

NUTRITION LABEL USAGE AND CONSUMER DEMOGRAPHICS

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Abstract-

Objective: To study consumer awareness and use of nutrition label.

Design: A convenience sampling was used to select the sample of the study. Survey was conducted with 2200 consumer at supermarket sites selected. Questionnaire contained questions related to awareness and usage of nutrition label and consumer demographics. We have performed X^2 tests to examine association between the demographic variables and reading nutrition label.

Setting: Ahmedabad, Rajkot, Surat and Vadodara, four main cities of Gujarat.

Results: The results confirm out hypotheses that education, age, BMI, and marital status are significantly associated with reading nutrition label. Majority of the consumer refer label on food for Manufacturing date, price and brand. There are various format of food label available out of them majority of consumer were aware about "Per Packet Measurement of nutrition label".

1. Introduction

Consumers are generally influenced by various factors in decision making process. The demographic factors are of major interest to any manufacturer because it can change peoples' decisions. The markets can be fragmented in to various micro segment based various demographic variables. Study of demography is a vital and measurable statistics of a population (Schiffman, Leon and Leslie Lazer Kanuk 2004). The demographic variables are gender, age, education, marital status, religion, general nationality, stage of life cycle, social class, family size, occupation (Kotler 2003). Demographics used to describe the number individuals in the population and also the structure of population in terms of various demographics. Each of these demographic factors affect various decisions of consumers.

A majority of the consumers are aware about nutrition label; they have reasonable knowledge of it and can use these labels whenever stimulated but very few refer the nutrition labels while purchasing product (K. Grunert 2008). Food label provide information about various aspects of product like technical, environmental, health and safety aspect. Nutrition label offer somewhat success to a public health communication method, by providing important contribution towards information sharing. Label helps people in some cases, if they have the knowledge and motivation to use information on the product (Rotfeld 2009). It enables consumers to compare the nutrition values of similar food products and then make healthy food choices based on the relevant nutrition information (Grunert et. al. 2010). Consumer can use information available to make healthier choice (Padberg and Caswell 1992). Earlier the food label was limited to food name, price, quantity and identity of producer. But now it's really demand of the time to provide detailed information about nutrition labels as a part of food label (Singla 2010).

Packed food producers are keenly interested in providing information to consumers. They are continuously finding ways to inform consumer about the quality of product at the point of purchase. As a result of these attention from both the side, food label become an important source of information. Such growing interest of industries and consumer in the food labels push government to ensure that the information provided on product must be understandable, trustworthy and consistent. The Food Safety and Standard Authority of India (FSSAI) clearly states that no person shall sale any packed food product which is not label in the manner as specified by the regulation. There are evidence reveals that the provisions of nutrition label allow consumers to switch consumption from 'unhealthy' products to 'healthy' products more easily (Zarkin and Anderson 1992).

In many parts of the world, food processing companies, government and consumer are scrutinizing the provision of nutrition information on food labels. With the help of nutrition label consumer can choose healthy food and can easily maintain healthy diet. With the help of it manufacturer can differentiate their product easily and it became easy for them to win trust of consumer by providing right information. Government can have control over the quality of food, with the help of nutrition label and also can save certain cost which incur by non-communal disease most probably generated by unhealthy diet, which again lead by unhealthy food choice. There for its imperative to know the factors that affect consumers' usage of nutrition label. There are many factors affecting consumer's choice of using nutrition label while shopping. This study revisits the role of demographic factor in use of nutrition label among consumers. It aimed to identify the relation between demographic factors and usage of nutrition label.

2. Hypothesis building

2.1. Reason for using nutrition label

Consumers use nutrition labels with different reasons; some of them use nutrition label to have healthy food and to avoid chronic disease, whereas some may already have chronic disease and advised by their doctors to follow certain nutrition guidelines. There are studies, have assessed the relation between nutrition label usage and health of consumer. By identifying such association and contribution to usage of label, could help to understand the impact of nutrition label among consumer purchase decisions.

