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Awareness and consumer behavior with regard to organic food in Nagpur district

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Abstract

The aim of this study was to find out the knowledge of organic food in Nagpur district. The primary data were collected by personal interview method in pre-designed schedule. The collected data were analyzed in the three main parts, namely, socio-economic profile, buying behavior and constraints faced by the consumer with respect to organic food and analyzed using descriptive statistics and chi-square test. From the chi-square test at 5 percent level of significance, it was found that the age and income level of consumers were independent of the awareness of organic food but the knowledge of organic food were dependent on educational level and occupation profile of consumers. The constraints faced by the consumers in buying organic food found that, 'Not available easily in our regular stores' (67.6 percent) ranked 1st and 'It is very expensive' (40.84 percent) ranked 2nd.

Highlights

- The awareness of organic food was independent of age and income level of consumers.
- The knowledge of organic food was dependent on educational level and occupation profile of consumers.

Keywords: Organic food, descriptive statistics, chi-square test, level of significance, constraint

Introduction

The term "organic" is rooted in "bio" from Greek "bios" meaning life or way of living. "Organic food products" was first coined in the 1940s and refers to food raised, grown and stored and/or processed without the use of synthetically produced chemicals or fertilizers, herbicides, pesticides, fungicides, growth hormones and regulators or genetic modification. (Essoussi & Zahaf, 2008) [2].

Organic farming, evolved on the basic theoretical expositions of Rodale in the United States, Lady Balfour in England and Sir Albert Howard in India in the 1940s, has progressed to cover about 23 million hectares of land all over the world. Howard's magnum opus, 'An Agricultural Testament' has a special significance to us in India as it is based on an analysis of the environment friendly farming practiced here for centuries. The organic food market in the world has grown rapidly in the past decade. International trade in organic foods showed an annual growth rate of about 20-22 percent during this period. Many retail chains and supermarkets in advanced countries are accorded with 'green status' to sell organic foods. The organic food processing industry is considered nature friendly and thus encouraged. The important organic products traded in the international market are dried fruits and nuts, processed fruits and vegetables, cocoa, spices, herbs, oil crops and derived products, sweeteners, dried leguminous products, meat, dairy products, alcoholic beverages, processed foods and fruit preparations. Cotton, cut flowers, animals and pot plants are major non-food products in the world markets.

Scenario and Status of Organic Farming in India: Organic farming is practiced in 190 countries, with 74.9 M ha of land covered organically by 2021, up from 11.0 M ha in 1999. Asian countries contribute 6.33 M ha, accounting for 9.2% of global land-sharing as organic land in 2021. Organic agriculture in India began with only 42,000 ha in 2003-04 and has grown to a total of 2.8 M ha by 2020-21, which accounts for approximately 2% of the country's total net sown area of 142 m ha.

There are 1.8 million organic producers in Asia, with India accounting for highest share. Furthermore, India ranks first in terms of organic producers (1.6 million, compared to only 2.0 lakh in 1999) and fifth in terms of organic farming area. As a result, the area under organic farming in India has increased by 194% in the last ten years. Oilseed crops account for 1.4 lakh ha of the 2.8 M ha area of organic agricultural land, accounting for 0.5% of total organic land coverage (Naik, Umesh *et al*, 2022) [6].

Objectives

1. To work out whether awareness of organic food is independent of age, education qualification, occupation and income of the respondents.
2. To study consumer behavior towards organic food.
3. To identify the constraints faced by the consumer in buying organic food.

Hypothesis

The awareness of organic food is independent of age, education qualification, occupation and income of the respondents.

Limitations of study

- The study was conducted in Nagpur district only.

- The research is based on behavior of consumers towards organic food s may change in future.

Materials and Methods

In this study the research is analyzing the consumer’s awareness and satisfaction towards organic food products in Nagpur district. 100 respondents for this study were selected. Primary data were collected by personal interview method in a pre-designed questionnaire based on the random sampling method. The information regarding age, gender, education, occupation, income, awareness towards organic products, constraints faced by consumers, etc. were collected.

