Research article

ANALYSIS OF FOOD LABEL USE IN IBADAN NORTH-EAST LOCAL GOVERNMENT AREA OF OYO STATE, NIGERIA.

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ABSTRACT

This research work broadly examined the analysis of food label use in Ibadan North-East Local Government Area of Oyo State, Nigeria. The study in its specific objectives considered the socio-economic characteristics that influence the home makers in the study area, determine the information consumers pay attention to on food label, determine if consumer pay attributes to food label, effect of food label information of consumers purchase and identify the type of labeled food item purchased by home makers in the study area. The employed the use of structures questionnaire in the collection of data from the 80 home makers in Ibadan North-East Local government Area of Oyo State. The study also employed logit model to test for the formulated hypothesis while descriptive statistics such as frequency count and percentage were used to describe the socio-economic characteristics and other variables of the home makers. The highest age range concentration of the respondents represented about 49.1% of the sampled respondents. Majority (55.0%) are female while only 45% are male. High percentage (70.0%) of the sampled respondents has formal education and majority 63.8% of the respondents are married. The significant variables are found to be: gender ($p<0.05$), age ($p<0.01$), marital status ($p<0.1$) and monthly earlings ($p<0.01$). The study concludes that specific socio-economic factors have significant relationship with the awareness and usage of food label.

Keywords: Food label use, logit, marginal effect, Oyo State, Nigeria.

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INTRODUCTION

Background to the Study

Food is any thing eaten to satisfy appetite to meet physiological needs for growth, to maintain all body process, and to supply energy to maintain body temperature and activity. Because foods differ markedly in the amount of nutrient they contain, they are classified on the basis of their composition and source from which they are derived [4].

Food to the general public is any edible material that is capable of providing dietary nourishment for man, animals or even plant. Important information about food and their nutritional values on labeling, presentation and advertisement, therefore help people to make informed choices of the food they take, such information must be clear accurate and meaningful. Food is also one of the products that is essential to everyone' existence, our social habits or economic circumstance often dictate our style of eating. Whatever the particular situation, it's vitally important that food law should offer a high degree of consumers and public health protection as its goals.

Food is eaten not only to meet basis physiological requirement but also to satisfy aesthetic, physiological need and for health reasons. These later factors often influence food preferences in different regions or in different individuals, irrespective of dietary requirements or the comparative nutritional merits of food [2]. Food safety is an attribute that must be accepted on trust and can be largely considered as credence attributes. Safe food contributes to the health and productivity of a nation and provides an effective platform for development and poverty alleviation. Office of nutritional products, labeling and dietary supplements (ONPLDS) is responsible for developing policy and regulation for dietary supplement, nutritional labeling and food standard infant formula and medical food as well as for scientific evaluation to support such regulation [1].

Labeling relates to any words, particulars, trademarks, brand name, pictorial matter or symbol relating to food stuff and placed on any packaging, document, notice, labeling or collar accompanying or referring to such food stuff [3].

Food labeling over the years has grown in importance in helping the consumer make purchasing decisions. With consumers having more knowledge about the health effects of certain foods, stuffs, there is growing pressure for more detailed food labeling. The study of food allergies has brought into focus a whole new area of knowledge that should be contained within the information provided to the consumer on the food label.

Food safety label encompasses actions aimed at ensuring that all food is safe as possible. Its policies and actions cover the entire food chain from production to consumption. Food label is a scientific discipline describing handling, preparation and storage of food in a way that prevent food borne illness. Food safety is very important aspect of food technology which is the application of physical, chemical and biological sciences to food processing and preservation and to the developing of new and improved products. Food labeling issues are related to the level of trust and confidence consumers have in food industry and in ability of the government regulatory process to protect them. According to [5], food identification has to fulfill three essential requirements.

(1)   Product identification
(2)   Consumer information
(3)   Product manufacturing.

Statement of the Problem

Consumers today expect a great deal of information about the food products they purchase. Providing needed information on make informed choices and can help people to chose amongst types brands and flavor of foods.

