

Study of Consumer Awareness on Food Labelling and Use of Pack Information for Purchase of Pre-Packaged Food Products

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ABSTRACT

Purpose - Liberalization of trade, globalization and development in food science and technology has resulted in an increase in trade and consumption of pre-packaged foods. Reading food labelling information is important to assist in making informed choices of food. This study determined level of awareness on pre-packaged food labelling information among consumers in Anand city of Gujarat, India, their perception on the importance of such information and various factors influencing in reading and using food labels. **Design/methodology/approach** - A semi structured questionnaire was used to collect information from consumers who were found purchasing prepackaged foods in selected modern format retail stores. The obtained data were computed to determine relationships and associations between various factors and the use of food labelling information among consumers in the area of study. **Findings** - Study revealed that 86.7 per cent of the study participants reported to read labeling information prior purchase of pre-packaged foods. However, only a third of respondents were very much informed about food labelling and computed awareness scores. It was observed that level of education and gender difference had statistically significant association with awareness scores and perception of importance of food labelling. 83.3 per cent of respondents mentioned price of food as the factor for motivating them to read food label before purchase of the food item. **Practical implications** - Deliberate efforts may be needed to improve food labelling, provide education to consumers to raise their awareness on importance of reading and use of food labelling information to make an informed choice of the food. **Originality/value** - Determines level of awareness about labelling information among consumers of pre-packaged food products.

Keywords: Food labels, Pack information, Pre-packaged foods, Awareness, Perception

The liberalization of food trade, growing consumer demand for branded, safe, healthy, nutritious and convenience food, developments in food science and technology, improvement

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in food supply chain and easy communication has resulted in an increase of national and international trade of processed pre-packaged food products. Today, consumers, in one hand, have more access to new food products and more information about food; in the other hand there are increasing concerns about the potential for consumers to be misled by foods labels. This necessitates consumers to be enlightened with the knowledge and ability to read, understand and interpret food labelling and use such information in decision making during purchase of pre packaged foods.

According to FSSAI, “Pre-packaged” or “Pre-packed food”, means food, which is placed in a package of any nature, in such a manner that the contents cannot be changed without tampering it and which is ready for sale to the consumer (FSSAI, 2011). Food label is any tag, brand, mark, pictorial or any descriptive matter written, printed, stencilled, marked, embossed or impressed on, or attached to a container of food. Food labelling includes any written, printed, or graphic matter that is presented on the label accompanying the food, or is displayed near food for the purpose of promoting its sale (Codex Stan 1 -1985).

Food labels are found to be very important public health tools that are used to promote a balanced diet; and hence enhance public health and wellbeing. Food label information assists consumers to better understand the nutritional value of food and enables them to compare the nutritional values of similar food products and to make healthy informed food choices based on the relevant nutrition information. According to Food Safety and Standards Packaging and Labelling Regulations, 2011 (FSSAI, 2011) and the Codex General Standard for the Labelling of Pre Packaged Foods (Codex Stan 1 -1985), the pre-packaged food labelling should include name of the food, list of ingredients, net content, name and address of the manufacturer and country of origin. Other information includes the batch /lot identification, date markings (manufacture and expiry dates), storage conditions, nutrition information (composition) and instructions for use. All these information are essential to help consumers in making choices of food depending on preference, dietary recommendations/restrictions and other reasons. The information also allows consumers to compare food products for value for money.

In Australia and New Zealand, research shows that most consumers regularly read food labels for a number of reasons including allergy or intolerance to a food or food additive, a need to reduce fat intake or to avoid certain types of foods such as genetically modified foods (Donna *et al.*, 2001). Low awareness of food labelling, low level of education, low health consciousness, products attributes, food labelling format, influence of media, perceived role of regulatory authorities and non availability of consumer guidelines on the use of food labelling have been reported by studies from various countries as factors related to consumers not reading and using food labelling information in purchasing food (Coveney, 2007, Sunelle *et al.*, 2010, Philip *et al.*, 2010, Vemula *et al.*, 2014).

