

## Factors affecting on Consumers Use of food labels in Benghazi/Libya

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### Abstract

### Original Research Article

Food labels found to be very important public health tools that are assist people who are on special diet or with nutrition related health problems and diseases. The current study aims to identify various factors influencing in using of food label. A descriptive cross sectional study was conducted at supermarkets and malls in Benghazi city. Study included four hundred participants, data were collected by questionnaires. Data were analysed by using descriptive statistics. Chi-Square test used to examine the significant differences in the sample. The majority of consumers reported to use of the food label information in making purchasing decisions, the expiration date was the most used food label information, while the fat and calorie/energy were the most used nutrition label components. The present study revealed that price of food products as a most motivating factor to use and read food label. Unfamiliar language and small font sizes of food label were mentioned as difficulties and circumstances encountered in using food label information. Findings from this study will facilitate future public education efforts to promote the use of food labels.

**Keywords:** Use, Benghazi, Consumers, Food, Labels, Socio-demographic.

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## INTRODUCTION

Food product labelling is policy tool for ensuring provision of nutrition and health information to helps the consumers in the better understanding of the nutritional value of food, enables them to compare the nutritional values of similar food products and to make healthy informed food choices (Vijayeta, P., 2014). In addition, Food labels found to be very important public health tools that are assist people who are on special diet or with nutrition related health problems and diseases such as obesity, diabetics, cardiovascular diseases and various types of cancers, as it helps them to make informed choices of food (Washi, S., 2012). Rate of packaged ready-to-eat food consumption is increasing because of various reasons, including improvement in the economy, social and cultural changes, being easy for transportation and buying, colored package and good taste. Given the alarming problem regarding the ready-to-eat food, there is an urgent need to raise awareness in the public worldwide. Transforming healthy nutrition to life style to reach expected quality of life during globalization process is significant (Küçük, S *et al.*, 2019). In Sri Lanka, a cross sectional study conducted to assess the use of food labels in making choices on packaged snack and its associated factors among 542 adolescents from grade 12 students by means of questionnaires. Of those students, (74.6%) were

„frequent label readers. Compared to males (70%), a significantly higher proportion of females (79.2%) were „frequent“ label readers. Over (74%) paid attention frequently to the brand name, price (85%) and nutrition panel (81%). Over (64 %) were able to select the better food label when given a choice between two snacks, although some did it for reasons such as attractive label (63%), the majority (84%) had good knowledge on interpreting labels (Talagala, I., & Arambepola, C., 2016). In Turkey, the study carried out to understanding the buying behaviour of young consumers regarding packaging attributes and labels, Data were collected from 324 participants (59% female and 41% male) through self-administered questionnaire, indicated that consumers chose the glass as a packaging material due to its healthy nature (69.75%). In addition, respondents who preferred plastic packaging materials assumed that plastics were user friendly (51.23%) and had high resistance to physical impacts (38.89%). Furthermore, the majority of consumers checked the labels to get information. On the hand, consumers indicated that label content was hard to understand. Although, investigation of other information of labelling were also included such as, production, best before dates (78%) and ingredients (15%) and considered important information by consumers. Fat content was chosen as the most important part of labels by female consumers, whereas male

consumers were more concerned about the protein content. Participants indicated that low price and special offered products were setting the basis for their unplanned shopping. The previous results confirmed that packaging attributes and labels were the most important factors that might affect consumers' purchasing behaviours (Aday, M., and Yener, U., 2014). Benghazi is the second largest city in Libya and estimated to have a total population of 500,000 according to the national census in 2012 (National Population Survey, 2012). (17) In Libya especially in Benghazi city, the information available in regard to consumer perception on food label was very meagre. The aim of this paper to identify various factors influencing in using of food label. Findings from this study will facilitate future public education efforts to promote the use of food labels.

## METHODOLOGY

400 randomly selected Libyan adults aged 18 years and above were enrolled in the study. The subjects were purchasing pre-packaged foods from 21 supermarkets and malls in Benghazi city between March and September 2019. The study sample represents 63% of the total population in Benghazi city according to the national census in 2012. Five regions were excluded from the study because they were going through hard post-war times during the study period. The non-Libyan-citizens were excluded, since they may have different culture and attitude towards food labelling. Data were collected by using close ended questions questionnaire. The questionnaires were filled by one of the researchers. The questionnaire was based on the questions of previous studies with some modifications (Samson, G., 2012, Aryee, P., and others 2019, Dudhate, A. U 2011, and Kasapila, W., & Shawa, P 2011). Data entry and analysis were performed using the Statistical Package for Social Sciences (SPSS) version 20. Chi-square test was performed to assess statistical significance between the socio-demographic characteristics of respondents and awareness of food labelling information. If ( $P < 0.05$ ) was considered statistically significant. Ethical approval for conducting this study was obtained from the Directorate of Graduate Studies and Training of University of Benghazi. Permission to conduct the study in supermarkets and malls was obtained from the managers of each supermarket and mall. Informed consent was obtained from the participants.

