



Exploring the Impact of Food Labels on Consumer Purchasing Decisions: A Study on Awareness and Preferences

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Food labels are an excellent avenue of communication. The food package has assumed the responsibility of communicating relevant information that consumers need to know about the product. The objectives of this study was to understand the impact of food labels on consumer purchasing decisions and also to understand the impact of Demographic variables on awareness and Preference level about Food labels among women consumer in Mysore urban. A total of 200 Housewives between age group of 25-45 years from the residential areas of Mysore Urban and who gave consent to participate in the study were included. The research was based on survey using

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standardized questionnaire and personal interview. The results showed that 33 percent of the respondents were graduates and 63.5 percent were housewives. The awareness about food labels and the attitude of reading labels was studied and the results were encouraging to note that the entire respondent practiced to read the label information. 70-74 percent of the respondents believed that the label information ascertained the safety of the food for used. There was a positive correlation between the Respondents' score and preference score towards food labels and consumer purchasing decisions. It was evident that demographic profile of the consumers has an impact on the awareness of food label and consumer purchasing decision. It was found (Table 4) that subjects Awareness score positively correlated with attitude score towards food labels ($r = 0.7825$) and similarly Awareness score was also positively correlated with Preference of the same ($r = 0.9704$). The results also showed that Attitude and Preference for making purchasing decision had a significant correlation with each other ($r = 0.8913$). It can be concluded that many demographic factors such as age, occupation, family income and food habits had impact on decision making for purchasing the food products. This results of the present study highlight the needs to improve food labeling, provide education to consumers to raise their awareness on importance of reading and use of food labeling information to make an informed choice of the food.

Keywords: Food label; knowledge; attitude; practice; nutrition labelling.

1. INTRODUCTION

Food is provided in attractive wrappers along with eye catching labels. Therefore the primary functions of label is to attract the customer, convey the message and inform about the product in a short time hence label design and the information has assumed importance. It is also a legal obligation to any company to merchandise the market (Victry Samanta, 2024).

Food labels are an excellent avenue of communication. The modern package has assumed the responsibility of communicating relevant information that consumers need to know about the product. This is conducted through providing labels on the package (Mirdoddi and Ashlesha, 2023).

Label is defined as "any written, printed or graphic matter about the article or the contains of a package, provided on paper, wrapper or any such means" label information is provided in two key plans i.e., the "Principles Display Panel [PDP] and information panel [I.P]. Further the labels which are used on food articles that are pre-packed for marking purposes are referred as "Food Labels" (Muhammad et al., 2022, Rahul et al., 2022).

Food labels tell us a lot about food. Not only do they show the name or description of the food, they also indicate the date by which the food should be eaten and the ingredients it contains. Many food labels also carry nutritional information of the food, certain group of food such as baby food or those used for therapeutic

purpose often list the amount of energy and nutrients in the products (Perna Verma et al., 2024, Nurliyana et al., 2011, Simarjeet et al., 2020).

Thus label is an important interface between the manufacturer and the consumer. The role of nutritional labelling is important in the context of emergence of cheaper imitation foods and product innovations. The food nutrition label provides the nutrition information that helps consumers on food choices and gives us information so that customer can choose between foods (Mahan and Escott-Stump, 2008, Srivastav et al., 2022, Mannell et al., 2006). Awareness and knowledge together with correct delivery of nutritional facts are interrelated which can form the consumer's choice of food. Consumer's expectation comes from present-day influences. These can range from newspapers, television and radio to advertising pressures and the demands of consumer activities. The media have a powerful influence on the consumer and play a role in presenting the issues (Nantini, et al., 2019, Vemula, et al., 2014, Donga et al., 2011).

A cross-sectional study of undergraduate students in the Kuala Selangor district of Malaysia conducted in 2011, reported that the practices by reading the nutrition information were significantly associated with the use of food label. The important aspect during buying food product was expiry date (98.5%), taste (95.7%), price (92.4%) and nutrient content (90.5%) were significantly associated with the use of food label. Therefore, this study aims at highlighting the

existing factors like socio-demographic, knowledge, attitude and preference which affect the usage of food labels among Indian consumers with the following objectives.

Objectives: The study was under taken

- To study the Impact of Food Labels on Consumer Purchasing Decisions.
- To study the association between Demographic variables and Awareness about Food Labels and Preferences Purchasing food commodities.

