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USE OF FOOD LABELS BY HOUSEHOLDS FOOD PREPARERS IN AKWAIBOM STATE, NIGERIA

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Abstract
Food labels are a contemporary tool for disseminating food product, health and nutrition, and differentiation of information to consumers. This study, adopted a two-stage sampling method, collected cross-sectional data from 457 respondents, and analysed the use of food labels by household food preparers in AkwaIbom State, Nigeria. Mainly, the study described the prevalence, margin and intensity of use of food labels by respondents. Additionally, it determined the factors influencing the use of food labels by household food preparers. Almost all respondents were married females about 41years old, household size of 5persons, monthly income of N94,793 and spent about 13years acquiring formal education. Descriptively, mean use of food label index as threshold showed that 58.42% of household food preparers had sufficient use of food labels; about 8 items on the list presented were viewed. Furthermore, gap of 4 items between those that have sufficient and less than sufficient use of food labels were additionally identified. The gap between the two categories was more severe when two-thirds of the mean is adopted as critical index. Age ($p \leq 0.01$), education ($p \leq 0.01$), confidence in safety labels ($p \leq 0.01$) and household income ($p \leq 0.05$) were significant factors influencing the probability of a household food preparer having sufficient use of food labels. Stimulation of use-driven programmes, by governmental and non-governmental organisations are recommended to bridge the gap between those that have less than sufficient and sufficient use of food labels.

Keywords: food labels, prevalence, margin, intensity, fractional probit, and Nigeria

Introduction

Generally, a food label can simply be seen as a source of information as regards a given product item. Specifically, the information provided by the label would include, but not be limited to the following: common name, list of ingredients, net quantity, shelf life, grade/quality, vegetarian society logo, country of origin, name and address of manufacturer, dealer or importer and food standards agency. Additionally, a label, usually, is a source of health related information, namely: instructions for safe storage, handling, nutrition information such as quantity of fats, protein, carbohydrate, vitamins & minerals and preservatives, colours, quantity per serving of stated size of food (in the nutrition facts table) and specific information on products for special dietary use. Further on, a label can serve the purpose of advertising (Donga and Patel, 2018).

Contemporary research has continually highlighted the fact that many diseases are diet-related and can be, for the most part, prevented through consuming the right kind of diet. Therefore, to adjust one's eating pattern in a bid to ward off diseases, nutritional information is required and hence the pertinence for the study of use of food labels (Cunningham and Sobolewski, 2011). Food labels provide the basis for consumers to make informed choices as regards their food preferences. It is also worthy of note that a lot of countries, developed and developing alike, employ food labels as an instrument of policy to be enforced by regulatory agencies in order to ascertain the response of consumers to nutrition cum health related information. Furthermore, food companies use labels to advertise and highlight salient differences in their product (Kaur *et al*., 2016). In Nigeria, literature review uncovers several studies bordering on the subject of the awareness and use/utilization of food labels (Oghojafor *et al*., 2012; Falola, 2014; Olatona *et al*., 2019; Opara and Madukosiri, 2016).

In addition, this study is more incisive in its approach as it begins with dichotomising households into those that have less than sufficient and sufficient use of food labels and then proceed to measure the prevalence, margin and intensity of the use of food labels, while applying a

fractional probit regression to estimate the factors influencing the use of food labels.

Methodology

Study Area

The study was conducted in AkwaIbom State. The State is located in the South-South geopolitical and South East ecological Zones of Nigeria. It is one of the Niger Delta States. The State lies between 4º33″ and 5º33″ North latitudes, and 7º35″ and 8º25 East longitudes. The estimated total area is put at 7,245,935km^2, and has a shoreline of 129km on the Atlantic Ocean to the South. It shares borders with Cross River State to the East, Abia State to the North, and Rivers State to the West (Ajana, 1996 and Uwatt, 2000). The 2006 provisional census puts the population at 3.92m (2.04m males and 1.87m females).

Data Collection

Data for the study was cross-sectional. This primary data was obtained using a structured questionnaire that was administered to households. Furthermore, a multistage sampling procedure was applied in the study. In the first stage, three Agricultural Zones were randomly selected out of the six agricultural zones, namely: Uyo, Eket and IkotEkpene. Next, three Local Governments Areas (LGAs) each were purposively to give urban, semi-urban and rural representation to the study. Third, six communities were randomly selected from each of the selected LGAs. In the last stage, 10 households were randomly selected, giving a total of 540 households (180 from each selected Zone). However, 457 questionnaires were properly collated and analysis based on this number. Data was collected in 2018.