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Considering the above facts, a study has been undertaken to evaluate consumer awareness on food labelling and use of pack information for purchase of pre-packaged food products by consumers in the city of Anand in Gujarat state of India with the following objectives:

1. To determine level of awareness on the basic pre-packaged food labelling information among consumers
2. To determine perceptions on the importance of pre-packaged food labelling information among consumers
3. To determine factors associated with reading pre packaged food labels among consumers

METHODOLOGY

Sampling Method: Five major modern format retail stores of Anand, namely, Big Bazaar, DB's, D'mart, Amul Green and Reliance Fresh, were selected for inclusion in the study. In each of the selected supermarkets 30 respondents were interviewed in order to attain the estimated sample size of 150. Respondents were selected using convenience sampling method because of unavailability of sampling frame due to the nature of the study population and site. Any person of over 18 years of age who was found purchasing pre-packaged food items and accepted to participate in the study was included.

A semi structured questionnaire, finalized after pilot survey, was used to collect information on the study variables including social demographic characteristics of respondents, awareness of food labelling information, format and language of food labelling information and product attributes such as price, appearance and packaging design. Respondents were asked on how informed they are on food labelling. Level of awareness on food labelling was also obtained by asking respondents to express their familiarity with the eleven standard information which are supposed to be found on pre-packaged food labels as were read by interviewers from the questionnaire. Respondents were also asked about their perception on the importance of food labelling information and whether they read food labels or not. Those who read food labels were further enquired for their motivation for reading food label, circumstances under which they skip reading label and difficulties they encounter in reading and understanding food labels.

Treatment: Data were entered into a computer database using MS Excel computer software. Responses were coded before entry into the computer. MS Excel computer software was used for data analysis. Respondents' level of awareness on food labelling information was determined by the awareness score that was computed using respondents' response on their familiarity with the 11 standard information found on pre-packaged food labels. The level of awareness was classified into 3 categories: high level of awareness if one responded to 8-11 items, middle level of awareness if the responses were on 4-7 items and low level of awareness if responses were on 3 items and less.

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Chi-square test was performed to assess statistical significance between the demographic characteristics of respondents and awareness and use of food labelling information in decision making during purchase of pre-packaged foods. Frequencies for information mostly sought by respondents when reading food labels, motivations to read food labelling information, perceived importance of food labelling information, circumstances in which respondents purchase pre-packaged foods without reading labelling information and difficulties encountered in reading food labelling information were determined.

RESULTS AND DISCUSSION

1. Demographic characteristics of respondents (pre-packaged food consumers)

A total of 150 respondents participated in this study. As shown in Table 1, males constituted 80 (53.3 %) of all respondents. Large proportion of respondents 68 (45.3 %) were in the age group of 18 to 29 years while the smallest proportion (11.3 %) was in the age group 50 years and above. Most of the respondents 114 (76.0 %) had college/university education and 36 (24.0 %) had school level education. Most of the respondents, 60 in numbers (40.0 %), were employed in service, followed by 36 (24.0 %) housewives.

Table 1: Social demographic characteristics of respondents

Characteristic (N =150)	Frequency	Percentage
Gender		
Male	80	53.3
Female	70	46.7
Age (Years)		
18 – 29	68	45.3
30-39	47	31.3
40-49	18	12.0
>50	17	11.3
Level of education		
Upto School level	36	24.0
College / University level	114	76.0
Occupation		
Employed or Pensioner	60	40.0
Business	25	16.7
Housewife	36	24.0
Student	29	19.3

2. Awareness on the basic pre-packaged food labelling information

Extent of information on food labelling

As shown in Table 2, out of all study respondents, 49 respondents (32.7 %) claimed to be very much informed about food labelling information, while 56 respondents (37.3 %) claimed to be moderately informed and 45 respondents (30.0 %) claimed to be minimally informed. Large proportion of respondents upto school level education, 24 (66.7 %), were minimally informed about food labelling. Among respondents with college / university level education, 43 (37.7 %) and 50 (43.9 %) respondents were very much and moderately informed about

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food labelling. Among the male respondents, 62.5 percent claimed to be either very much or moderately informed about food labelling information, while among female respondents, the percentage was found to be higher as 78.6 percent claimed to be either very much or moderately informed about food labelling information.