2. METHODOLOGY

Study area: Food purchase is obligatory and is a common human behavior; hence population study was considered as a suitable random technique to select the consumers from residential areas of Mysore Urban on arbitrary basis.

Study Population: 200 Housewives from the selected family aged between 22-45 years were included for the study.

Tools used: The respondents were briefed about the purpose of study and were interviewed to elicit required information using simple standardized questionnaire. The questionnaire was developed in local language. The data so obtained was tabulated and suitable comparisons were made to conclude meaningfully, the consumer behaviour about food labels.

3. RESULT AND DISCUSSION

Consumer behaviour has become important in present marketing system. The decision to purchase a food is a complex process since a wide choice has been provided to the consumers for selection. Food labels therefore performed the task of communicating to the consumer. Awareness about the labels among the consumer is essential to make best use of the selection. It is a legal obligation to provide a standard format of information on the labels of every packaged food marketed.

Demographic Profile of the Respondent: The age of the respondent, family income, family size and food pattern followed by the families among the respondent is present in Table 1.

A perusal of Table 1 also suggests the income distribution of the respondents. All the

respondents had education with a minimum of 10 percent just to read and write as this is very important aspects for KAP regarding food labeling. 63.5 percent of the respondents were house wives, and around 46 percent of them had a family size between 3-7 members which again can influence the consumer's purchasing attitude. Family income Majority of the respondents (55.5%) from all the selected areas belonged to the income between <15000. 32 and 12.5 percent respectively were from 15,001 – 30,000 & > 30,001 income. Regarding the food pattern there was a higher percentage of respondents as non-vegetarian (63.5%) than the vegetarians.

Table 1. The demographics of respondents (n = 200)

Variables	Frequency	Percentage
Age in years		
22-35	120	60.0
36-45	80	40.0
Education of Respondent		
Can read and write	20	10.0
SSLC	47	23.5
PUC	26	13.0
Graduate	66	33.0
Post Graduate	16	8.0
Professional	25	12.5
Occupation		
Housewife	127	63.5
Business/ Service	73	36.5
Family size		
3- 4	92	46.0
5 – 7	93	46.5
8+	15	7.5
Food Pattern		
Vegetarian	73	36.5
Non- vegetarian	127	63.5
Monthly income		
<15000	111	55.5
15,001 – 30,000	64	32.0
> 30,001	25	12.5

The awareness about food labels and the attitude of reading labels was studied and the results are present in Fig. 1. It is encouraging to note that the entire respondent practiced to read the label information. The type of information from the label which was known to the respondent is also presented in Fig. 1.

The brand name and price of the product was known to all the respondents. Manufacturing date, expiry date, net weight, brand name, prize, ingredients used and nutrition profile were read by a higher proportion of the respondents (11-16%). A study reported similar observation as the subjects read the food label and knew about that

food label consists of nutritional information, expiry/ manufacturing date or any logo, net weight, food ingredients added on a food item (Wasowicz-Kirylo and Stysko-Kunkowska, 2011).

Although manufacturers provide nutrition facts on products, it is worth deliberating consumers' knowledge of this information, and their willingness to read, understand and use the information as a guide when making decisions about what food to buy. The importance of label information according to the respondent is given in Table 2. It was evident that all the respondents included for the study opined that label information help to known about the quality of

packed product. A majority of respondent believed that the label information ascertained the safety of the food for used (70-74%). It was encouraging to note that they were aware about, that shelf life of the food and nutritional quality of the product can be known from the labels. Similar observation was made by a researcher who stated that the 80% of the consumers responded "yes". When asked if they had read the nutrition information on the labels before placing food products into the baskets prior to purchasing. However the awareness about the legal approach to get justice in case of cheating or obtaining a default product was less (Masoodi et al., 2019).