Statistical Analysis

The analysis of data was done keeping in view the objectives of the study, with the help of percentage analysis as well as statistical methods like chi-square analysis were used. The collected data of respondents were analyzed in the three main parts, namely A, B and C as follows:

A: Socio-economic profile of consumers and their knowledge of organic food

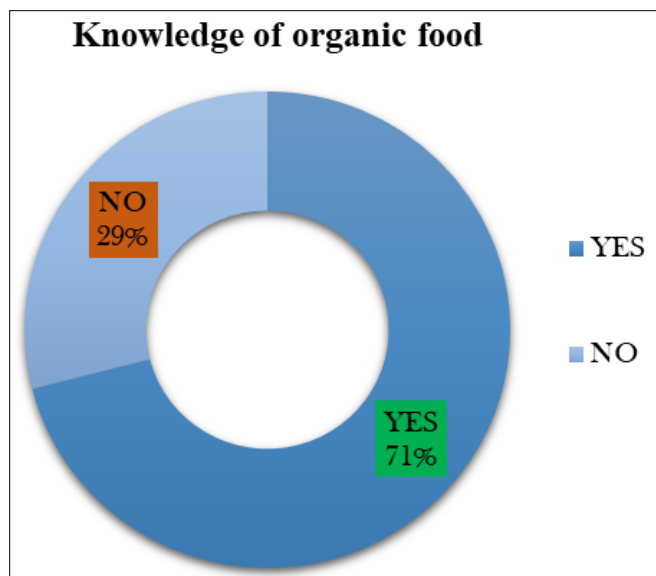


Fig 1: Knowledge of organic food

As shown in Figure 1, wide majority 71.00 percent consumers were found to be knowing about ‘organic food’ and only 29.00 percent were found not to be knowing existence of organic food. When Socio-economic profile of 100 consumers was analyzed following facts were located:

Table 1: Distribution of respondents based on gender

Sr. No.	Gender	No. of respondents
1	Female	60
2	Male	40
Total	-	100

Source: Primary Data

The Table 1 showed that out of the total respondents taken for the study, 60 percent of the respondents are female and 40 percent of the respondents are male. Majority (60 percent) of the respondents were female.

Table 2: Age-wise distribution of consumers

Age-group	20-30	30-40	40-50	50-60	60+	TOTAL
No. of Consumers	33	24	23	15	05	100
No. of consumers who know	25	18	16	09	03	71
% of consumers who know	75.76	75.00	69.57	60.00	60.00	71.00

Source: Primary Data

As seen in the table above, across the different age groups there is fairly high percentage of consumers who had knowledge of organic food. It also revealed that most of the respondents who have the knowledge of organic food were in the age group 20-40 years.

Chi-Square Analysis

Yates’ chi-square value	Yates’ P-Value
0.648	0.9576

The chi-square statistic is 0.648. The p-value is 0.9576. The result is *not* significant.

Table 3: Education profile of consumers

Educational Status	Secondary & below secondary class	Higher secondary class	UG	PG	PhD	Total
No. of consumers	12	13	32	23	20	100
No. of consumers who know	02	11	21	20	17	71
% of consumers who know	16.67	84.62	65.63	86.96	85.00	71.00

Source: Primary Data

As shown in the table, direct relationship was located in level of education and knowledge of organic food. Though difference was not too large, as can be seen in table 3, comparatively a smaller number of consumers with lower educational level were found to have less knowledge of organic food and vice versa.

Chi-Square Analysis

Yates' chi-square value	Yates' P-Value
18.902	0.00082

The chi-square statistic is 18.902. The *p*-value is 0.00082. The result is significant.

Table 4: Occupational properties of consumers

Occupation	Student	Service	Business	Housewife	Farmer	Labour	Total
No. of consumers	16	42	18	9	8	7	100
No. of consumers who know	15	34	11	5	5	1	71
% of consumers who know	93.75	80.95	61.11	55.56	62.50	14.28	71.00

Source: Primary Data

Likewise of age-wise distribution, occupation-wise distribution of consumers was found equitable in the table 4. Consumers with lower education seemed to have less knowledge of organic food. It means occupation of a person and knowledge of organic food has positive relationship.

Chi-Square Analysis

Yates' chi-square value	Yates' P-Value
13.802	0.01692

The chi-square statistic is 13.802. The *p*-value is 0.01692. The result is significant.