2.2. Hypothesis

Age

Age of the consumer is one of the significant parameter affecting use of nutrition label. Consumers' knowledge towards nutrition differed as per age (Cooke and Papadaki 2014). Age is one of the variables affect the probability of reading nutrition labels (Falola 2014). Consumer age is negatively related with the usage of nutrition label (Aygen 2012). There are higher chances that younger respondents are more knowledgeable and easily locate information on the food product than older one (Merwe, et al. 2012). There are fewer chances with older group of consumers in the case of reading nutrition label (Yong, Foong and Debbie 2015).

H₀: Nutrition label reading is independent of the age of consumers

Gender

Gender of the consumer affects their purchase decision and usage of various sources of information. Most of the study found that gender plays vital role in the usage of nutrition label. According to gender nutrition label of the consumer differ (Cooke and Papadaki 2014).

Women are more interested in having healthy food than men (Grunert, Wills and Celemin 2010). Women are more health conscious and that's why they check labels more compare to men. (Zugravu, et al. 2011). Females are more willing to read a food label (Wade and Kennedy 2010). Females are willing to pay more for nutrition information as they play role of family food gatekeeper (Prathiraja and Ariyawardana 2003).

H₀: Nutrition label reading is independent of the gender of consumers

Education

Education level of the consumer affect their purchasing decision and the way they consider and interpret information provided to them. There is significant association between awareness and usage of nutrition label with the level of education (Priyadarshini 2014). There are higher chance that the consumer with more year of education have more nutrition knowledge compare to its counterpart (Bazhan et al. 2015). Consumers who have completed high school or above are more concerned about nutrition label (Aygen 2012). Education status of the food planner in the family positively affects their willingness to read the food label (Falola 2014). Consumer with low education face technical problem to understand nutrition label (Carrillo et al. 2012).

H₀: Nutrition label reading is independent of education of consumers

Income

Income play a very important role in the purchase decision of the consumers. It is one of the factors which create significant impact on the usage of nutrition label (Gupta and Dharni 2016). The food gate keepers with higher household income are more likely to refer nutrition label compared to their counterpart (Falola 2014). Chances of using nutrition label are higher when consumers earning are high (Yong, Foong and Debbie 2015). There are research found contrast evidences also. Income of consumer didn't play any role in the usage of nutritional label (Manisha 2010). The consumer living in the high-income area less likely to use nutrition label, one of the reason might be they have long working hours and they spend less time on shopping (Aygen 2012).

H₀: Nutrition label reading is independent of the monthly income of consumers

Body Mass Index

Body mass index is obesity measurement tool which consider height and weight of a person. Person with high BMI are consider as obese and it's obvious that they have to take care of the food that they consume. Knowledge of consumers towards the nutrition label is affected by the body mass index (Cooke and Papadaki 2014). Males and females with high BMI reported more nutrition label use compared to the others (Su, et al. 2015). The research also found contradicting evidences that the people with high BMI have less interest in healthy eating which mean referring nutrition label (Grunert, Wills and Celemin 2010). BMI is negatively related with the time allocated for information search (Alessia and Alessandro 2011).

H₀: Nutrition label reading is independent of the Body Mass Index level of consumers

Marital status

There may be some variation in the factors that consumer consider while purchasing product before and after marriage. There is a significant relation between marital status of the consumer and use of nutrition label (Yong, Foong and Debbie 2015). Married consumers are more conscious about nutrition label compared to singles (Ukegbu 2016). There are opposite evidences also, marital status not have any impact on the usage of nutrition label (Aygen 2012).

