represents the column vectors of the parameters $\beta_1, \ldots, \beta_k$ while x_i is the column vectors of the independent variables.

The variables included in our model are: Variables included in our model are, x_1= Age (yrs), x_2 = Educational status (yrs), x_3 = clarity of labels (indexed), x_4 = label design (indexed), x_5 = language and terminology (dummy), x_6= nutritional information (indexed), x_7 = health claims (dummy), x_8= orientation of labels on products (dummy-front or back), x_9 = quality of packaging (indexed?), x_{10} = health knowledge (indexed), x_{11} = consumer's health status (ordinal scale), x_{12} = awareness of diet-health relations (indexed), x_{13} = Gender of consumer (dummy), $\boldsymbol{\varepsilon}$ = random error, and y_i = levels of understanding of food product labels categorized as high, moderate, and low. For the

fourth objective which was to assess the constraints to consumers' usage of food product labels in the study area, we analysed using the Likert-type scale.

Results and Discussion

The socioeconomic characteristics of the consumers patronizing stores where packaged food products are sold are presented in Table 1.
As shown in the table, the average age of this category of consumers is 38.6years and the majority (54.28%) of them are young and below age 35. Up to 65% of the respondents were female. This may largely be because females are more likely to oversee food decision making and or purchasing in the households. This finding aligns with that of Aremu *et al.* (2023) where the authors highlighted the roles women play in household food security.

Table 1: Socio-economic Characteristics of the Packaged Food Store Patrons (n=140)

Variables	Frequency	Percentage	Mean
Age			
<25	12	8.57	38.6yrs
25-34	64	45.71	
35-44	42	30.00	
>44	22	15.71	
Gender			
Female	91	65.00	
Male	49	35.00	
Household size			
<4	56	40.00	5.62Ind
4-6	48	34.29	
7-9	25	17.86	
>9	11	7.86	
Educational level			
No formal education	11	7.86	17.5yrs
Primary education	17	12.14	
Secondary education	36	25.71	
Tertiary education	76	54.29	
Occupation			
Student	40	28.57	
Civil servant	17	12.14	
Private/Professional	52	37.14	
Trading	19	13.57	
Artisans	12	8.57	
Monthly income			
≤₦50,000	32	22.86	₦92,005.50
₦50,001 - ₦75000	28	20.00	
₦75001 - ₦100,000	26	18.57	
₦100,001 - ₦125,000	38	27.14	
>₦ 125,000	16	11.43	

Source: Field Survey 2023

We found the average household size to be slightly more than five individuals. However around 40% of the respondents belonged to households with less than four members.
Majority of the respondents were educated with almost 54.3% of them having tertiary education and above. Only 7.86% of the respondents had no form of formal education. The modal occupation category was that of professionals employed in the private sector while students accounted for almost 29% of the respondents.

On average, we found the monthly income of the respondents to be ₦92,005.50 whereas only 11.43% earned incomes above ₦ 125,000 per month. This is an indication that income levels were relatively low among the sampled population in the state as compared to earnings in some other states.

Consumer Awareness of Food Labels in the Study Area

In Table 2, we present our findings on the level of consumer awareness of food labels in the study area. We found that about 54.3% of the respondents agreed that they pay cursory attention to the information provided on food product labels and 28.6% affirmed that they pay more detailed attention to food labels. However, more than 17% of the respondents submitted they were neutral, suggesting that checking food product labels was not a priority to them when they go shopping for packaged food items. Further questioning revealed that all the respondents who were neutral had at one point in time or the other erroneously bought expired products from the store, only realizing long after they might have taken the products away from the store.