Table 5: Income wise distribution of consumers

Income-class	<10,000	10-25,000	25,000-50,000	50,000-75,000	75,000-1 Lakh	Above 1 Lakhs	TOTAL
No. of consumers	6	15	17	16	19	27	100
No. of consumers who know	2	10	12	14	11	22	71
% of consumers who know	33.33	66.67	70.59	87.50	57.89	81.48	71.00

Source: Primary Data

After studying socio-economic profile of consumers, 'level of income', none other variables seemed to have impact on knowledge of organic food. It means knowledge of organic food is independent of income level.

Chi-Square Analysis

Yates' chi-square value	Yates' P-Value
5.946	0.3115

The chi-square statistic is 5.946. The *p*-value is 0.3115. The result is *not* significant at.

B: Buying behavior of consumers having knowledge of organic food

On the basis of earlier observation that 71.00 percent consumers from Nagpur districts were found to be knowing of organic food, it was perceived that almost 71.00 percent must also be consuming it or buying organic food. However, this assumption too was proven invalid. As shown in the pie chart diagram 1.2 and table 1.5 amongst those who were aware of organic food, 47.00 percent were found to be not buying at all, 32.00 percent were buying it occasionally and only 21.00 percent were found to be buying only 'organic' Food.

Table 6: Awareness & buying behavior of organic food

Particulars	No. of consumers
Aware but do not buy	33
Only buy organic	15
Buy sometimes	23
Do not know	29
Total	100

Source: Primary Data

What data indicated was unexpected. Despite of knowing about the concept of organic food, consumers were not buying it regularly.

The possible reason for such situation could be that people were just aware that along with the regular food that they buy, something called 'organic food' too is available in market and they are indifferent to it.

Currently, In Nagpur district, organic movement is gaining momentum. So, related news reach to masses through mediums like radio, TV, newspaper, etc. Thus, probability of knowing about 'organic food', as in, hearing about the concept 'organic food' is high. Just hearing the concept is not sufficient to alter buying behavior of people. At the same, consumers need to know from where to buy and how to recognized organic food or differentiate organic food from conventional food.

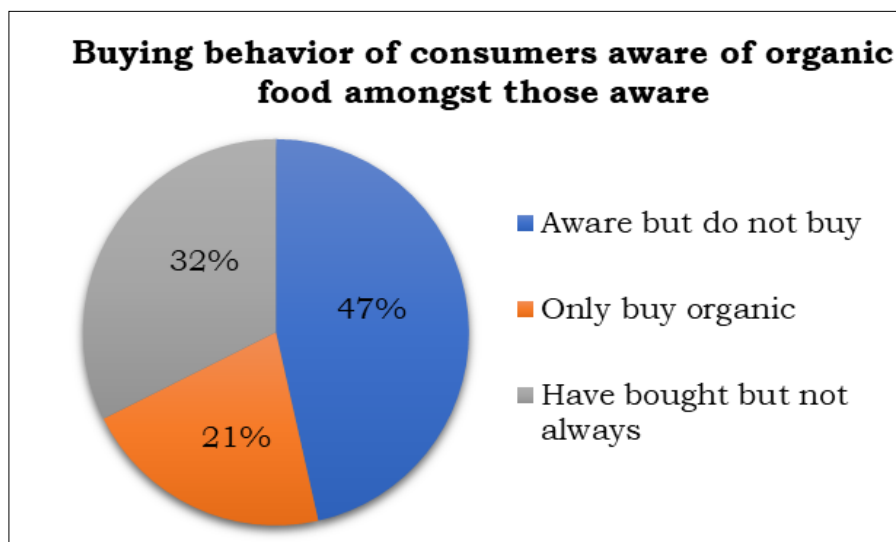


Fig 2: Buying behavior of consumers aware of organic food

Since out of 71.00 percent of consumer who 'knew' about organic food, only 21.00 percent claimed to be buying' only organic food. After reviewing existing literature and, keeping in view the small number of consumers buying organic food regularly, it was assumed that lack of awareness about 'the significance of organic food for healthier life' along with awareness of how to distinguish organic food with conventional & where to buy it, could be a strong reason for less demand for organic food.