Estimation Procedure

Prevalence, Margin and Intensity

The estimation of prevalence, margin and intensity, modified to fit current context, followed Udoh and Udoh (2020) who computed the prevalence, margin and intensity of food safety practices among household food preparers in AkwaIbom State. This study, however, redefines and subsequently computes the named parameters in the context of the use of food labels. This is done by first creating use of food labels index, *ufli*, which is subsequently explained. In this study, ten items (Appendix 1), which generally appear on packaged foods, are used as the basis for analysing the prevalence, margin and intensity of less than sufficient (and sufficient) use of food labels in the study area. The ten (10) items are categorised into low, medium, and high, based on how many of these items are usually checked by the food preparer – 0 – 4 items (low); 5 – 7 items (medium); and 8 –10 items (high). The prevalence, margin and intensity of use of food labels are reported based on three critical indices used to dichotomize households that have less than sufficient use and sufficient use. One of the indices is the upper medium range score, 7, expressed as a proportion of all the items (10) (= 0.7). The second index, 0.62, is the mean *ufli* (use of food label index, obtained by the number of items selected by the food preparer expressed as a proportion of all the items) and the third, 0.42, is 2/3 of the mean *ufli*. The *ufli* is a score representing the number of items for which a household food preparer reports use of, expressed as a proportion of the total number of items presented.

***Prevalence*:** Based on the three critical indices 0.70, 0.62 and 0.42, three measures were used to describe the prevalence of less than sufficient and sufficient use of food labels by households in the study area.

Percentage Prevalence: The first measure is simply a percentage of households who fall below (less than sufficient) and above/equal to (sufficient) the critical scores. This measure uses an indicator function that takes on a value of 1 for less than sufficient (and sufficient) use of food labels by household food preparers, alternatively, and expressed as a proportion of the total number of households. This is given as:

$$ufli_{pp} = \sum_{i=1}^{N} 1(ufli < 0.7)\, {}^{1}/_{N} \ldots\ldots\ldots\ldots\ldots\ldots .1$$

$$ufli_{pp} = \sum_{i=1}^{N} 1(ufli \geq 0.7)\, {}^{1}/_{N} \ldots\ldots\ldots\ldots\ldots\ldots .2$$

Where,

N = total number of households (= 457)

$ufli_{pp}$ = Percentage prevalence of use of food labels

N/B: 0.7 is successively substituted for 0.62 and 0.42- the other two critical scores earlier defined.

Disaggregated mean Prevalence: A second measure of prevalence is also obtained. This is essentially a mean computed based on actual values of *ufli* (as opposed to the use of an indicator function that assigns 1 to households that have less than sufficient and sufficient use of food labels, alternatively). Multiplying the values of the disaggregated mean prevalence by ten (10), the total number of label items presented gives the number of label items household food preparers with less than sufficient and sufficient use of food labels actually looked for. Additionally, from this measure, the exact gap in use of food labels between respondents with less than sufficient and sufficient use of food labels can be estimated. This measure is obtained as follows:

$$ufli_{pa} = \sum_{i=1}^{N} (ufli < 0.7)\, {}^{1}/_{n} \ldots\ldots\ldots .3$$

n = number of households with *ufli*< 0.7

$$ufli_{pa} = \sum_{i=1}^{N} (ufli \geq 0.7)\, {}^{1}/_{n} \ldots\ldots\ldots .4$$

n = number of households with *ufli* ≥ 0.7

$ufli_{pa}$= Disaggregated mean prevalence of use of food labels.

N/B: 0.7 is successively substituted for the other two critical indices 0.62 and 0.42. The values of n are similarly substituted to reflect what is obtainable

considering the other two critical scores.

Weighted Mean Prevalence: A third measure of prevalence of household food preparers' with less than sufficient (and sufficient) use of food labels is basically a weighted mean for households in both categories. The weights used are the sum of the *uflii* of households that portray less than sufficient (and sufficient) use of food labels expressed as a proportion of the total *ufli* for all households in the study area.

$$ufli_{wpa} < 0.70 = \overline{ufli} \times \frac{\sum ufli < 0.70}{\sum fski} \ldots\ldots\ldots 5$$

$$ufli_{wpa} \geq 0.70 = \overline{ufli} \times \frac{\sum ufli \geq 0.70}{\sum ufli} \ldots\ldots\ldots 6$$

$\overline{ufli}$ = Mean use of food labels index

$ufli_{wpa}$ = Weighted mean prevalence of use of food labels

N/B: 0.70 is successively substituted for 0.62 and 0.47- the other two critical scores earlier defined.

