

Role of health consciousness and food safety concern in buying organic food products

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Abstract

The aim of this study is to examine how health consciousness and awareness for food safety can influence consumer perception regarding buying organic food products. This study vehemently revealed that health is the prime motive for buying organic food products followed by food safety. Elder consumers are more health conscious and prefer to buy organic food. Well educated affluent consumers are more likely to buy organic food products. Finding reveals that male and female consumers have similar level of health consciousness and food safety concern. Organic consumers can be identified through demographic variables such as income, education, and age. There is need to create awareness among consumers especially in young generation regarding health and safety benefits with respect to organic food. It seems challenging to create understanding among uneducated and less educated people regarding health and safety issues related to food.

Keywords: organic food, health, safety, purchasing behaviour

1. Introduction

“Organic” refers to products which “produced or involving production without the use of chemical fertilizers, pesticides, or other artificial chemicals” (Oxford dictionary) According to international organic principles, the use of antibiotics and genetically modified organisms are restricted in animal husbandry and only 30 additives and preservative are acceptable with specific circumstances (Soil Association, 2002).

Origin of the term

The term organic farming was firstly explored by Lord Northbournem in his famous book “Look to the Land” (1940), out of his idea of “the farm as organism,” to describe a holistic, ecologically-balanced approach to farming in contrast to what he called chemical farming, which relied on “imported fertility” and “cannot be self-sufficient nor an organic whole” (USDA*, 2002) [37].

Organic agriculture is an ecological production management system that promotes and enhances biodiversity, biological cycles and soil biological activity. It is based on minimal use of off-farm inputs and on management practices that restore, maintain and enhance ecological harmony” (National Organic Standards Board, April 1995).

Nowadays people are transforming into the sophisticated life, which directly influence the consumer preference and food choices. Consumers’ eating habit is changing rapidly day by day because of increase in consumers’ awareness level regarding nutritional value, health and food safety issues (Gil, Gracia and Sanchez, 2002). With the increase in standard of living, income and education level, consumers are become more health conscious and inclined towards healthy food. Health and safety issues draw the attention of consumer towards organic food. (Fotopoulos & Krystallis, 2002; Zotos, 1999) [13, 42]. Raising consumers’ interest in chemical and

pesticide-free food leads to boost up demand for organic food (Childs and polyzees, 1997, Baltas, 2001) [7, 5].

In 2015, worldwide retail sales of organic food and drink touched 81.6 billion US dollars (FIBL & IFOAM, 2017) [11]. With a growth rate of ten percent as compared to previous year. The global market of organic food has increased over four-fold during 2000 to 2015 (18 to 81.6 billion US dollars). Approximately, 90 percent of the organic food and drink sales came from America and Europe. Conversely, their share in global sale is shrinking due to other region (Asia, Africa) also introduced organic farming and their emphasis on export only. Country wise market share explored that United States is the largest market of organic food (39.7 billion US dollar) followed by the Germany (9.5 US billion) and France (6.1 US billion dollar). According to report FIBL & IFOAM 2017 [11], solely United States covers largest single market about 47 percent of global organic market followed by Europe (35%) and china (6%). Switzerland (290 US dollar) has highest per capita consumption of organic food followed by Denmark, Sweden and Luxembourg that is more than 188 US dollar. However, Denmark has highest share in organic market (8.8 percent) followed by 8.4 percent by Switzerland and 7.5 percent by Luxembourg (FIBL & IFOAM, 2017) [11].

In 2015-16 India produced 1.35 Metric Tonnes of certified organic food with varieties of food and nonfood products (APEDA, 2016) [3]. Sikkim has been declared fully organic state. India is the largest producer of organic cotton followed by China, Turkey, Tanzania and the USA and also have largest number of organic producers (5.8 lakh) in the world followed by Uganda and Mexico that is, 1.6, and 1.9 lakh respectively (FIBL & IFOAM, 2017) [11]. India has exported 263687 Metrics tonnes of organic food in European Union, United states, Switzerland, New Zealand, Australia, Canada and different part of the world in 2015-16, worth around \$298 US dollar. According to Tech Sci Research report 2015 [35], the Indian organic food industry is expected to grow at the

*USDA stands for United State Department for Agriculture

Compound Annual Growth Rate of more than 25 percent during 2015-20.