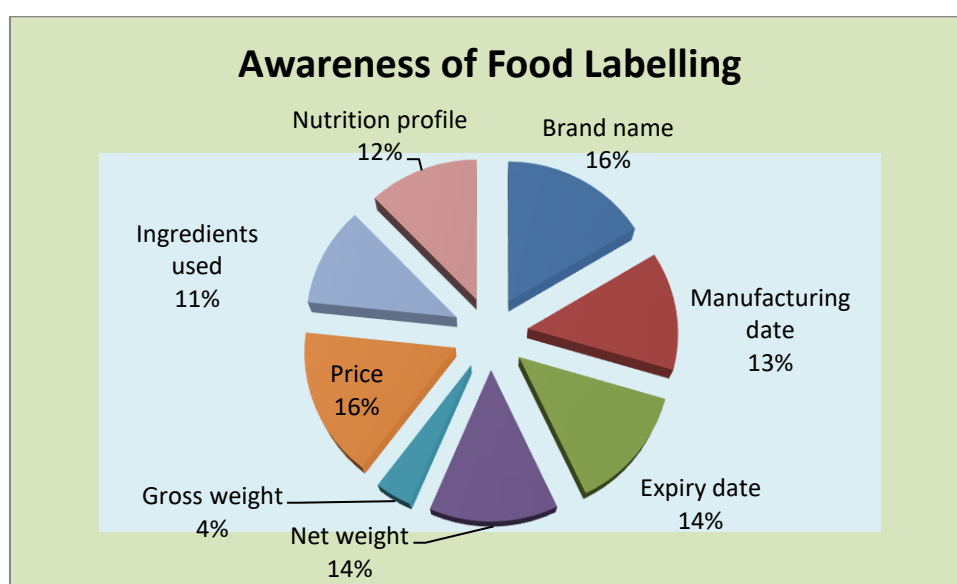


Fig. 1. Awareness and reading practice of food label information among the respondents

Table 2. Attitude of the respondent about importance of food label information

Opinion about usefulness									
To know about the quality of packed products		To be certain that food is safe to use		To use of food before spoiled/ due date		To know the nutrition quality of product		Can easily approach consumer forum in case of product default	
Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
50 (100.0)	-	35 (70.0)	15 (30.0)	42 (84.0)	8 (16.0)	49 (98.0)	1 (2.0)	24 (48.0)	26 (52.0)
50 (100.0)	-	36 (72.0)	14 (28.0)	44 (88.0)	6 (12.0)	37 (74.0)	13 (26.0)	20 (40.0)	30 (60.0)
50 (100.0)	-	37 (74.0)	13 (26.0)	44 (88.0)	6 (12.0)	49 (98.0)	1 (2.0)	35 (70.0)	15 (30.0)
50 (100.0)	-	36 (72.0)	14 (28.0)	47 (94.0)	3 (6.0)	48 (96.0)	2 (4.0)	21 (42.0)	29 (58.0)
200 (100.00)	-	144 (72.0)	56 (28.0)	177 (88.5)	23 (11.5)	183 (91.5)	17 (8.5)	100 (50.0)	100 (50.0)

Factors Influencing on purchasing decision making: Food and Nutrition labels are the labels present on food packages to help the consumers to compare the products, inform them about the nutrients and guide them to make healthy choices. The nutritional labels act as a reliable guide that educates the consumers about the nutritional value of the packed foods. Consumers must also give importance to the nutrition part on the food label for a healthy lifestyle (Robert Daniel and Chandran, 2017).

Perusal of table provides the association between demographic variables and practice level on Food labels.

It is clear that demographic profile of the consumers has an impact on the awareness of food label and consumer purchasing decision. Table 3 shows the fact that age plays an important role in understanding the food label. Younger the age more curious and cautious is the consumers with the attitude towards food label as it may be related to the health and illness. Similar to the findings in this study, Mannell et al reported that French middle-aged or younger adults were more likely to read food labels than older individuals. This could be attributed to the fact that adolescents and young adults need to obtain optimal nutrition during

adolescence to maintain growth, prevent nutritional deficiencies and ensure good health (Robert Daniel and Chandran, 2017, Darkwa, 2014).

From the table it was observed that educational status had no significant influence on food label reading and practicing. As the qualification of an individual participant increases, the knowledge of foods also increases; on the contrary, as the educational level increases, there is no significant relation seen between it. Similar results were obtained by other studies (Nantini, 2019, Mandle et al., 2015) as no significant association could be established between these two parameters during the study. However some studies observed in their respective studies and concluded that there exists a strong positive association between the educational level of the consumers and their frequency of use of labels in practicality (Darkwa, 2014, Zugravu et al., 2011, Masoodi and Mubarak, 2019).

Our findings revealed that there was no association established between the occupation and the use of food labels. This was also proved by Masoodi and Mubarak (2019), Jadapalli and Somvarapu (2018) whereas Drichoutis et al. (2005) contradicted this.