## RESULT

Table (1) shows the participants characteristics. The largest proportion of participants (45.8 %) was in the age group 29 to 39 years. (74.3%) of participants were

males; 25.8 were females. In addition, (54.5%) of participants were married. (43%) of participants had college/university education, followed by (40.8%) had secondary education. Furthermore, (38.8%) of participants earned a monthly income 550 to 749 Libyan Dinar (LYD). Moreover, employed, freelancers were account (69.5%), (20.5%) respectively. Table (2) shows how does food labels help in selecting the food items; the result shows that more than half of participants read food labels to distinguish between different products, followed by nineteen point three percent to help in compare the nutrient content of different products, while fifteen point three percent to help avoid some nutrients, and only twelve point three percent of participants use food labels to select foods which contain nutrients they need.

Table (3) shows the motivations to use food label information, the results shows that forty two point five percent of participants were motivated by price of the pre-packaged food, thirty six point eight percent of participants were motivated by like to know characteristics of the food, while appearance of package design and advertisements/food promotion were motivated by twenty eight point eight percent and twenty six point eight percent of participants, respectively. Instructions for use was one point five percent, and only fifteen point three percent of participants were motivated by health consciousness. As shown in table (4): fifty two point five percent of participants reported to purchase pre-packaged food without reading labelling information because the language was unfamiliar to them, forty two point five percent that the foods were routine/familiar to them, thirty percent of participants were in a hurry/time constraints, and thirteen point five percent of participants buy brand pre-packaged food without using food label, while twelve percent of participants because the foods were sold at low price, and only six percent of participants reported to purchase pre-packaged foods without using labels because they were trust the seller. As shown in table (5): four major difficulties towards using food labelling information were reported by participants. Small fonts and language were mentioned by nearly equal proportions of participants, fifty nine point five percent and fifty nine percent, respectively, followed by the incomplete labelling which was mentioned by twenty seven point eight percent, and use of technical/scientific terms was mentioned by six percent of participants as the major barrier in reading food labels. Table (6) shows association between socio-demographic characteristics and use of food labelling, association between socio-demographic characteristics and confidence in food label components.

**Table 1: Scio-Demographic Characteristics**

Variables	Number	Percentage
<b>Age (Years)</b>		
18-28	56	14
29-39	183	45.8
40-50	119	29.8
51-60	37	9.3
> 60	5	1.3
<b>Gender</b>		
Male	297	74.3
Female	103	25.8
<b>Marital status</b>		
Single	180	45
Married	218	54.5
Widowed	0	0
Divorced	0	0.5
<b>Education</b>		
Primary	64	16
Secondary	163	40.8
University Level	172	43
No formal education	1	0.3
<b>Income (Libyan dinars)</b>		
350-549	48	12
550-749	155	38.8
750-949	141	35.3
>950	56	14
<b>Occupation</b>		
Student	35	8.8
Employee	278	69.5
Retired	4	1
Unemployed	1	0.3
Freelancers	82	20.5

**Table 2: Distribution of the participants according to use of food label in food items selecting**

Importance of food labels	No.	%
To distinguish between different products	243	58.5
To help avoid some nutrients	61	15.3
To select foods which contain nutrient they need	49	12.3
To compare the nutrient content of different products	77	19.3

**Table 3: Distribution of participants according to motivations to use food labelling**

Motivations	No.	%
Price of the food	170	42.5
Appearance /package design	115	28.8
Advertisements/food promotion	107	26.8
Health consciousness	61	15.3
Characteristics of the food	147	36.8

**Table 4: Distribution of participants according to circumstances prevent using food labels**

Circumstances of not reading labels	No.	%
No time	120	30
Low price	48	12
Unfamiliar languages	210	52.5
Trusted seller	24	6
Routine/familiar foods	170	42.5
Brand of the product	54	13.5

**Table 5: Distribution of participants according to difficulties encountered food label use**

Difficulties	No.	%
Small fonts	238	59.5
Language	236	59
Use technical/scientific terms	24	6
Incomplete labelling	111	27.8

**Table 6: Association between socio-demographic characteristics use of food labelling**

Socio-demographic variables	$\chi^2$	P
<b>Use of food labelling</b>		
Age	4.659	0.324
Gender	3016	0.082
Marital status	1.279	0.528
Education	17.421	c
Income	6.618	0.085
occupation	6.548	0.162
<b>Awareness level of food labelling according to use of food label</b>		
Age	20.168	0.000
Gender	15.183	0.000
Marital status	28.572	0.000
Education	110.294	0.000
Income	54.652	0.000
occupation	36.875	0.000
Motivation to read food label	Income Level	
Price of food product	9.007	0.029