According to the U.S Food and Drug Administration FDA more than half of consumers in the United States often read the food label when buying a product for the first time. The consumers are increasing aware of the link between diet and heart disease. In the developed world much is know about the benefits and importance of food label as regards health claims; serving size, calories, fat content, cholesterol content, total carbohydrate, fiber content, vitamins and minerals, sodium and many more while there are debates as regards the genuity of such claim, much is being considered by the regulating agencies, the government health agencies and even the consumers in correcting generating issues for example according to a recent commentary on the journal of the American medical association the front of package labels may so thoroughly mislead the public that another deserves consideration to eliminate all nutrition and health claims from the front of processed food to packages.

Objectives of the Study

The main objective of this study is to analyze the effect of food label use on the purchase pattern of selected food items in the study area.

The specific objectives are to:

- determine the socio-economic characteristics of homemakers in the study area
- determine the information consumers pay attention to on food labels.
- determine if consumers pay attributes to food labels.
- effect of food label information of consumers purchase pattern.
- identify the type of labeled food items purchased by home markers in the study area.

Hypothesis of the study

Ho: There is no significant relationship between the socio-economic characteristics of the respondents and there awareness on the labeling information on the food items purchased.

The Study Area

The study was carried out in Ibadan North-East Local Government Area of Oyo State. The study area has a humid tropical climate with marked wet and dry season. The area falls within the drier pans of South-western Nigerian the rainy season spans about eight months (March-October) and the dry season is form November of February. The rainy season has two peaks in July and August. Temperature is generally mild in the study area throughout the year and varies between 26-30°, mean annual temperature is around 27°C, lowest mean temperature occurs sometimes in August when there is dense cloud lover. Relative humidity ranges between 50% - 80 from April to October.

Ibadan North east local government area was created in 1991 with the administrative headquarters situated at Idi-Ape. It covers a land area of 52.250 square kilometers using a growth rate of 3.2% from 2006 census. As at 2010,

estimated population figure is put at 374,772 the local government has the highest population density of 7,313 persons per square kilometer in Oyo State. It is bounded by Ona-ara, Ibadan south east and Egbeda Local Government Area, the local government is an urban center which from part of Ibadan metropolis. The indigenous habitants are mostly activities. A considerable number of commercial banks are lined up among major street of the local government area. It has the largest spare parts market called Araromi market gate.

A multistage sampling procedure technique was used. The first stage involved the use of stratified sampling techniques, for the selection of 80 respondents from the study area.

The data used for this study was mainly primary data which were obtained through the use of structured questionnaire. A total of 80 respondents were selected in the study area to elicit information from them.

Descriptive statistics such as frequency count and percentages were used to describe data on socio-economic characteristics of the sampled respondents while inferential statistics such as logit regression model was used to test the formulated hypothesis.

RESULTS AND DISCUSSION

Socio-economic Characteristics of the respondent

The following are socio-economic characteristic of home makers interviewed during survey.

Table 1below shows that more female where interviewed with 55.0% to that of male of 45.0%, this is because of the available respondents (Home makers) found in the district of study areas. This implies that females considered food label use than male in the study area. 49.1% of the home markers are 30 years below, 36.5% are between the ages of 31-40 years while 11.5% are found between 41-50 years, 1.3% are found between 51-60 years, while only 2.6% are between 61-70 years. This implies that most of the respondents were in middle aged 10-40, hence they are more likely to consider food label. 33.8% are single, 63.8% are married and only 2.5% are widowed. The implication of this is that mostly, married consider the importance of food label use. 7.5% attended primary school. 22.5% attended secondary school while 70% attended tertiary school showing that interviewed homemakers are all educated which influences their purchase pattern and information sort positively. 30.1% have about 1-3 household size, 53.8% have about 4-6 household size and 16.3% between 7-10 household size. The more the household size the more the household consumption of food label items. 41.6% earn income between ₦5000 – ₦20,000 monthly 16.5% between ₦500,000 – ₦30,000 monthly, while 22.8% between ₦30,500 – ₦50,000 monthly, 10.2% between ₦ 50,500 – ₦80,000, 7.7% earn income between ₦80,500 – ₦150,000 and 1.3% between ₦150,5000 – ₦200,000 and 1.3% earn income between ₦200,500 – ₦300,000.