Table 2: Level of Consumer Awareness of Food Product Labels

	Responses				
Consumer awareness of food product labels	**SD**	**D**	**N**	**A**	**SA**
I pay attention to the information provided on food product labels	-	-	24(17.1)	76(54.3)	40(28.6)
I am aware of the different types of labels found on food products	4(2.9)	12(8.6)	16(11.4)	84(60.0)	24(17.1)
I understand the meaning of nutritional information on food labels	4(2.9)	12(8.6)	24(17.1)	76(54.3)	24(17.1)
I read the ingredient list on food labels to make informed decisions	4(2.9)	4(2.9)	32(22.9)	84(60.0)	16(11.4)
I check the expiry date on food labels before purchasing	-	-	28(20.0)	62(44.3)	50(35.7)
I look for allergen information on food labels	4(2.9)	32(22.9)	60(42.9)	24(17.1)	20(14.3)
I consider the country of origin when buying food products	4(2.9)	32(22.9)	64(45.7)	24(17.1)	16(11.4)
I am aware of the regulatory bodies responsible for food product labelling	24(17.1)	32(22.9)	28(20.0)	38(27.1)	18(12.9)

Source: Field survey, 2023 SD Strongly disagree, D Disagree, N Neutral, A Agree, SA Strongly agree; (%) in parenthesis

As shown in Table 2, only about 17% of the respondents were knowledgeable about the different types of labelling on packaged foods for the various classes of information on the labels. More than 10% of the respondents categorically stated that they had no idea what the labels were about, whereas 11.4% were not convinced that they understood food product labels. This may be attributed to the fact that one's ability to read and write may be a factor in having such knowledge on food labelling. Suffice to say that people who are not formally educated may be impaired on this knowledge, given their educational status.

Our study revealed somewhat similar results along with the respondents' awareness of the different types of labels found on food products and their perception of what such nutritional information on the food labels means. We found that 11.3% of the respondents are very intentional in their use of food labels to make informed purchase decisions whereas about 60% of the respondents would casually read the list of ingredients on the food labels to make a purchase decision. We found that about 6% of the respondents do not read food ingredients lists at all when making purchases as they most likely opt for products, they are already familiar with or that they find appealing when shopping in-store. Almost 23% of the respondents were neutral on how reading the ingredients list on food labels may be used in their making informed food purchase decisions, hence, suggesting that the ingredients list is inconsequential for this category of patrons.

It was interesting to find out that majority of the respondents paid attention to the expiry date when making packaged food product purchase in the stores. Up to 20% of the respondents however stated that they are neutral, suggesting that they do not particularly check product expiry dates. We probed further with this category of people and their reason was mainly that they would not expect stores to shelve expired products. Incidentally, most of these respondents stated that they had experienced service failures in that regard in the past and their response to that was to change to more reputable stores and not particularly a change in their attitude towards checking for expiry dates.

Up to 31.4% of the respondents stated that they check for allergen information on food labels whereas almost 26% do not pay any attention to allergen. About 43% of the patrons were also neutral on allergen information. This may be attributable to the fact that an individual's allergy has a role to play in what they tend to give attention to, suggesting that those who particularly pay attention to that bit of information are probably affected by such allergies. It is however worth mentioning that we sampled hundreds of products on the shelves and there was limited information related to allergies on most of the products. This may probably be because many of the products were locally manufactured and have less stringent policies guiding their approach to food labelling.

In terms of the countries that products originated from, up to 11.4% of the respondents stated that their purchase is guided by this information as they have preference for

imported products above locally manufactured ones. About 17% of the respondents stated that they also pay attention to the country of origin of products, but they are not compelled to be guided by this information in making their food purchases. About 26% and 46% of the respondents respectively, do not give any consideration whatsoever to the products' country of origin or find this information irrelevant to their food purchase decision-making. We found that 40% of the respondents were not aware of the regulatory bodies responsible for food product labelling in the country. This is a cause for concern because it suggests that such consumers are vulnerable to purchasing adulterated or unregulated products. Surprisingly, 20% of the respondents were also uncertain of the regulatory bodies responsible for food product labelling in the country. Only 40% of the respondents had definitive knowledge on the regulatory bodies we have in the country.