Table 3. Association between demographic variables and consumer purchasing decision

Demographic variables	Category	Sample	consumer purchasing decision				χ^2 Value	P Value
			Low		Moderate			
			N	%	N	%		
Age group (years)	22-35	120	53	44.2	67	55.8	7.38*	P<0.05 (3.841)
	36-45	80	51	63.8	29	36.2		
Educational status	Can read & write	20	9	45.0	11	55.0	2.66 NS	P>0.05 (1.107)
	SSLC	47	27	57.4	20	42.6		
	PUC	26	12	46.2	14	53.8		
	Graduate	66	31	47.0	35	53.0		
	PG	16	9	56.3	7	43.8		
Occupation	House wife	127	59	46.5	68	53.5	4.28*	P<0.05 (3.841)
	Business/Service	73	45	61.6	28	38.4		
Family size (members)	3- 4	92	40	43.5	52	56.5	3.90 NS	P>0.05 (5.991)
	5 - 7	93	53	57.0	40	43.0		
	8 +	15	9	60.0	6	40.0		
Family income/month	<Rs.15000	111	48	43.2	63	56.8	10.05*	P<0.05 (5.991)
	Rs.15001-30000	64	37	57.8	27	42.2		
	>Rs.30000	25	19	76.0	6	24.0		
Food pattern	Vegetarian	73	47	64.4	26	35.6	7.06*	P<0.05 (3.841)
	Non-vegetarian	127	57	44.9	70	55.1		
Combined		200	104	52.0	96	48.0		

* Significant at 5% Level,

NS: Non-significant

Note: Figures in the parenthesis indicate Table value

Income exerted tremendous influence on the awareness, perception and decision making of people in general. Hence the purchasing decision was also found to bare an influence. Income as a factor to influence purchasing decision was analyzed on the basis of per capita food money expenditure, type of food purchased and marketing system for purchase. Studies reported that the monthly income of respondents had a weak positive association ($r = 0.200$) at the significance level of 0.01, with the quality and type of diet they follow. According to some studies (Zugravu et al., 2011, Ketki and Khushdeep, 2016) the consumers with a higher level of income tend to use labels more frequently and effectively whereas Jain et al. (2018), no significant relationship can be found between these two variables. There is an association between income and awareness about food label information. Those with high income don't pay much attention to food label but attention towards the brand and those with low income would like to buy healthy food so they will read the food label. Food habits also had a positive correlation between awareness, preference and decision making for food purchase.

Table 4. Inter relationship between awareness, attitude and preferences scores

No.	Parameter	Correlation (r)
1	Awareness and Attitude	+ 0.7825*
2	Awareness and Preference	+ 0.9704*
3	Attitude and Preference	+ 0.8913*

* Significant at 5% Level

Awareness and preference surveys are focused evaluations that measure changes in human knowledge, attitudes and practices in response to a specific situation. Awareness and preference studies tell us what people know about certain things, how they feel, and how they behave.

It was found (Table 4) that subjects Awareness score positively correlated with attitude score towards food labels ($r = 0.7825$) and similarly Awareness score was also positively correlated with Preference of the same ($r = 0.9704$). The results also showed that Attitude and Preference for making purchasing decision had a significant correlation with each other ($r = 0.8913$). Similar observation was done by Simarjeet and Anshu (2020).

4. SUMMARY

Food Labeling is an important process in the food processing chain and should not be

overlooked. The label is the first point of contact between a consumer and the producer. It is used to identify one product from another and also to make a decision over which product to purchase (Kristal, 1998). Labeling is an important process in the food processing chain and should not be overlooked.

Only 45% of the subjects knew about food labels out of which 8% strongly agreed that food label is anything which is written on food package, 28% agreed that a logo or a picture on a food package is a food label, 41% agreed that nutritional information is a food label, 40% strongly agreed that expiry/ manufacturing date on a food package is a food label and majority of the subjects (93%) practice reading food labels.

The awareness about food labels and the attitude of reading labels was studied and the results were encouraging to note that the entire respondent practiced to read the label information. 70-74 percent of the respondents believed that the label information ascertained the safety of the food for used. There was a positive correlation between the Respondents' score and preference score towards food labels and consumer purchasing decisions.

5. CONCLUSION

It can be concluded that the respondents had awareness about the food labels, however the preference and consumer purchasing decision was influenced by many factors like occupation, family income, food habits and age of the respondent.

Further, the study highlights the needs to improve food labeling, provide education to consumers to raise their awareness on importance of reading and use of food labeling information to make an informed choice of the food.

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of this manuscript.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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