Table 1: Distribution of respondents by socio-economic characteristics

Sex	Frequency	Percentage
Male	36	45.0
Female	44	55.0
Age		
10 – 30	39	49.1

31 – 40	29	36.5
41 – 50	9	11.5
51 – 60	1	1.3
61 – 70	2	2.6
Marital status		
Single	27	33.8
Married	51	63.8
Widowed	2	2.5
Educational level		
Primary	6	7.5
Secondary	18	22.5
Tertiary	56	70.0
Household size		
1 – 3	24	30.1
4 – 6	43	53.8
7 – 10	13	16.3
Monthly income		
Amount (₦)		
5,000 – 20,000	33	41.6
20,000 – 30,000	13	16.5
30,500 – 50,000	18	22.8
50,000 – 80,000	8	10.2
80,500 – 150,000	6	7.7
15,500 – 200,000	1	1.3
200,500–300,000	1	1.3
Total	**80**	**100**

Source: Field Survey, 2013

Table 2 below shows that 60.0% considered manufacture date, 72.5% considered expiry date, and 60.0% considered brand name while 22.5% for manufactured country, 37.5% considered registration number, 43.8% considered food ingredient and 16.3% use directive. Of all the information that catches the eyes of respondent, manufacture data, expiry date and brand name are normally sort for while use directive, is lease sort for, 62.5% considered manufacture date, 77.5% considered expiry date, band name with 62.5% while 33.8% considered manufactured country, 41.3% considered registration number, 38.8% for food ingredients and 13.8% considered use directive. Of all the information that attract the eyes of respondents, manufactured date, expiry date and brand name is normally sort for. 65.0% considered manufactured date, 78.8% considered expiry date, 67.5% brand name while 40.0% considered manufactured country and 51.3% for

registration number, 48.8% for food ingredients and 38.8% considered use direction. Off all the information manufactured date, expiry date and manufactured country has the highest percentage of attention paid to food label. 75.0% considered manufactured date, 78.8% considered expiry date, 56.3% considered brand name while 35.0% for manufactured country, 41.3% considered registration number and 50.0% for food ingredients and 27.5% use directive of all the information that catches the eye of respondents, expiry date, brand name and manufactured date are normally sort for. 71.3% considered manufactured date 83.8% considered expiry date, 46.3% for brand name while 27.5% considered manufactured country, 42.5% for registration number, and 45.0% considered food ingredients, 18.8% for use directive. Attentions are paid to manufactured date, brand name and expiry date. 71.3% considered manufactured date, 68.8% considered expiry date, 63.8% for brand name while 22.5% considered manufactured country, 57.5% registration number, 21.3% for food ingredients and 15.0% considered use directive.

Table 2: Distribution of respondents on information that attract attention

Baked Food	Frequency	Percentage
Manufacture date	53	66.3
Expiry date	58	72.5
Brand name	48	60.0
Manufactured country	18	22.5
Registration number	30	37.5
Food ingredient	35	43.8
Use directive	13	16.3
Beverage		
Manufacture date	50	62.5
Expiry date	62	77.5
Brand name	50	62.5
Manufactured country	27	33.8
Registration number	33	41.3
Food ingredient	31	38.8
Use directive	11	13.8
Cereals		
Manufactured date	52	65.0
Expiry date	63	78.8
Brand name	54	67.5
Manufactured country	32	40.0
Registration number	41	51.3
Food ingredient	39	48.8
Use directive	31	38.8

Dairy product		
Manufactured date	60	75.0
Expiry date	63	78.8
Brand name	45	56.3
Manufactured country	28	35.0
Registration number	33	41.3
Food ingredient	40	50.0
Use directive	22	27.5
Juice		
Manufactured date	57	71.3
Expiry date	67	83.8
Brand name	37	46.3
Manufactured country	22	27.5
Registration number	34	42.5
Food ingredient	36	46.0
Use directive	15	18.8
Water		
Manufacture date	59	71.3
Expiry date	55	68.8
Brand name	43	53.8
Manufactured country	18	22.5
Registration number	46	57.5
Food ingredient	17	21.3
Use directive	12	15.0

Source: Field Survey, 2013

Table 3 shows that 72.5% had price tag influence, food contact 92.5% and name of brand 78.8% special diet with 83.8% and age specification 68.8% and use directive 82.5%, registration number 75.0%, other information, 41.3%. All information has more than 50% which implies high level of influence on the respondents purchase pattern.