Among the social demographic characteristics of respondents, results have shown statistically significant relationships between level of education ($p=0.000$) with the extent of being informed about food labelling. This implies that the extent of having information about food labeling increase as level of education increases. On the other hand, results did not reflected statistically significant difference in the extent of being informed about food labelling among various age groups ($p=0.861$), occupations ($p=0.766$) and between male and female respondents ($p=0.088$).

Table 2: Association between social-demographic characteristics of respondents and the extent of being informed about food labeling

Social-demographic variables	Extent of information on food labelling, N=150			χ^2	P value
	Very much informed	Moderately informed	Minimally informed		
	Frequency (%)	Frequency (%)	Frequency (%)		
Education level				30.359	0.000
Upto School level, n=36	6	6	24		
	16.7	16.7	66.7		
College / University level, n=114	43	50	21		
	37.7	43.9	18.4		
Age groups				2.565	0.861
18 – 29, n=68	22	28	18		
	32.4	41.2	26.5		
30-39, n = 47	17	17	13		
	36.2	36.2	27.7		
40-49, n = 18	5	6	7		
	27.8	33.3	38.9		
>50, n = 17	5	5	7		
	29.4	29.4	41.2		
Gender				4.865	0.088
Male, n = 80	22	28	30		
	27.5	35.0	37.5		
Female, n = 70	27	28	15		
	38.6	40.0	21.4		
Occupation				3.334	0.766
Employed/Pensioner, n = 60	20	23	17		
	33.3	38.3	28.3		
Business, n = 25	7	7	11		

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Social-demographic variables	Extent of information on food labelling, N=150			c ²	P value
	Very much informed	Moderately informed	Minimally informed		
	Frequency (%)	Frequency (%)	Frequency (%)		
	28.0	28.0	44.0		
Housewife, n = 36	11	15	10		
	30.6	41.7	27.8		
Student, n = 29	11	11	7		
	37.9	37.9	24.1		

3. Respondents level of awareness on food labelling information according to awareness scores

As indicated in Table 3, the awareness scores computed showed that out of all study respondents, 38 respondents (25.3 %) had high level of awareness about food labelling information, while 71 respondents (47.3 %) had medium and 41 respondents (27.4 %) had low level of awareness. Awareness scores computed also showed that among the respondents upto school level education, only 7 (19.4 %) had high level of awareness, while 10 (27.8 %) had medium and 19 (52.8 %) had low level of awareness. However, among the respondents having college and university level education, 31 (27.2 %) had high and 61 (53.5 %) had medium level of awareness, while only 22 (19.3 %) had low level of awareness. Awareness scores computed also showed that among the male respondents, only 15 (18.8 %) had high level of awareness, while 29 (36.3 %) had low level of awareness. However, among the female respondents, 23 (32.9 %) had high level of awareness, while only 12 (17.1 %) had low level of awareness.

Statistically significant difference in levels of awareness on food labelling according to level of education (p=0.000) and gender difference (p=0.017) was observed. On the other hand, there was no difference in levels of awareness on food labelling among different age groups of respondents (p=0.963) and type of occupation (p=0.412).

Table 3: Association between social-demographic characteristics and awareness scores

Social-demographic variables	Awareness scores, N=150			c ²	P value
	High	Medium	Low		
	Frequency (%)	Frequency (%)	Frequency (%)		
Education level				15.695	0.000
Upto School level, n=36	7	10	19		
	19.4	27.8	52.8		
College / University level, n=114	31	61	22		
	27.2	53.5	19.3		
Age groups				1.439	0.963
18 – 29, n=68	17	34	17		
	25.0	50.0	25.0		