## DISCUSSION

As indicated in (Table 1), most of participants were aged from twenty nine years old to fifty years old with (75.6%) of the total participants. The majority of participants were male with (74.3%). The majority of the study participants were middle-income earners. Accordingly, individuals who purchase pre-packaged food products in Benghazi city were male, young or middle ages and most of them were married. More than half of respondents (58.5%) were use food labels to distinguish between different pre-packaged food products, followed by (19.3%) of respondents were using to compare nutrient content on pre-packaged food labels before purchase of such foods, while (15.3%) of respondents to avoid some nutrients, and only (12.3%) of respondents were checking for select foods which contain nutrients they need (Table 2). These findings clearly established that food label has become an important source of product information for the majority of consumers while making purchase decisions. This high percentage of those who checking the food label may be related to the high education level of participants, where the results have shown highly statistically significant relationships between level of education with use of pre-packaged food labels ( $P=0.000$ ) ( $\chi^2=17.421$ ) as indicated in (Table 6). This implies that the use of pre-packaged food labels increase as level of education increases. However, the result of study done at Lucknow city of Uttar Pradesh, India, which covered 100 participants were agreed with the present study, had showed that most of participants (82%) in the sample use

food labels, while (18%) rarely go through labels while purchasing pre-packaged food products (Singh, A., & Srivastava, N., 2015). Similar results were found in UAE; which revealed that (89.5%) of participants were use food label, while only (10.5%) of them had never use the food labels in their purchasing decision (Washi, S., 2012). Another cross-sectional study was done at chain stores in Tehran, Iran, which included 2123 shoppers, aimed to assess the consumer's behaviors about the important information on the labels and their reasons for use or non-use. This study was agreed with the present study and revealed that, the vast majority of participants (82.8%) reported that look at food label information when purchasing food products (Bazhan, M *et al.*, 2015). According to Aryee, P., and others (2019) achieved study aimed to assessing consumer knowledge and understanding and its influence on food label usage in the Tamale Metropolis of Ghana, where a total of 384 consumers aged between 15 to 60 years were interviewed. They concluded that a large majority of consumers (95.8%) claim they check or use food labels during purchasing pre-packaged food products. In addition to, a survey among the consumers of north-western region of Russia was carried out to determine awareness and understanding of food labelling as well as usefulness of various elements of food labelling. A survey involved 738 consumers, aged 16 years and older. They found that more than a half of consumers said that they always (33%) or usually (24%) consult food labels when shopping for food (Shamtsyan, M *et al.*, 2020). This was in the line with research findings that



consumers across the globe attached importance to use of food labels. Increasing concerns of consumers with food labelling because of food crises, the appearance of diseases due to unregulated diet, and poor quality of food, etc., have been cited as the factors for the importance use of labels at the global level. This study revealed a number of factors that inter-relate to using pre-packaged food label information. These included motivations to read food labels, circumstances in which pre-packaged foods were purchased without consult labelling information as well as difficulties that respondents encountered in the course of reading pre-packaged food labels. With regard to motivations to use food labelling information, the results showed that (42.5%) of participants were motivated by price of the pre-packaged food, (36.8%) of participants were motivated by like to know characteristics of the food, while (28.8%) and (26.8%) of participants were motivated by appearance/package design and advertisements/food promotion, respectively, and (15.3%) of participants were motivated by health consciousness (Table 3). It was clear that the price of the product regarded as being more important than the nutritional content, which indicated a lack of interest in the nutritional content of the purchased food. A similar study done at Cape Coast university in Ghana had agreed with present study result, shown that a more than quarter (30%) of participants motivated to read pre-packaged food labels by price, while (21%) expiry dates, and (12%) brand name (Darkwa, S., 2014). However, the great interest in price could provide support for the findings that consumers had an inadequate understanding of the food labels, or that they do not know what information to evaluate on the label when making food choices, also most of participants (74.1%) had middle-income from 550 to 950 LYD. As shown in (table 6); the statistical analysis shown that there is statistically significant relationship between the price of pre-packaged foods with income of the respondents ( $P=0.029$ ) ( $\chi^2=9.007$ ). On the another hand, the results of present study were in contrast with the findings of a similar study done in Digos City, Philippines, involved 115 participants interviewed while shopping at various shopping stores. This study showed that majority of the participants (42.6%) were motivated to read the labeled food products because being a health conscious, while (26.95%) like to know characteristics of the food, (15.65%) preference of some ingredients, (11.3%) advertisements/food promotion and only (7.82%) of participants were motivated by appearance/package design (Tumulak, J *et al.*, 2015). The disagreement between these studies and the findings of the present study could be due to the differences in the income of subjects of each studies. Present study indicated that, around more than half (52.5%) of participants reported to purchase pre-packaged food without reading labelling information because of unfamiliar languages, while (42.5%) of participants not use food labels when