Table 3: distribution of information on label that influence respondents decision to purchase

Information	Frequency	Percentage
Price tag		
Yes	58	72.5
No	22	27.5
Food content		
Yes	74	92.5

No	6	7.5
Name of brand		
Yes	63	78.8
No	17	21.3
Special diet / heath concern		
Yes	67	83.8
No	13	16.3
Age specification		
Yes	55	68.8
No	25	31.3
Use directive		
Yes	66	82.5
No	14	17.5
Reg		
Yes	60	75.0
No	20	25.0
Other information		
Yes	33	41.3
No	47	58.8

Source: Field survey, 2013

Table 4 showed that 68.3% of the respondent purchased baked food daily, 25.0% of the respondent purchased weekly, 8.8% of the respondent purchased monthly and 1.3% of the respondent yearly. Also the table shows 23.8% of the respondent purchased beverages daily 36.3% of the respondent weekly, 41.3%, monthly and 2.5% yearly.

11.3% of the respondent purchased cereal daily, 18.8% of the respondent weekly, 67.5% of the respondent monthly and 2.5% of the respondent purchased cereal yearly respectively 38.8% of the respondent purchased dairy product, 33.8% weekly, 26.3% monthly and 1.3% of the respondent purchased yearly respectively.

17.5% of the respondent purchased juice/wine daily, 36.3% weekly, 36.3% monthly and 10.0% of the respondent yearly respectively.

86.3% of the respondent purchased water daily, 8.8% of the respondent purchased weekly and 5.0% of the respondent monthly.

95% of the respondents agreed to the fact that they usually consider labels on food items before purchase while 1.3% disagreed to this. This table still shows that 65.0% of the respondents agreed that informed choices are made regarding food qualities when considering food labels while 7.5% disagreed. 82.5% of the respondents agreed that there is an increase demand for more healthier safer food item, also 48.8% agreed that information on food label are not always reliable while 18.8% disagreed to the fact that information on food labels are always reliable. Also 55% of the respondents

agreed that information on food labels are complex, not easy to comprehend by most consumers while 27.5% disagreed. This table still shows that 77.5% agreed that food labels is an important element for ensuring consumers right to be properly informed while 6.3% disagreed. Also 50% agree that the more you earn, the more you tend to purchase labeled food item. This table further shows that 56.3% of the respondents agreed to the fact that price on labeled food item determines how much you purchase while 26.3% disagreed to this fact. Also 68.8% agree that labeling is a form of advertisement which influence the amount of food items purchase, 47.5% of the respondents agreed that glossy appearance of the labels and good packaging affects the amount one purchases.

Table 4: Purchasing pattern of respondents on listed food item

Purchase pattern	Daily	Weekly	Monthly	Yearly
Bake food	55(68.3)	20(25.0)	7(8.8)	1(1.3)
Beverages	19(23.8)	29(36.3)	33(41.3)	2(2.5)
Cereal	9(11.3)	15(18.8)	54(67.5)	2(2.5)
Dairy Product	31(38.8)	27(33.8)	21(26.3)	1(1.3)
Juice/wine	14(17.5)	29(36.3)	29(36.3)	8(10.0)
Water	69(86.3)	7(8.8)	4(5.0)	-