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Social-demographic variables	Awareness scores, N=150			c ²	P value
	High	Medium	Low		
	Frequency (%)	Frequency (%)	Frequency (%)		
30-39, n = 47	11	23	13		
	23.4	48.9	27.7		
40-49, n = 18	5	8	5		
	27.8	44.4	27.8		
>50, n = 17	5	6	6		
	29.4	35.3	35.3		
Gender				8.116	0.017
Male, n = 80	15	36	29		
	18.8	45.0	36.3		
Female, n = 70	23	35	12		
	32.9	50.0	17.1		
Occupation				6.105	0.412
Employed/Pensioner, n = 60	13	28	19		
	21.7	46.7	31.7		
Business, n = 25	6	10	9		
	24.0	40.0	36.0		
Housewife, n = 36	8	21	7		
	22.2	58.3	19.4		
Student, n = 29	11	12	6		
	37.9	41.4	20.7		

4. Consumers perception on the importance of food labeling information

Results showed that, 69 respondents (46.0 %) perceived food labelling as very important information, while 44 (29.3 %) and 37 (24.7%) respondents perceived it as somewhat and minimally important, respectively. As shown in Table 4, more than half of the respondents who had college/university level education, i.e., 60 (52.6 %), perceived food labelling information as very important. Among the female respondents, 58.6 per cent perceived food labelling information as very much important, while among male respondents, only 35.0 per cent perceived it as very much important.

Statistically significant difference in perceiving food labelling as important information was reflected by the chi-square test among respondents with different levels of education (p=0.010) and with different in gender (p=0.011). However, as reflected by the chi-square test, difference in perceiving food labelling as important information among respondents with different age groups (p=0.547) and different occupation (p=0.501) were not statistically significant. This implies that perception of food labelling information as important increase as level of education increased while female respondents perceived the food labelling information as more important than their counterparts.

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Table 4: Association between social-demographic characteristics and perception on the importance of food labelling information

Social-demographic variables	Perceived importance of food labelling information, N=150			c ²	P value
	Very much important	Somewhat important	Minimally important		
	Frequency (%)	Frequency (%)	Frequency (%)		
Education level				9.167	0.010
Upto School level, n=36	9	13	14		
	25.0	36.1	38.9		
College / University level, n=114	60	31	23		
	52.6	27.2	20.2		
Age groups				4.978	0.547
18 – 29, n=68	33	19	16		
	48.5	27.9	23.5		
30-39, n = 47	24	15	8		
	51.1	31.9	17.0		
40-49, n = 18	6	5	7		
	33.3	27.8	38.9		
>50, n = 17	6	5	6		
	35.3	29.4	35.3		
Gender				8.965	0.011
Male, n = 80	28	30	22		
	35.0	37.5	27.5		
Female, n = 70	41	14	15		
	58.6	20.0	21.4		
Occupation				5.340	0.501
Employed/Pensioner, n = 60	30	13	17		
	50.0	21.7	28.3		
Business, n = 25	8	11	6		
	32.0	44.0	24.0		
Housewife, n = 36	18	10	8		
	50.0	27.8	22.2		
Student, n = 29	13	10	6		
	44.8	34.5	20.7		

Factors associated with reading food labels

As shown in Table 5, majority of respondents 130 (86.7 %) reported to read prepackaged food labelling information prior purchase/consumption of such foods for one or the other reasons.

Table 5: Frequency of reading food labels

Do you read food labelling information before purchase of prepackaged foods? (N=150)	Frequency	%
Yes	130	86.7
No	20	13.3

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Motivations to read food labelling information

The research revealed that respondents had different motivations to read information that is contained in food labels. As indicated in Table 6, a maximum of 125 (83.3 %) respondents mentioned price of food as the factor for motivating them to read food label before purchase of the food item. Convenience of environment was rated as the least important motivation factor as only 26 respondents (17.3 %) indicated.