H₀: Nutrition label reading is independent of the marital status of consumers

Teenagers in the family

In general family take care of food when there is children in the family. But there is no research from the review found such relationship; number of children in the family did not create any effect on the usage of nutrition label (Manisha 2010). The family with or without children doesn't affect the usage of nutrition label (Syed Hassan and Bakhtiar 2012, and Aygen 2012). Probability of purchasing nutrition labelled food products is lower in the case of households with children compared to the counterpart of it (Smed, Edenbrandt and Koch-Han 2017). According to Falola (2014) a member increases in the number of school going relate negatively with usage of nutrition label.

H₀: Nutrition label reading is not independent of availability of children below 18 year in family of consumers

3. Research Method

A questionnaire was designed to solicited information on the awareness and usage of nutrition label. The questionnaire consisted of three parts, one filter question, 26 statements about awareness and usage of nutrition label, 9 demographic factor related questions and 13 statements on their health consciousness. The filter question was "Do you purchase/consume packed food products?" The statement on awareness was to check whether the consumer were aware or not and to examine depth of awareness. Usage of nutrition was checked by asking question on frequency of usage, situation of usage, purpose of usage and impact of nutrition label on their purchase decision.

The population consisted of the food shoppers aged above 18 year who live in the four selected cities (Ahmedabad, Rajkot, Surat and Vadodara) of Gujarat. From each city sample was drawn as per the proportion of total population of the city, comprising

2200 respondents. Various food supermarkets and unorganised packed food retail store served as the sampling site. Every shoppers leaving the store appeared to be at least age of 18 years have been approached. If the respondents were couple, they counted as one unit. The sampling design was also composed of time period per week only on Saturday and Sunday. The time duration for survey was from 3:00p.m. to 5:30p.m. on every Saturday and from 9.00a.m. to 1.00p.m. and 2.00p.m. to 6.00p.m. on Sunday.

A questionnaire was designed to solicited information on the awareness and usage of nutrition label. The questionnaire consisted of two parts, one filter question, 26 statements about awareness and usage of nutrition label, 9 demographic factor related questions. The filter question was “Do you purchase/consume packed food products?” The statement on awareness was to check whether the consumer were aware or not and to examine depth of awareness. Usage of nutrition was checked by asking question on frequency of usage, situation of usage, purpose of usage and impact of nutrition label on their purchase decision.

A total of 2192 completed questionnaires were collected. There were total 92 respondents not aware about nutrition label. So the remaining questionnaire 2100 out of which 270 respondents don't read nutrition label because of various reasons.

4. Results and Discussion

The data were checked for consistency before being entered on a computer. Descriptive statistics like frequency distribution and cross-tabulations were done and the X^2 test was used to assess the significance of associations between variables.

Demographic profile of the consumers

It was observed from the study that a higher proportion of female (55.54%) shopped for packed food products than men (44.41%). Almost half of the consumers aged above 50 years.

The majority of consumers (69.5%) were having monthly income more than Rs.25,000. About 68.95% respondents were married. The majority of respondents (89.2%) were having education above school. Almost more than half of the respondents (57.59%) have children below 18 years in their family. About 67.2% respondents were having a healthy BMI level. The majority of respondents (80.66%) didn't have diseases like high blood pressure, liverdamage, stroke, diabetes, and osteoporosis. There were only 4.20 percent respondents not aware about nutrition label and only 12.32 percent respondents was not reading nutrition label even though they were aware about it. The profile of the respondents is provided in Table 1.

Table1. Demographic Profile and Situation factors of the Respondents

		Frequency
Gender	Male	974
	Female	1218
Age	18-29	323
	30-49	641
	50-64	664
	65 or more	564
Monthly Income	Below 10,000	82
	10,000 to 25,000	586
	25,001 to 40,000	835
	More than 40,000	689
Marital Status	Single	680
	Married	1512
Education	Below School	236
	High School Completed	509
	University Students	325
	Graduation	403
	Post Graduate	710
	Beyond Post-Graduation	9
Teenagers in family	Yes	929
	No	1263
BMI Level	Underweight	76
	Healthy	1473
	Overweight	560
	Obese	83

Table2. Awareness towards various format of nutrition label

Nutrition label format	Yes	No
Per Packet Measurement of nutrition label	874	956

Per 100gm or 100ml Measurement of Nutrition Label	738	1092
Per Serving size Measurement of Label	514	1316

The majority of respondents (47.76%) were aware about “Per packet measurement of nutrition label” format which is followed by “Per 100gm or 100ml measurement of nutrition label” (40.32%) (Table2).