Rampant use of pesticide in farm by the agriculturist for more production is creating many health and environmental issues. Negative attitude towards pesticide were explored (Bearler and Willits, 1968) ^[6] and found people concerned about that they are consuming pesticide, increased the use of organic food (Sachs *et al.* 1987) ^[32]. Organic farming is an alternative way to move towards sustainable food production system and Consumers typically understand the broad issues about organic foods but not understood the complexities of organic farming practices and organic food quality attributes (Padel & Foster, 2005) ^[26]. Davies (1995) ^[10] explores one more additional positive attribute that improved taste also associate consumers with organic food products. Number of reasons as well as some barrier grouped according to general and commodity-specific concerns. General concerns including food safety, human health, environmental impact and the commodity-specific concerns like taste, freshness and packaging. Organic mislabeling, product misrepresentation and non-uniform organic standards and certification procedures are some barrier which holds some consumer back from purchasing organic food (Yiridoe *et al.* 2005) ^[41]. More information provided to consumer about organic food market enhance consumer knowledge which results that positively influence consumers attitude towards organic food of those people who follow the healthy and balanced diet in daily routine (Magistris and Gracia, 2008) ^[21].

This research aims to examine how consumers associate with health and food safety issue while deal with the organic food products. This study wants to explore that which motive significantly influence consumers to buy organic food products. Demographic characteristics also analyzed to understand profile of consumers and their opinion regarding organic food products.

2. Literature Review

Health consciousness refers to attitude in which one has aware about healthiness of their diet and lifestyle. Health conscious consumers are concerned about their health and always motivated to maintain quality of life (Kraft and Goodell, 1993; Newsom *et al.* 2005) ^[17, 25] and aware regarding nutrition and physical risk involved in consumption of food (Kraft and Goodell, 1993; Yee *et al.* 2005) ^[17, 39]. Previous studies have found that health considered as a prime motive for purchase organic food (Tregear *et al.* 1994; Lockie *et al.* 2002; Padel & Foster, 2005) ^[29, 19, 26]. Organic food contains higher vitamin c value as compare to conventional food (Soil Association, 2000) ^[33]. Organic food contains more nutritional value which is perceived as healthier and more favorable alternative to conventional food. (Baker *et al.* 2004 ^[4], Lea & Worsley, 2005 ^[18], Lockie *et al.* 2004 ^[20]; Magnusson *et al.* 2001; Padel & Foster, 2005, Tregear *et al.* 1994) ^[26, 29]. Consumers' belief that organic food is safer, good in taste, more pleasant and reliable than conventional food (Schifferstein & OudeOphuis, 1998, Baker *et al.* 2004; Fotopoulos *et al.* 2003) ^[30, 4, 13]. Consumers who are involved in green consumption practices and perceived themselves as health conscious are highly inclined to consume organic food products (Lockie *et al.* 2004) ^[20].

People who highly environmental conscious know eco-friendly technique is used for production and cultivation of organic food. (Chinnici *et al.* 2002) ^[8].

The profile of organic consumers identifies through their awareness regarding food safety, environment protection attitude, lifestyle and demographics variables (Stobelaar *et al.* 2006) ^[34]. Consumers perceived food safety in term of chemical, preservative and additives in fruits, vegetables and processed food (Honkanen *et al.* 2006) ^[14]. Organic consumers are well aware that there is fewer physical risk involved in consumption of organic food than conventional food (Angulo *et al.* 2003; Yee *et al.*, 2005) ^[2, 39]. The loyal consumer of organic food perceived to be wealthy, possess high-class status and well educated. (Padel and Foster, 2005; Stobelaar *et al.* 2006) ^[26, 34]. Highly educated female who belongs to higher income group were more aware and having enough knowledge regarding food risk (McIntosh *et al.* 1994; Torjusen *et al.* 2001; Stobelaar *et al.* 2006) ^[28, 34]. There was a strong correlation between the level of formal education and increasing consumption of organic food (Lockie *et al.* 2002) ^[19]. Women are highly concerned to pay a premium price for natural processed food and environment friendly goods (Soil Association, 2000) ^[33].