Table 6: Factors motivated consumers to read food label

Motivation factor	Frequency	%
Price of the food	125	83.3
Appearance /package design	59	39.3
Like to know characteristics of the food	54	36.0
Preference of some ingredients	35	23.3
Religious belief	28	18.7
Health consciousness	59	39.3
Convenience of environment	26	17.3
Storage condition	47	31.3
Advertisements/food promotion	40	26.7

Circumstances in which consumers purchase pre-packaged foods without reading labelling information

As shown in Table 7, more than half of the respondents, i.e. 86 (57.3 %), reported to purchase pre-packaged food without reading labelling information because the food was routine/familiar to them. 69 respondents (46.0 %) purchased pre-packaged foods without reading labelling information because they were in a hurry/time constraints. Only 30 respondents (20.0 %) reported to purchase pre-packaged foods without reading labels because the foods were sold at low price.

Table 7: Circumstances in which respondents purchase pre-packaged foods without reading labels

Circumstance in which respondents purchase pre-packaged foods without reading labels	Frequency	%
When the food is sold at low price	30	20.0
When in a hurry/time constraints	69	46.0
Purchase of routine/familiar foods	86	57.3
On streets or journey	39	26.0
When the language on the label is unfamiliar	36	24.0
When I trust the seller	43	28.7

Difficulties encountered by consumers when reading/using food labeling information

As shown in Table 8, major difficulties/barriers towards reading food labeling information were reported by respondents. Small fonts was mentioned by 84 respondents (56.0 %) as the major barrier in reading food labels followed by the use of technical/scientific language

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which was mentioned by 70 respondents (46.7 %). Incomplete labeling was mentioned by only 38 respondents (25.3 %).

Table 8: Difficulties encountered by respondents when reading/using food labels

Difficulty	Frequency	%
Unfamiliar language	59	39.3
Small fonts	84	56.0
Use of technical/scientific language	70	46.7
Incomplete labelling	38	25.3
Hidden information	44	29.3

CONCLUSIONS

The respondent profiling of the survey on the basis of age, gender, educational qualification and occupation suggested that the selected study population and the convenient selection of respondents had a positive impact in getting a wide range of consumers' responses and views. Study revealed that only a third of respondents were very much informed about food labelling. Also the computed awareness scores based on the number of items respondents declared to be familiar with showed that only one fourth of respondents had high level of awareness on food labelling. Extent of reading food labelling before purchase of pre-packaged foods was relatively high as 86.7 per cent of the study participants reported to read labeling information prior purchase of pre-packaged foods. However, this high extent of reading food labels did not reflect the awareness and use of the information in purchasing pre-packaged foods. On the other hand, this high proportion could possibly be attributed by the supermarket settings since consumers who buy from such places tend to encounter food labels because normally they pick products from shelves by themselves.

Results also showed that, level of education had statistically significant association with extent of awareness about food labeling and it increased as level of education increased. It was observed that level of education and gender difference had statistically significant association with awareness scores and it increased as level of education increased and female respondents seemed to be more aware of food labelling than male respondents. About 46.0 per cent of respondents perceived the food labelling information as very important for enabling them to make informed choices. Statistically significant association has been observed between perception of importance of food labeling and level of education and gender. Perception of food labelling information as important increased as level of education increased while female respondents perceived the food labelling information as more important than their counterparts.

Results showed that 83.3 per cent of respondents mentioned price of food as the factor for motivating them to read food label before purchase of the food item, which indicates that pre-packaged processed food market is highly price driven. Results showed various circumstances such as time constraints (being in hurry) and routine /purchase of familiar foods as major factors for purchasing pre-packaged foods without reading labels. Though

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indicated by few respondents, low price of the food caused some respondents to purchase prepackaged food labels without consulting labelling information. Participants of this study reported small fonts and use of technical/scientific language as major difficulties encountered in the course of reading food labelling information.

Stakeholders and policy makers may design and implement special public education programs aiming at informing pre-packaged food consumers the importance of food labelling information and how best they can use it to make informed healthy choices of food. They should also work on the reported difficulties encountered by consumers in reading and using the information presented on food labels and hence ensuring that pre-packaged food labels are presented in a manner that can help a consumer to make an informed choice of the food.

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