Table3. Importance given to various information on label

Label information	Little Importance	Average Importance	Absolutely Essential
Manufacturing date of product	44	51	1735
Brand of product	223	999	608
Nutrition properties of product	794	417	619
Price of the product	190	226	1414
Taste of the product	152	128	1550

When asked about the importance given by respondents to various information on label while purchasing packed food product, most of the respondents (94.81%) respondents reported that manufacturing date of product is absolutely essential, which is followed by taste of the product (84.70%) and price of the product (77.27%). Brand of product is of average important to the most of respondents (54.59%). There were most of respondents (43.39%) for whom nutrition properties of product is of little importance while purchasing packed food product (Table3).

Education and reading nutrition label

It was observed that there was a positive association between education level and reading nutrition label education ($p = 0.000$). The result of this study is in accordance with the previous studies, in which the consumers with higher education read label more. Consumers who have completed high school or above are more concerned about nutrition label (Aygen 2012).

Marital status and reading nutrition label

Due to the previously reported relationship between the marital status and habit of reading nutrition label (Yong, Foong and Debbie 2015), in the present study the habit of reading nutrition label of married consumer compared to those unmarried. The result of current study seems to be in line with previous studies, as there was a significant relationship between marital status and reading nutrition label ($p = 0.003$). Married consumers are more conscious about nutrition label compared to singles (Ukegbu 2016).

Age and reading nutrition label

To determine whether there was a significant relation between gender and nutrition reading, a chi square used. From the test a significant association was found ($p = 0.000$). The result was in line with past studies, which shows that it is one of the variables affect the probability of reading nutrition labels (Falola 2014). From the frequency we can identify that there was a negative relationship between age of respondents and reading nutrition label.

Body Mass Index level of consumers and reading nutrition label

A chi square was used to determine whether there was a significant association between BMI and reading nutrition label. A significant association was found between these two ($p = 0.011$). From the frequency we found that the consumer with higher BMI, use more nutrition label. The result were in line with the outcome of past studies, Males and females with high BMI reported more nutrition label use compared to the others (Su, et al. 2015).

The hypotheses regarding gender, income and teenager in the family were not significantly associated with the reading nutrition label. Result of hypothesis for relation between teenager in the family and reading nutrition label is directly supported by the outcome of study conducted by Syed Hassan and Bakhtiar (2012), as they found that the family with or without children doesn't affect the usage of nutrition label.

5. Conclusion

This study reveals that a majority of consumers tend to read nutrition label. It also reveals that there was association between education, age, BMI, and marital status with reading nutrition label. Higher education may help consumer in analysing and understanding nutrition label and its various components. There was negative relationship between age and reading nutrition label, reason for the same might be lack of knowledge or complex format of nutrition label to understand on the old age side. Consumer with higher BMI read nutrition label more, reason for the same might be doctors suggestion, or health consciousness. Married consumer refer nutrition label more compare to the counter part of it.

Consumers across the all the demographic profile reported that they checked food label for manufacturing date. Many consumers cited that the price and taste of product is important component while purchasing packed food product. The study also reveals that there were fewer consumers giving more importance to the nutrition label available on packaging compare to other components.

6. Limitation

This study has several limitations. First, the survey question was only on nutrition label use and did not cover various elements of nutrition label. Second, the use of self-reported data might be biased or there might be few data vary from the actual one because of responses of consumer based on past memory. Third, the study was carried out among the supermarket shoppers of cities of Gujarat, India. There for the sample may appear to be skewed.

7. References

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