Food Products Labelling and Consumer Purchasing Behaviour in Kwara State

We assessed how the quality of food labelling affects consumers' purchasing behaviour in the study and the result is presented in Figure 1. We found that for 22% of the respondents, the quality of the food labelling does not impact on their purchasing behaviour. This category of respondents indicated that they are not particularly interested in the food label as long as a product is what they require. Many of these respondents stated that several excellent locally produced food items are unable to carry on the process to enable them to appropriately label products because of the stringent rules set by the primary regulatory body. Some of the respondents opine that such procedural policies are merely exploitative on the emerging local manufacturers and as such consumers may disregard the absence of labelling and rather purchase products that they deem good enough.

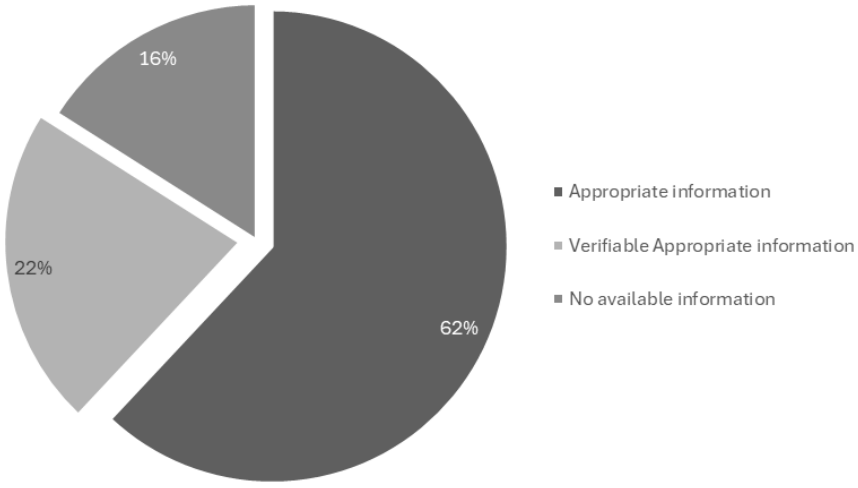

Figure 1: Quality of Food Labelling and Consumer Purchasing Behaviour

We found that the purchasing behaviour of 62% of the respondents was informed by the presence of appropriate information on the labelling of food products they want to purchase. In other words, these consumers looked out for the relevant information to them on the food products before making a purchase decision. However, up to 16% of the food buyers would look beyond the food labelling to check that the product is endorsed by the primary food regulatory body before making the decision to purchase. The purchasing behaviour of this category of buyers is therefore influenced not only by the presence of appropriate labelling on the product but also on the endorsement of the product by NAFDAC irrespective of whether the product is locally or internationally originated. Previous studies on sustainably labelled food products (Majer *et al.*, 2022; Thøgersen and Nielsen, 2016; Atkinson and Rosenthal, 2014, and Gordon *et al.*, 2011) have reported somewhat similar insight in that third-party labels generally tend to gain higher consumer trust than corporate-based information. Our finding that buyers look beyond labelling to endorsement by regulatory bodies on the label further asserts what has been found in previous studies.

Determinants of Consumers' Understanding of Food Product Labels

Our findings on the factors that influence consumers' understanding of food product labels are presented in Table 3. Overall, our model is of good fit with a likelihood ratio with chi-squared value of 163.16 ($p<0.00$) hence, indicating the model is statistically significant without the predictor variables. A pseudo-r-squared of 62.6% was also observed suggesting that our model is of good consideration for predictions. To ascertain the validity of our model, the parallel regression or proportional odds

assumption test was carried out. The test returned a result of likelihood-ratio chi-squared value of 44.62 with a p-value of 0.382 providing evidence that the parallel regression assumption has not been violated. The null hypothesis that there is no significant difference in the coefficients between the models is therefore accepted which validates our estimation.