The awareness of people was tested on the basis of number of people who knew

- Benefits of consuming organic food
- Problems of conventional food that they are consuming

- currently
- How to differentiate organic food from conventional food (the 'norms' applied)
- From where to buy organic food called as 'sources' of organic food

Comparative Analysis of awareness of people claiming to buy all organic food and people who buy occasionally

Perceived benefits of organic food were compared between two groups. All four benefits of the list were strong enough and any one benefit chosen by the consumer is enough to prove their awareness. From that point both categories of consumers were equally aware of benefits of organic food but a large group still consumed it occasionally.

Table 7: Perceived benefits of organic food

Benefits	Do not carry pesticides	Without chemical fertilizers	Organic products are healthy	Organic farming is good for environment
Only organic	13(86.67)	15(100.00)	14(93.33)	15(100.00)
Occasionally Organic	22(57.89)	21(91.30)	23(100.00)	22(95.65)

Source: Primary Data

From the Table above, perceived benefits of organic food were absence of pesticides, chemical free fertilizers, healthy and good

for environment.

Table 8: Sources used for buying organic food

Buy From	Organic food store	Rationing shop	Super market	Grocery Store	Farm
Only Organic	10(66.67)	02(13.33)	02(13.33)	04(26.67)	06(40.00)
Occasionally Organic	10(43.48)	01(4.35)	06(26.09)	04(17.39)	17(73.91)
Total	20(52.63)	03(7.89)	08(21.05)	08(21.05)	23(60.52)

a) **Organic food stores:** Organic food stores are stores that sell organic food by default and Thus, are 100.00 percent authentic stores. In this case, we need not check their organic food reorganization norms. Thus, we can claim that 66.67 percent of consumers from 'only organic group', 43.48 percent 'occasionally organic group' Thus, in all 52.63 percent are fully aware of organic food, and its sources.

b) **Rationing Shops:** Rationing Shops are the 'fair price shops' under government public distribution system where subsidized food is made available for low income group households. In these shops food procured from farmers by government agencies is sold. There is no scheme in Maharashtra. Thus, option of buying from 'rationing shop'

is certainly not authentic. It involves two possibilities-

- The consumer may have confused 'rationing shop' as grocery store
 - The consumer is not aware of how to recognize organic since in Maharashtra, no rationing shop sells organic food. However, negligible number of consumers, 13.33 percent of 'only organic', 4.33 percent 'occasionally organic', and only approximate 7.89 percent in all fall in this category.
- c) **Supermarket:** Supermarket is a large self-service shop that sells food s and household goods. Super market has conventional, organic food packet as well food packets with a title of 'natural' food. Consumers who bought organic food from super market were from the group of 'only

organic' were 13.33 percent, 'occasionally organic' were 26.09 percent and all consumers taken together were 21.05 percent.

- d) **Grocery Store:** Grocery Store is a small retail store that primarily sells food items. Grocery stores too keep few organic food products and 26.67 percent 'only organic', 17.39 percent of occasionally organic group and 21.05

percent overall claimed to be buying organic food from grocery store.

- e) **Farm:** However, 40.00 percent of only organic group, 73.91 percent and occasionally organic group 60.52 percent overall consumers claimed to be buying organic food from 'farm'.

Table 9: Reasons for not buying

Reason	Consumers not buying	%	Consumer occasionally buying	%
Non-availability in regular store	39	62.90	15	65.22
Limited stocks	15	24.19	7	30.44
Limited choice	18	29.03	6	26.09

Source: Primary Data

As shown in the table above, 62.90 percent were not buying organic food since the food is not easily available in the local stores, 29.03 percent have faced problem of limited choice, whereas 24.19 percent had faced problem of limited stock. In case of consumer who claimed to have bought organic food

occasionally, 65.22 percent consumers were occasionally buying organic food since the food is not easily available in the local stores, 26.09 percent have faced problem of limited choice, whereas 30.44 percent had faced problem of no stocks.