A study was conducted in Spain by Urena *et al.* in 2008 ^[36] found that consumers are willing to pay a premium price for organic food products. This study classifies organic food consumers into different categories specifically on the basis of consumption pattern. Consumers are divided into three categories namely regular, occasional and non-buyer. In this study consumers who buy twice a week are regular consumers (12%) and more conscious about health and food safety. Occasional consumers represent 42 percent and remaining 46 percent represent non-buyers. But in a non-buyer category almost 25 percent buyers were prospective consumers with a high intention to purchase organic food in near future. The main barricades which suppress the demand for organic food are a premium price, non-availability, lack of accurate knowledge and awareness. Thus, these barriers develop negative perception in the mind of consumers, especially higher price shift potential consumers towards conventional food and consumers were satisfied with conventional food (Jolly, 1991; Tregear *et al.* 1994; Roddy *et al.* 1996) ^[15, 29, 27]. Moreover, some studies revealed that consumers are ready to buy organic food but non-availability of organic food restricts them from purchasing (Roddy *et al.* 1996; Wandel and Bugge, 1997) ^[27, 38]. All these kinds of obstacles continue to push back the demand for organic food in the market (Magnusson *et al.* 2001).

The quality of food incorporates many attributes in its womb like nutritional value, sensory attributes (appearance, aroma, taste, and texture), free from pesticides and safety factors (Abbott, 1999; Mizrach, 2008) ^[1, 23]. So the above review suggested that health and safety attributes are plays significant role in initiating and enhancing the demand for organic food. This study attempts to investigate the role of health and safety in purchasing organic food products regarding various demographic dimensions. Next section deals with research methodology (objective, hypotheses, Sampling, Statistical techniques) followed by data analysis and last section embodied with finding and conclusion.

3. Research methodology

Research methodology deals with the methods adopted to carry out any study. Research methodology gives a planned path for carrying out a project work. A study without a research methodology will not culminate in desired results. It explains objectives of the study, area of the study, sampling technique adopted, sample size, statistical techniques used.

Objectives of the study

The main objective of the study is to examine the role played by consumers' demographics on organic food product. To achieve this objective following are the sub objectives.

- a) Role of demographics on consumers' perception for Health consciousness for organic food products.
- b) Role of demographics on consumers' perception for food safety concerns for organic food products.

Hypothesis of the current study

- H1a** : Health consciousness regarding organic food products differs significantly across different age groups.
- H1b** : Health consciousness regarding organic food products differs significantly across different occupation groups.
- H1c** : Health consciousness regarding organic food products differs significantly across different education groups.
- H1d** : Health consciousness regarding organic food products differs significantly across different income groups.
- H1e** : Health consciousness regarding organic food products differs significantly across gender groups.
- H2a** : Food Safety regarding organic food products differs significantly across different age groups.
- H2b** : Food Safety regarding organic food products differs significantly across different occupation groups.
- H2c** : Food Safety regarding organic food products differs significantly across different education groups.
- H2d** : Food Safety regarding organic food products differs

significantly across different income groups.

H2e : Food Safety regarding organic food products differs significantly across different gender groups

Sampling

Convenience sampling method was adopted to select the respondents. The study has been conducted in Delhi NCR. A total of 400 questionnaires were distributed among respondents of Delhi. 383 questionnaire were found fit for further data analysis, which leads to a final sample size of 383. To make the current study holistic in nature, data were collected from the consumers of all demographic profiles.

Questionnaire formulation

The study adopts the exploratory cum descriptive research design and is primarily based on primary data. Questionnaire contains 10 simple understandable statements regarding health consciousness and food safety to examine the consumers' perception towards Organic food products. Food safety statements was adapted from Magistries & Gracia (2008) [21] and health related items was adapted from Yi, (2009) [40] & Mutlu (2007) [24] as recommended by Malhotra (2008), sensitive questions like income and demographics were kept in the second part of the questionnaire.

Statistical Techniques

Most practiced index of internal consistency in social sciences researches on multi-item measures, the Cronbach's alpha (Schmitt, 1996) [31] was used to check reliability in the present study. Besides these techniques, mean, variance, the standard deviation was calculated and used at various stages of data analysis. All the 10 statements of the questionnaire were subjected to the alpha test of reliability; the Cronbach's alpha statistic for 10 statements was, 868 showing that scale is reliable.