Table 3: Factors Influencing Consumers' Understanding of Food Product Labels

Variables	Coefficient	Std. Error	P-value
Constant	0.411	0.197	0.497
Age	0.312	0.531	0.105
Educational Status	0.249**	0.430	0.043
Clarity of label	0.447	0.575	0.208
Label design	-0.764	0.311	0.712
Language and terminology	-0.402**	0.495	0.045
Nutritional Information	0.381	0.437	0.734
Health claims	0.212**	0.367	0.005
Orientation of label on products	-0.561**	0.838	0.019
Attractiveness of packaging	0.265	0.370	0.608
Health knowledge	0.493**	0.613	0.003
Consumer's health status	0.395**	0.546	0.031
Awareness of diet-health relations	0.746	0.425	0.547
Gender	-0.359**	0.527	0.042
Mean dependent var 4.274	S.D. dependent var 3.652		
Log-likelihood −218.342	Akaike criterion 298.502		
Schwarz criterion 255.915	Hannan-Quinn 316.76		
Number of obs = 140	Number of cases 'correctly predicted' = 114 (81.43%)		
LR Chi-squared (13) = 163.16			
Prob > chi2 = 0.0000	Approximate likelihood-ratio test of proportionality of odds across response categories:		
Pseudo R squared = 0.626	Chi-squared(13) = 44.62		
	Prob > Chi-squared = 0.382		

Source: Data Analysis, 2023

We found that the educational status of the food product buyer, health claims made on products, health knowledge, and the consumer's health status are the factors that were significant in positively influencing the consumers' understanding of food product labels. On the other hand, the language and terminology used on the label, the orientation of the label on the products, and the gender of the buyer were the factors that had negative influences on the consumer's understanding of the food product labels.

We found that one unit increase in the years of schooling of the food product buyer results in a 0.249 unit increase in the log odds of the food buyer having a higher threshold of understanding on food product labels given all other variables in the model are held constant. This agrees with the findings of Ajibade *et al.* (2017) in their work on assessment of consumers' awareness and willingness to pay for organically produced fruits in Kwara State, Nigeria who found that more educated consumers tend

to understand nutritional contents and quality of food better. As presented on the table, increase in the prominence of health claims made by the manufacturer of a product increased the log odds of the food buyer having a higher threshold of understanding of the food labels by a factor of 0.212units.

It was found that with increase in the health knowledge and the consumer's own-health status, the log odds of the consumer's understanding of food product labels increased by 0.493 and 0.395 units respectively. Our findings aligned with that of Franco-Arellano *et al.* (2020) who reported that drinks displaying a disease risk reduction claim were perceived as *healthier* than those without such claims, regardless of product's actual healthfulness. We did not find nutritional information to have significant effect on consumers' understanding level. Similarly, to Franco-Arellano *et al.* (2020) reported that the effect of a nutrient content claim was not significant as well.

As shown on Table 3, the use of language and terminology that are not plainly understood by the consumers reduced the log odds of having a higher threshold of food product label understanding by a factor of 0.402. In the cases where the label was placed further back and below the food product, the log odds of consumers having a higher threshold of knowledge on the products were reduced by a factor of 0.561. Our finding is in tandem with previous research by Dubois et al. (2021), Crosetto et al. (2020), Cadario and Chandon (2019), and Hawley et al., (2013) who found that positioning nutrition information as front-of-pack (FOP) labels was better acceptable to consumers as they believe it helped them make healthier choices with their foods. We also found that being male decreased the log odds of the consumer being in a higher threshold of knowledge concerning food labelling. This may be an indication that women are more conscious of the food products that they purchase probably because they take more deliberate actions in that regard.

Constraints to Consumers' Usage of Food Labels

The findings from the Likert-type scale used to assess the constraints to the usage of food product labels in the study area are presented in Table 4. We found that the complexity of the language and terminology ranked first among the constraints, with a mean score of 3.63. This hence suggest the need to keep food labeling information simple and relatable for the layman.

With a mean score of 3.57, time ranked as the second highest constraint. We found that many of the food buyers were constrained for time, and they fingered this as an excuse on why they are unable to make adequate use of food product labels. Many of the respondents would rather opt for a familiar product or ask for in-store recommendation or quick review of the products rather than take the time to read through food labels.