purchase routine or familiar food products, the other important reasons for not reading food label identified in this study that when consumers had no time (30%), or the food products were brand name (13.5%), also low price contribute (12%), and only (6%) trust seller (Table 4). These results suggested that consumers may did not use food label, or fully understand the content of food label, because of individual characteristics, behaviors, understanding and the attitude towards food label. Comparable study were done among 208 consumers who purchasing pre-packaged foods in selected supermarkets in Tanzania. The results revealed that one third (33.2%) of participants reported to purchase pre-packaged food without reading labelling information, because the food was routine/familiar to them, (22.6%) were in a hurry/time constraints. and few participants (4.8%) reported to purchase pre-packaged foods without reading labels because the foods were sold at low price (Samson, G., 2012). Another study included 303 individuals was conducted in New Delhi, India, to investigate the factors influence on consumer usage, understanding of food labels while purchasing pre-packaged food products. The study revealed that the most common reason for not using food labels was lack of knowledge/difficult terms (35%), lack of time (28.3%), followed by lack of interest (19.2%), small font size (13.3%) and lack of trust/other reasons (4.2%) (Shamim, K *et al.*, 2020). In another study conducted in India, indicated that circumstances in which consumers purchase pre-packaged food without consulting the respective labels including; (28%) of the people do not read food labelling every time because its time consuming, (17%) for they do not understand that, (12%) cannot find where the label is, (17%) feels labels were too small, (17%) do not have this habit, (7%) feel there is no need to do so, and (2%) people have other opinion (Jadapalli, M., & Somavarapu, S 2018). Table (5) showed that, four major difficulties towards using food label information were reported by participants. Small fonts and language were mentioned by nearly equal proportions of participants (59.5%) and (59%), respectively, incomplete labelling (27.8%), and technical/scientific terms was mentioned by (6%) of participants as the major barrier in reading food labels. These results suggested that although the Participants with high level of education, but may face some difficulties in understanding the food label or its various technical components, so that the information on food labels should be presented in such a way as to assist consumers with limited reading abilities. This result was close to the result of a study done in Anand city of Gujarat in India, conducted amongst 150 individuals, aimed to determine level of awareness on pre-packaged food labelling information, their perception on the importance of such information and various factors influencing in reading and using food labels. The study found that major difficulties/barriers towards reading food labelling information were reported by (56%) of participants was small fonts, the use of

technical/scientific language (46.7%) of participants, and only (25.3%) incomplete labelling (Dutta, S., & Patel, D., 2017). In a cross-sectional study conducted to investigate South Africans adult consumer's understanding regarding the information on the food labels and to determine whether they use the information on the food labels in making choices. The study was revealed that difficulties associated with food label use were mainly indicated as the font size of the print (Jacob, S *et al.*, 2009). According to study conducted in India, to investigated that consumer knowledge of nutrition food label information, their perception on the importance of such information and difficulties encountered in reading and using pre-packaged food labels. The findings showed that difficulties encountered in reading food labels included a small font size was cited by (17%) of consumers (Jadapalli, M., & Somavarapu, S., 2018). Another study in India, conducted by Shamim, K., and others in (2020), the study revealed that (13.3%) of a total respondents selected small font size. The similarity between these studies and the findings of the present study could be as a result of several possible reasons, including lack of awareness, behaviors, habit and culture. In general, as mentioned above, (42.5%) of respondents mentioned price of food as the factor for motivating them to use food label before purchase of the food item. In addition to, health consciousness was rated as the least motivation factor as only (15.3%) of respondents indicated. These results suggested that large number (86.1%) of respondents earned monthly incomes less than a 950 LYD, so that low income groups paid more attention to price of the product. Significant relationship between income of the respondents and the attention they pay to the price of the food product indicated that as the income levels rise people start paying less attention to the price of the food product. Moreover, our results revealed that only a quarter of respondents paid attention to health consciousness that could be lead to low awareness level of food label information as shown in the results section. The study revealed several difficulties that respondents encounter in using food label information including small font sizes and language. In addition, the study revealed that there were circumstances in which consumers did not use food labels such as when they were unfamiliar with language. These results suggested that although education level of consumers was high, they do not have enough knowledge level to interpret the food label or perhaps the way information is packaged that makes it difficult to comprehend. In addition to, the consumers or people with lower levels of income were likely to have the most difficulty understanding the terms used on food labels.

## CONCLUSION

The majority of consumers reported to use of the food label information in making purchasing decisions, the expiration date was the most used food

label information, while the fat and calorie/energy were the most used nutrition label components. The present study revealed that price of food products as a most motivating factor to use and read food label. Unfamiliar language and small font sizes of food label were mentioned as difficulties and circumstances encountered in using food label information.

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