Table 10: Marketing norms of organic food from consumer's perception

Sr. No.	Variables	Frequency	Percentage
1	People aware of concept of organic food	71/100	71.00
2	People aware of benefits of organic food	27	38.03
3	Medium that gave knowledge of organic food	Out of 71	
	T.V	32	45.07
	Radio	15	21.12
	Internet	31	43.67
	In store	17	23.94
	Newspaper	29	40.84
	Magazine	15	21.12
	Friends	22	30.98
	Not sure	8	11.26

Source: Primary Data

Awareness of organic food: Majority people are well aware of concept of organic food as well as its benefit. High prices can be the hurdles which suppliers can remove either by having direct marketing system where producers sell directly to consumers or cost cutting through large scale production. Consumers want organic food provided it is not too expensive, and they should have easily to access the organic food.

C: Constraints faced by the consumer in buying organic food

The respondents who consume organic foods were enquired regarding the problems they were encountering in buying organic food. The respondents have various problems like, do not know for where to buy, not available easily in our regular stores, etc., as given in table 11.

Table 11: Constraints faced by the consumer in buying organic food

Sr. No.	Constraints	No. of respondents (Out of 71)	Percentage to total aware respondents	Rank
1	Do not know for where to buy	9	12.67	V
2	Not available easily in our regular stores	48	67.60	I
3	It is very expensive	29	40.84	II
4	Often stocks are limited	10	14.08	IV
5	Risk of getting cheated	23	32.39	III
6	Limited Choice	8	11.26	VI

Source: Primary Data

It is revealed from the above table that, out of 71 consumers, 48 (67.6 percent) consumers faced the problem of non-availability of organic food easily in their regular stores which was the major constraint. Second highest was the problem that 'It is very expensive' at 40.84 percent.

Conclusions

1. Wide majority i.e. 71 percent consumers were aware of 'organic food' of whom 60 percent were female.
2. According to chi-square test, the null hypothesis was

accepted at 0.05 level of significance (hereafter I.o.s.) and it can be concluded that the awareness of organic food was independent of the age of the respondents.

3. The chi-square test for educational level of consumers revealed that the knowledge of the organic food was dependent on education level of respondents (at 0.05 I.o.s.) i.e. a smaller number of consumers with lower educational level were found to have less knowledge of organic food and vice versa.
4. The chi-square test for occupation profile of consumers

revealed that the knowledge of the organic food was dependent on occupation of respondents (at 0.05 l.o.s.) that means occupation of a person and knowledge of organic food has positive relationship.

5. Income level of the consumer and the awareness of organic food is independent of each other at 5 percent l.o.s. as resulted by chi-square test.
6. In the survey we found that, amongst those who were aware of organic food, 47.00 percent were found to be not buying at all, 32.00 percent were buying it occasionally and only 21.00 percent were found to be buying only 'organic' Food.
7. Consumers who consume 'only organic' foods buy it mostly from 'Organic food stores' at around 67 percent and next highest source was 'farm' i.e. 40 percent.
8. 63.00 percent were not buying organic food since the food is not easily available in the local stores, 29.00 percent have faced problem of less choice, whereas, 24.00 percent had faced problem of limited stock.
9. Perceived benefits of organic food were compared between two groups (Only organic & Occasionally Organic). It was found that, both categories of consumers were equally aware of benefits of organic food but a large group still consumed it occasionally.
10. As per the study consumers' perceived benefits of organic food were absence of pesticides, chemical free fertilizers, healthy and good for environment.
11. The constraints faced by respondents in buying organic food found that, 'Not available easily in our regular stores' (67.6 percent) ranked 1st and 'It is very expensive' (40.84 percent) ranked 2nd.

Suggestions

1. The small number of consumers buying organic food regularly, it was assumed that lack of awareness about 'the significance of organic food for healthier life' along with awareness of how to distinguish organic food with conventional & where to buy it, could be a strong reason for less demand for organic food.
2. Consumers want organic food provided it is not too expensive, and they should have easily to access the organic food.
3. As the prices of organic products is high as compared to conventional food available in market therefore the consumers' expectation is that the price of organic foods should be reasonable.
4. According to our recent survey, the organic food is getting popularity among consumers. So, if more number of shops are opened it will be convenient for consumers to buy organic food. Hence, number of organic food outlet should be increased.

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