Table 4: Constraints to the Usage of Food Labels in Kwara State

	Responses						
Challenges	**SD**	**D**	**N**	**A**	**SA**	**Mean Score**	**Rank**
Time Constraints	-	24(17.1)	36(25.7)	56(40.0)	24(17.1)	3.57	2nd
Lack of Knowledge and Understanding of Food Product Labels	4(2.9)	28(20.0)	56(40.0)	20(14.3)	32(22.9)	3.34	8th
Complexity Of Terminologies	4(2.9)	16(11.4)	44(31.4)	48(34.3)	28(20.0)	3.63	1st
Small Print on Food Product Labels	4(2.9)	36(25.7)	28(20.0)	44(31.4)	28(20.0)	3.40	6th
Language Barrier	8(5.7)	20(14.3)	40(28.6)	32(22.9)	40(28.6)	3.51	3rd
Product packaging and design of Food Product	4(2.9)	24(17.1)	32(22.9)	60(42.9)	20(14.3)	3.43	5th
Limited Health Literacy	8(5.7)	24(17.1)	36(25.7)	44(31.4)	28(20.0)	3.37	9th
Lack of Trust on Food Labels	8(5.7)	12(8.6)	52(37.1)	32(32.9)	36(25.7)	3.51	4th

Source*:* Field survey, 2023

Language barrier ranked as the third most significant constraint with a mean score of 3.51. Almost 52% of the respondents indicated that their inability to understand the language in which many food product labels are written constitute why they are unable to make use of food labels in making their purchase decisions. Labels can act as effective signals only to the degree that consumers can recognize them, understand their basic meaning, and deem them both useful and credible (Rossi and Rivetti, 2023; D'Souza *et al.,* 2019; Annunziata *et al*., 2019), hence necessitating the cruciality of ensuring consumers can understand product labels such that enable them to make informed purchase decisions.

Conclusion and Recommendations

We conclude that the awareness and usage of food product labels among consumers is considerably low in Kwara State. This is of concern, especially given the high literacy rate among the respondents which one would have expected to translate to enhanced usage of product label. The low usage of product labels needs to be promptly addressed in the study area because it presents a loophole in food safety with strong health implications among consumers. This is especially important because evidence exists that the recent urbanization and civilization have been accompanied by increased demand in the processed products under study (Abioye *et al.*, 2020). This

is a pointer on the need for periodic campaigns and awareness creation by National Agency for Food and Drug Administration and Control, the primary food regulatory body in Nigeria, and other related organizations such as the Standard Organization of Nigeria and Federal Ministry of Health, among others.

We recommend that primary food regulatory bodies in the country should address the bureaucracy in the procedural process inhibiting small manufacturers from being able to meet the expected requirements in food labelling. Given that language, terminology, and the orientation of labelling on food products are crucial to consumers' usage and understanding of food labels, manufacturers and regulatory agencies should come up with standardized labels that are easy to understand by laypersons. The consumers' health knowledge and food health claims have been shown to influence the understanding and usage of food labels. It therefore becomes important to promote knowledge sharing to facilitate communication of information to consumers through other available means beyond food labels. This will help equip buyers with information prior to making purchase decisions.

The fact that majority of the consumers were satisfied with food labels on products, irrespective of regulatory endorsement status, calls for urgent action toward sensitization on genuineness of food labels. Store managers and owners must be educated on quality assurance of their inventories. For locally manufactured products for domestic distribution, manufacturers should consider labelling with local languages for inclusion, especially in regions where language poses the highest barrier. We also recommend the need for National Agency for Food Drugs Administration and Control (NAFDAC), Standards Organisation of Nigeria (SON), and National Codex Committee (NCC) to synergize efforts at improving the food safety situation in Nigeria given the existing opportunities for the subsector to mainstream Nigeria-manufactured food products into international markets if food safety concerns are adequately addressed.

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