Source: Computed from Field survey, 2013

Table 5: Homemakers opinion on food label

	Statement	Agree	Un-decided	Dis-agree
1	Considering labels on food items before purchase is important	76(95.0)	3(3.87)	1(1.3)
2	Informed choices are made regarding food qualities when you consider food labels	52(65.0)	21(26.3)	6(7.5)
3.	There is an increasing demand or more heal their safer food item by consumer	66(82.5)	8(10.0)	6(7.5)
4	Information food labels are net always reliable, you just have to make do with them	39(48.8)	26(32.5)	15(18.8)
5	Information on food labels are complex not easy to complied by most consumer	44(55.0)	14(17.5)	22(27.5)
6	Food label is an important element for ensuring consumers right to be property informed	62(77.5)	12(15.0)	5(6.3)
7	The more you earn, the more you ten to purchase labeled food item	40(56.3)	11(13.8)	29(36.3)

8	Price on labeled food item determine how much you purchase.	45(50.0)	13(16.3)	21(26.3)
9	Labeling is a form of advertisement which influences the amount of food item you purchase	55(68.8)	13(16.3)	12(15.0)
10	Glossy appearance of the labels and good packaging affects the amount you purchase	38(47.5)	20(25.0)	22(27.5)
11	Food content and ingredients contained determined what you buy	58(72.5)	12(15.0)	10(12.5)
12	No of year of acquaintance with a labeled food item influence the brand purchase	49(61.3)	22(27.5)	9(11.3)

Source: Computed from Field survey, 2013

Logit Regression Result

This result of the fitted logit regression estimate as presented in Table 5 revealed a log likelihood of -71.532, prob>chi^2 of 0.0003, LR chi^2 (7) of 24.59 and pseudo R^2 of 0.47 (47%) all significant at $p<0.01$; this suggests that the model has a good fit.

The explanatory variables used in the model are: sex, age, marital status, years of formal education, household size, occupation and monthly earnings. Based on the result, the following variables have a positive and significant relationship with food label awareness and usage: age ($p<0.01$) and monthly earnings ($p<0.01$) while the following variables have a negative and significant relationship with food label awareness and usage: gender ($p<0.05$) and marital status ($p<0.1$); this result suggests that any increase in variables with positive coefficient will increase the likelihood of food label awareness and usage while any increase in variables with negative coefficient will reduce the likelihood of food label awareness and usage. Since, there is significant relationship between selected socio-economic characteristics and food label awareness and usage (a proxy for labeled food purchase pattern based on label information), the null hypothesis is hereby not accepted and the alternative hypothesis accepted.

Table 5: Logit model for food label use

Variable	Coefficient	Standard error	t-ratio
Logit			
Constant	1.139	1.082	1.052
Gender	– 0.726	0.324	–2.240**
Age	0.987	0.219	3.452***
Marital status	– 0.665	0.366	– 1.818*
Years of formal education	0.458	0.354	1.2991
Household size	– 0.180	0.838	– 0.215

Primary occupation	− 0.148	0.164	− 0.903
Amount earned per month	0.311	0.442	2.704***
Marginal Effect			
Constant	0.406	0.382	1.062
Sex	− 0.260	0.115	−2.250**
Age	0.352	0.780	3.451***
Marital status	− 0.237	0.130	−1.817*
Years of formal education	0.163	0.127	1.290
Household size	-0.641	0.299	-0.214
Primary occupation	− 0.11	0.157	-0.706
Amount earn per month	0.528	0.582	2.906***

Log likelihood = -71.532, Prob>chi^2 = 0.0003, LR chi^2 (7) = 24.59, Pseudo R^2 = 0.47

Note: * significant at 10%, ** significant at 5%, *** significant at 1%

Source: Data Analysis, 2013

Recommendations

Based on this finding of the study, the following recommendations are drawn in order to increase the awareness and benefits of food label usage in the developing world and especially Nigeria:

More awareness should be made among female folks and aged people since gender and age are significant factors towards food label awareness and usage. Hence, the need for public awareness (using the media such as radio, television, newspaper, nutrition chats e.t.c) to enlighten the consumers on food label information such as ingredients used, manufactured date, expiry date and registration number, is very essential for healthy living, prolonged life and active participation in their respective areas of livelihood.

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