***Margin*:** The mean margin and mean proportionate margin are the measures of the margin, which is basically a deviation from the threshold score by households with less than sufficient use of food labels in the study area. These two measures are computed based on the number of uninformed households and all households in the study area-the rationale for this being that the number of households with less than best practices and all the households provide the basis for conclusion in terms of targeted interventions (ones geared towards households with less than sufficient use of food labels) and untargeted ones (ones spread across all households).

Mean Margin: This measure of the margin is obtained as follows:

$$ufli_{mm} = \sum_{i=1}^{N} (0.7 - < 0.7) \frac{1}{N} \ldots\ldots\ldots 7$$

N = total number of households (= 457)

$$ufli_{mm} = \sum_{i=1}^{N} (0.7 - < 0.7) \frac{1}{n} \ldots\ldots\ldots 8$$

n = number of households with *ufli*< 0.7

$ufli_{mm}$ = Mean margin of use of food labels

N/B: 0.7 is successively substituted for the other two critical scores 0.62 and 0.42. Similarly corresponding values of n for 0.62 and 0.42 are accordingly substituted.

Mean Proportionate Margin: This measure of the margin is given as follows:

$$ufli_{mpm} = \sum_{i=1}^{N} \left(\frac{0.7 - < 0.7}{0.7}\right) \frac{1}{n} \ldots\ldots\ldots 9$$

n = number of households with *ufli*< 0.7

$$ufli_{mpm} = \sum_{i=1}^{N} \left(\frac{0.7 - < 0.7}{0.7}\right) \frac{1}{N} \ldots\ldots\ldots 10$$

n = number of households with *ufli*< 0.7

$ufli_{mpm}$= Mean proportionate margin of use of food labels

N/B: 0.7 is successively substituted for the other two critical scores 0.62 and 0.42. Similarly corresponding values of n for 0.62 and 0.42 are accordingly substituted.

***Intensity*:** This measure is obtained as follows:

$$ufli_{in} = \sum_{i=1}^{N} \left(\frac{0.7 - < 0.7}{0.7}\right)^2 \frac{1}{n} \ldots\ldots\ldots 11$$

n = number of households with *ufli*< 0.7

$$ufli_{in} = \sum_{i=1}^{N} \left(\frac{0.7 - < 0.7}{0.7}\right)^2 \frac{1}{N} \ldots\ldots\ldots 12$$

N = total number of households (= 457)

$ufli_{in}$ = Intensity of use of food labels

N/B: 0.7 is successively substituted for the other two critical scores 0.62 and 0.42. Similarly corresponding values of n for 0.62 and 0.42 are accordingly substituted.

Fractional Probit Regression

A fractional probit regression is usually estimated for models where the dependent variable is a fraction that lies between 0 and 1. This is the case for the dependent variable in this study, the *ufli*, number of items the respondent claims to read expressed as a function of the total number of items presented.

$$E(Y|x_i) = \Pr(Y = 0 \leq Y \leq 1|x_i) = F(\beta_0 + \beta_i X_i)$$

$$= \int_{-\alpha}^{\beta_0 \beta_i x_i} (2\pi)^{1/2} e^{\frac{\beta_0 + \beta_i x_i}{2}} d(\beta_0 + \beta_i X_i) \ldots\ldots\ldots 13$$

The list, codes and description of independent variables included in the regression are given in Table 1.

Table 1: Lists, Codes and Description of Variables used in Fractional Probit Regression

Variables	Codes	Description
Age[X_1]	Years	Continuous
Education[X_2]	Years	Continuous
Household Size[X_3]	Figures	Continuous
Monthly income of household head[X_4]	Amount [Naira]	Continuous
Children below 5 years[X_5]	Figures	Continuous
Adults above 65 years[X_6]	Figures	Continuous
Confidence in Safety labels	Yes=1,No=0	Dummy

Source: Field Survey, 2018

Results and Discussion

Summary Statistics of Continuous variables and Descriptive Statistics of Dummy Variables

Result (Table 2) indicates that the household food preparers have spent about 13 years acquiring secondary school education, suggesting moderate literacy. It further shows the presence of mean of 1 child below 5 years and 1 adult above 65 years.