Table 1: Demographic Profile of the respondents

Demographic		Frequency	Proportion of the sample (%)
Gender	Male	209	54.6
	Female	174	45.4
	Total	383	100.0
Age	21-30	47	12.3
	31-40	131	34.2
	41-50	124	32.4
	51-60	61	15.9
	Above 61	20	5.2
	Total	383	100.0
Occupation	Govt. Services	114	29.8
	Private Services	153	39.9
	Business	91	23.8
	Specified any other	25	6.5
	Total	383	100.0
Education	Graduate	166	43.3
	Post-Graduate	196	51.2
	Doctorate	21	5.5
	Total	383	100.0
Income per month	20,000 to 50,000 Rs	112	29.2
	50,000 to 1,00,000 Rs	144	37.6
	1,00,001 to 1,50,000 Rs	65	17.0
	1,51,000 to 2,00,000 Rs	28	7.3
	Above 2 lakh	34	8.9
	Total	383	100.0

Source: Primary data

*significant at, 05 level of significance

The demographic profile of respondents was analyzed using frequency distribution. Total sample size is 383. Table 1 shows the demographic profile of the respondents. It shows that data was gleaned from 54.6 percent (209) of male and 45.4 percent (174) of female respondents. A majority of respondents lies in the age group of 31-40 and 41-50, which signify that respondents belong to middle age and upper age.

Table 1 depicts that a significant number of respondents (39.9 percent) were belongs to private services, 28.2 percent were belongs to government services, 23.8 percent were engaged in different businesses. While considering education level, all respondents are well educated as 51.2 percent are post graduated and 43.3 percent are graduated.

Table 2: Age wise comparison of consumers’ perception regarding health consciousness and food safety of organic foods

Age of the Respondents	Health Consciousness	Safety regarding food
21-30	3.36	3.78
31-40	3.78	4.07
41-50	3.84	3.99
51-60	3.87	4.03
Above 61	4.04	4.00
Total	3.81	4.00
F	4.998	1.73
Sig.	.001	.142

Source: Primary data
*significant at, 05 level of significance

Table 2 gauges the perception of consumer for the dimension of health consciousness and food safety regarding organic food products on the basis of age. F-test statistics shows that p-value (0.01) is less than 0.05. Consequently, it can be concluded that H1a is statistically significant at 5 percent level which signifies that respondents of different age group have diverse views for the above health awareness dimension (supported H1a hypothesis). But in the case of food safety f-

statistics gave insignificant p-values (.142) which does not support hypothesis H2a. It can be concluded that consumers across various age groups have almost similar opinion for food safety. The mean value range exhibits that elder respondents are more health conscious than younger respondents and prefer to buy organic food. But opinion of all the age group respondents for the dimension of food safety was similar.

Table 3: Occupation wise comparison of consumers’ perception regarding health consciousness and food safety of organic foods

Occupation of the Respondent	Health Consciousness	Safety regarding food
Govt. Services	3.90	4.07
Private Services	3.68	3.91
Business	3.88	4.01
Retired	4.33	4.09
Total	3.91	4.02
F	2.204	1.516
Sig.	.020	.197

Source: Primary data
*significant at, 05 level of significance

Table 3 demonstrates the f-value for health consciousness is 2.204 and p-value is (0.020) found significant results. Hence hypothesis H1b is supported. It signifies that the respondents of different occupation group have diverse views for the above health awareness. For the dimension of food safety f-test provides insignificant result (0.197) which does not

support hypothesis H2b. It can be concluded that change in occupation of respondents produces significant variation in respondents’ opinion for health dimension. On other hand results indicate that respondents having different occupation group shows similar opinion for above food safety dimension while purchasing organic food products.

Table 4: Education wise Comparison of consumers’ purchasing regarding health consciousness and food safety

Education level of the Respondent	Health Consciousness	Safety regarding food
Graduate	3.73	3.97
Post-Graduate	3.88	4.00
Doctorate	4.26	4.02
Total	3.81	4.22
F	3.174	2.55
Sig.	.024	.645

Source: Primary data
*significant at, 05 level of significance

Variance across education groups for health consciousness dimension is not similar as per the significance values (p-value =.024) of this factor is significant at 5% level of

significance. It signifies that respondents of different education group have diverse views for the health awareness dimension, which support hypothesis H1c. The factor namely

food safety f-statistics gave insignificant value which indicates that respondents across various education groups have almost similar perception and awareness level towards food safety, which does not support hypothesis H1c. Awareness and perception of consumer toward organic food

of different education groups is not different to a large extent for food safety factor. Whereas, respondents' awareness and perception indicates significant difference for the dimension of health for organic food (Table 4)