Table 2: Summary Statistics of Continuous variables

Variables	Mean	Std. Dev.	Min	Max
Age (years)	41	11	18	78
Monthly income(figures in Naira)	94793.03	71297.76	10000	850000
Education (years)	13	4	0	23
Household Size (figures)	5	1	1	9
Children below five (5) years (figures)	1	1	0	6
Adults above 65 years(figures)	1	1	0	5

Source: Field Survey, 2018

Over 90% of the population are married and employed females (Table 3). This formed the basis for which marital status, gender and employment status as socioeconomic characteristics of the population were excluded from the fractional probit regression as these factors are almost completely determined.

Table 3: Descriptive Statistics of Dummy Variables (N= 457)

Variables	Frequencies	Percentages
Marital Status		
Single	40	8.75
Married	417	91.25
Employment Status		
Unemployed	12	2.63
Employed	445	97.37
Gender		
Male	1	0.22
Female	456	99.78
Confidence in Safety Labels		
Confident	336	73.52
Not Confident	121	26.48

Source: Field Survey, 2018

Prevalence, Margin and Intensity

Prevalence

The percentage prevalence (Table 4), based on the critical indices (0.7, 0.62 and 0.42) shows that 46.83%, 58.42% and 82.28% of household food preparers in the study area have sufficient use of food labels respectively. This implies that 46.83%, 58.42% and 82.28% of household food preparers view (study) seven (7) or more, six (6) or more, and four (4) or more items of the food label items presented. This is follows the findings of McLean-Meyinsse *et al*. (2011) who indicate that 59.4% of respondents read food labels. In tandem with these findings, Aryee *et al*. (2019) reported that 51.9% of consumers also read labels. Osei *et al*.,(2012) reported that about 80% of the respondents use food labels. in contrast, considering all three indices, Olatona *et al*. (2019) indicated that only about a third of his study area made good use of food labels. Reporting the disaggregated mean prevalence (Table 4), with 0.7 as critical index, 0.41 and 0.87 are the mean *ufli* for households that have less than sufficient and sufficient use of food labels, assuming that the households are split into these two categories respectively. This implies that household food preparers with less than sufficient (53.17%) and sufficient (46.83%) use of labels, given 0.7 as critical index read 4 and 9 items, respectively, out of the 10 items presented. Furthermore this uncovers a gap of 5 items between the two categories, thus implying that at this specific critical index, household food preparers with less than sufficient use will have to read

five more items to become sufficient in their use of food labels in the context of this study. Similarly, based on the mean *ufli* (= 0.62) as critical index, 0.35 and 0.81 are equal to the mean *ufli* for households that have less than sufficient and sufficient use of food labels respectively, given that the households are divided into these two segments. This suggests that household food preparers, using the mean as critical index, with less than sufficient (41.58%) and sufficient (58.42%) use of food labels read about 4 and 8 items, respectively, out of the 10 items presented. This reveals a gap of 4 items between both categories, implying that, to attain sufficient use, household food preparers with less than sufficient use will have to read 4 more items. Additionally, using 2/3 of the mean *ufli* as critical index, 0.21 and 0.71 are the mean *ufli* for households having less than sufficient (17.72%) and sufficient (82.28%) use of food labels, if households are divided into these two classes respectively. This outcome is in tandem with Oghojafor *et al*. (2012), who noted that 16.4% and 19%, respectively, of respondents are either unaware or neutral to information provided in the label and do not read food labels. Similarly, to further corroborate this finding, Darkwa (2014) noted that 17.78 % of the respondents did not look at labels. Given this critical index, respondents with less than sufficient and sufficient use of food labels observed 2 and 7 items out of the 10 presented. This implies a gap of 5 items between the two named categories, in favour of those that have sufficient use of food labels.

Drawing from the weighted mean prevalence (Table 4), using 0.7 as critical index, in percentages, households having less than sufficient and sufficient use of food labels in the study area contribute 35% and 65% to the value of the total *ufli*. In actual figures, alternatively, the contribution of households with less than sufficient and sufficient use of food labels is 0.22 and 0.40 respectively. In a similar vein, using the mean *ufli* as critical index, 24% and 76% are contributed by households having less than sufficient and sufficient use of food labels in the study area to the total value of the *ufli*. Furthermore, in actual figures, the mean ufli of 0.62 is split into 0.15 and 0.47 for households having less than sufficient and sufficient use of food labels. Based on 2/3 mean *ufli* (= 0.42) as critical index, in percentages, households with less than sufficient and sufficient use of food labels in the study area contribute 6% and 94% respectively to the value of the total *ufli*. In figures, households having less than sufficient and sufficient use of food labels contribute 0.04 and 0.58 to the value of the mean.