Table 5: Income wise Comparison of consumers' perception regarding health consciousness and food safety

Monthly household income of the Respondent	Health Consciousness	Safety regarding food
20,000 to 50,000 Rs	3.48	3.81
50,000 to 1,00,000 Rs	3.96	4.03
1,00,001 to 1,50,000 Rs	3.98	4.19
1,51,000 to 2,00,000 Rs	3.87	4.05
Above 2 lakh	3.94	4.14
Total	3.81	4.00
F	6.412	3.441
Sig.	.000	.005

Source: Primary data
*significant at, 05 level of significance

Scrutinizing the results from the perspective of income of consumers revealed that, irrespective of the income of consumers, opinio of the consumers regarding health consciousness (p-value =.000, which <, 05 significant level), and food safety (p-value =.005, which <, 05 significant level) were found significantly different among various income groups of consumers. It signifies that respondents of different income group have diverse views for the above health awareness and food safety dimension which supports hypothesis H1d and H2d (Table 5). So, results revealed that income contributes variation in the gravity of the influence on consumer purchasing behavior towards organic food products. It can be interpreted that respondents having different income category exhibits diverse opinion for health and food safety dimensions (Table 5).

Table 6: Gender wise Comparison of consumers' perception regarding health consciousness and food safety

Dimensions	t-test for Equality of Means		Mean values	
	T	Sig. (2-tailed)	Male	Female
Health Consciousness	-.111	.912	3.8102	3.8190
Food Safety	-.477	.633	3.9880	4.0201

Source: Primary data
*significant at, 05 level of significance

Variance between male and female groups for the factors of health consciousness and food safety is homogenous as per the significance values of these factors is not significant at 5% level of significance. It signifies that both male and female respondents have parallel views for the above two dimensions, which does not support hypothesis H1e, H2e. So, Study vehemently indicated that there is no significant difference between in opinion of male and female for health consciousness and food safety while buying organic food products. Gender does not contribute any variation in the gravity of any of the influence on consumer purchasing behavior towards organic food products. It can be concluded that opinions of all gender category respondents were similar for health and food safety dimension.

Conclusion and recommendation

The present study is elementary and general in nature. The study is focusing on consumer perception regarding health consciousness and food safety dimensions while buying

organic food products. The perception and awareness level of consumers was also measured through some simple questions. The study was exploratory in nature and health and food safety issue provides certain insights regarding the consumers' perception. The finding of study explored that there are varying views on health and safety concern dimensions among different age group consumers. The old age consumers are more health conscious and inclined towards organic food than young consumers. The findings showed that most vital factor which encourages consumer to buy organic food is health concern followed by food safety. Retired and government consumers are more health conscious and concern towards food safety which show high positive perception regarding organic food. Consumers of different income and education group have a diverse opinion regarding health and food safety while buying organic food products. Well educated and higher income consumers are shown more interest in buying organic food products than less educated and lower income group. Perception regarding organic food in male and female are similar and both are health consciousness but in case of food safety female are slightly more concern than male counterpart.

Clear understanding and proper knowledge about product change the opinion of consumers. Therefore, need to provide accurate, clear and reliable information among consumers regarding organic food products. If more and more information is provided to consumers regarding health and food safety concern so it influences their perception towards organic food products. Possible explanations are that those who have purchased organic food are most likely to repurchase it for health benefits. They seem to be repeat buyers. Thus, the potential of obtaining positive attitudes is likely to encourage the consumers to buy organic food on regular basis.

So, as for the recommendation it is important that government, organic food producers and marketers should take initiative through carrying out product awareness programs in exhibitions, trade shows, advertisements and effective campaigns on regular basis to create awareness regarding benefits of organic food in order to build up healthy food culture among the consumers and society. Finally, regular basis program can help to create positive perception towards organic food products

Limitation and area of future research

Every study has certain limitations so this study also has some limitations. The study was conducted only in the national capital region (Delhi). Secondly, the study has not emphasis on specific organic food categories. Thirdly, this study concern with two variables but in future study more variables will consider for a bigger and clear picture of consumers' perception. Study can be performed in another part of the country for better understanding and generalization of entire data. Furthermore, other explanatory variables may account for the findings; therefore, they can be undertaken in the future research.

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