Table 4: Use of Food Labels (Prevalence)

	Prevalence					
	Percentage prevalence		**Disaggregated Mean prevalence**		**Weighted mean prevalence/percentage contribution**	
Critical score	**Less than Sufficient**	**Sufficient**	**Less than Sufficient**	**Sufficient**	**Less than Sufficient**	**Sufficient**
0.70	53.17	46.83	0.41	0.87	0.22(35)	0.40(65)
0.62	41.58	58.42	0.35	0.81	0.15(24)	0.47(76)
0.42	17.72	82.28	0.21	0.71	0.04(6)	0.58(94)

Field Survey, 2018

***less than sufficient (<critical index), sufficient (≥ critical index)**

Margin

The mean margin (Table 5), based on the three critical indices (0.7, 0.62 and 0.42), the figures 0.30, 0.25, 0.18 depict the mean deviation from the critical indices strictly of households having less than sufficient use of food labels in the study area. These values are the minimum value by which an intervention should aim to raise the *ufli* (increase the use of food labels of households), provided that measures are targeted only at households where *ufli* is below the respective indices being considered. Multiplying the values of the mean margin by 10 gives the additional number of items that should be perused such that a respondent now has sufficient use of food labels. For the three indices, in respective order, the number of items viewed on the food labels should be increased by three (3), three (3) and two (2). This measure however assumes that households with *ufli* values above or equal to the respective critical index have zero margin. Also, with respect to the critical indices (0.7, 0.62 and 0.42), the values 0.16, 0.10 and 0.03 are the minimum values by which an intervention/policy set should aim to raise the *ufli* of all households in the study area, regardless of whether the households have less than sufficient or sufficient use of food labels. The number of items by which the viewing of food label items would have to increase, is two (2), one (1) and one (1), respectively, based on the three corresponding critical indices. Danilola *et al*. (2019) indicated high awareness and low use of food labels in 38.2% of their study population. Moreso, Chopera *et al*. (2014) reported findings which imply that 22.8% of respondents did not read food labels.

Mean proportionate margin, given the critical indices (0.7, 0.62 and 0.42), are the values 0.42, 0.41 and 0.46 (where households with *ufli*< 0.7, < 0.62, < 0.42 have zero margin). This measure can be seen as the minimum value (expressed as a proportion of the critical index) by which *ufli* of households have to be raised to increase them to the critical values under consideration. Multiplying these values by the respective critical indices, the precise minimum which an intervention should seek to raise *ufli* (use of food labels) is obtained. This is provided that the interventions are targeted only

at households with less than sufficient use of food labels. Based on the three critical indices (0.7, 0.62 and 0.42), the figures (0.22, 0.17, 0.08 respectively) are the ratio of the minimum value by which *ufli* must be raised (intervention aimed at households with less than sufficient use of food labels) to the maximum value with no target (where intervention is applicable to all households), which would entail increasing the *ufli* of every household enough to ensure they are not below the critical value.

Table 5: Use of Food Labels in the study area (Margin)

Critical Index	Mean Margin		Mean Proportionate Margin	
	Targeted(n)	Untargeted(N)	Targeted(n)	Untargeted(N)
0.70	0.30	0.16	0.42	0.22
0.62	0.25	0.10	0.41	0.17
0.42	0.18	0.03	0.46	0.08

Field Survey, 2018

Intensity

The figures 0.23, 0.22, 0.26 and 0.12, 0.09, 0.05 reveal the intensity (severity) of the deviation of households with less than sufficient use of food labels from the critical indices 0.7, 0.62 and 0.42 (respectively), when the mean margin and mean proportionate margin are obtained based on the number of households which are have less than sufficient use of food labels and all the households respectively. The gap between those that have less than sufficient and sufficient use of food labels is most critical when two-thirds of the mean, 0.42 is taken as critical index; this is suggested by the highest figure (0.26).

Table 6: Use of Food labels in the Study Area: Intensity

Critical Index	Intensity	
	Targeted(n)	Untargeted(N)
0.70	0.23	0.12
0.62	0.22	0.09
0.42	0.26	0.05

Field Survey, 2018

Factors influencing use of food labels

Age, number of years spent acquiring formal education, household income and confidence in safety labels are significant factors explaining the probability of the use of food labels by household food preparers in the study area. Age is significant at 1% and negatively related to the likelihood of use of food labels. This implies that younger household food preparers are more likely to use food labels. The marginal effects reveal that a 1 unit increase in age of household food preparer decreases the probability of the use of food labels by 0.4%. Similar findings are reported in literature (Aygen, 2012; Van der Merwe, *et al*., 2012). Confidence in safety labels is significant at 1% and positively related to the probability of use of food labels in the study area. This implies that a household food preparer that is confident in safety labels is more likely to use food labels than one who is not. Specifically, the marginal effects detail that a household food preparer who is confident in the use of food labels is 11% more likely to use food labels than a counterpart who is not similarly confident. Number of years spent acquiring formal education is significant at 1% and positively related to the probability of the use of food labels. This implies that a more educated household food preparer is more likely to use a food label than one who is less educated. This is intuitive because education is likely to precipitate food safety knowledge which in turn would serve as a precursor for the use of food labels. The marginal effects suggest that a 1 unit increase in the number of years spent acquiring formal education increases the probability of the use of food labels by 2.01%. Danilola *et al*. (2019) found that consumers with secondary education were 0.247 times less likely to read food labels frequently, and those with tertiary education 0.44 times less likely to read food labels frequently, than consumers with postgraduate education. This is, in consonance with the findings of Vemula *et al*. (2013) indicated a positive association between education level and reading various aspects of food labels. Opara and Madukosiri (2016), in tandem, reported that most educated respondents are more likely to read labels compared to uneducated ones. Olatona *et al*. (2019) had concurrent results which reveal that age and household income are significant in explaining the use of food labels. Other empirical studies (Priyadarshini, 2014; Aygen, 2012; ZulAriff and Amizi, 2015; and Manisha, 2010) corroborated the influence of education on the use of food labels. Household income is significant at 5% and has a negative relationship with the probability of the use of food labels. This implies that an increase in the income of a household will reduce the probability of the use of food labels. Simply, households with lower income are more likely to use food labels. This is plausible because there could be a restriction on the food budget as part of the income being low which would in turn pressure the household food preparer to be more intent and precise while making purchases and thus necessitating the use of food labels. The marginal effects show that a 1 unit decrease in household income increases the probability of the household food preparers using food labels in the study area. On the other hand, studies in empirical literature report both positive and zero association between household income and the use of food labels. Some authors

(Monika *et al*., 2013;Yong *et al*., 2015; Alexandra *et al*., 2014; Ketk and Dharni, 2016) reported that household food preparers with higher income are more likely to use food labels, while Manisha (2010) records a no association. Falola (2014) found that age, household income and educational status are significant factors influencing the use of food labels. Ezeh and Ezeh (2014) further buttressed the significance of education and income in explaining the probability of the use of food labels by consumers.

Table 7: Results from Fractional Regression for factors influencing use of food labels

Independent Variables	P > |z| Value	Marginal effect
Age	0.000***	-.0037992
Education	0.000***	.0201729
Household Size	0.397	-.0070359
Household Income	0.002**	$-5.32e^{-0.7}$
Children below 5 years.	0.316	.0108593
Adults above 65 years	0.203	.0213186
Confidence in Safety labels.	0.000***	.1090842(*)

Statistics: prob>chi^2= 0.0000;
number of observations=457;p≤0.01,**p≤0.05;*p≤0.1***

Conclusion

This study shows that more than half of the population use food labels. Household food preparers with less than sufficient and sufficient use of food labels viewed four (4) and eight (8) items, respectively, thus unveiling a gap of four items between both categories. It therefore implies that it would require, using the mean as critical index, four (3) more items to be read to ensure that all household food preparers use food labels, specifically, if programmes are geared towards only those with less than sufficient use. Furthermore deviation from the use of food labels is more critical when two-thirds of the mean *ufli* is adopted as critical score. Clearly, the outcome of this study, provide a more detailed description of use of food labels other than only descriptive analysis been restricted to the usual percentages and the traditional means. The results, further, imply need for policies aimed at creating awareness among household food preparers on the use of food labels with the objective of closing the gap between those with less than sufficient and sufficient use of food labels. Bridging this gap might include: radio, television as well as dailies and social media. The study additionally recommends that the prevalence, margin and intensity be further explored and applied in related studies.

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Appendix 1

S/No.	Food Label Information	YES	NO
1	List of Ingredients		
2	Name of the Food		
3	Manufacture and Expiry date		
4	Brand Name		
5	Country of Origin		
6	Net Content		
7	Nutritional information		
8	Storage condition		
9	Instructions for use		
10	Priced of the Food		