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Consumers' Buying Behaviour towards Organic Food Products in Tamil Nadu

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Abstract

The study conducted in Tirupur district of Tamil Nadu state has investigated the consumers' buying behaviour towards organic food products based on the data collected from 240 respondents (120 organic food consumers and 120 non-organic food consumers). The study has used chi-square test and multivariate analysis of variance (MANOVA) for analysis. Besides looking into the awareness level, the study has found the association between demographic characters and awareness level about organic food products. The study has revealed that factors like gender, family income, education and occupational status differentiate consumers of organic and non-organic food products. Besides, psychological factors such as attitude, perception, belief and intention have shown positive results for the organic food consumers of Tirupur district.

Key words: Purchase choice, organic food, premium price, psychological factors, Tamil Nadu

JEL Classification: D10, J10, M30, Q18

Introduction

The increasing demand for organic food products in various parts of the world from early-2000s is driven by the rising consumers' consciousness about quality and safety of food (Vindigni *et al*., 2002). However, the fact shows that organic food consumption is still low in proportion, compared to non-organic food (Gupta and Ogden, 2009). Such a situation indicates the importance of study on consumers' behaviour, particularly the consumers' attitude towards buying organic food. Also, the study on the attitude and intention model in organic food consumption has not shown consistent results (Chen, 2009). The organic food product price variable affects negatively the consumers' attitude towards organic food (Magnusson *et al*. 2001; Fotopoulos and Krystallis, 2002). Some studies have shown that consumers are tolerant to the premium price of organic food (Davis *et al.,* 1995). This study has examined the effect of type of buyers on consumers' attitude, perception, intention and belief to purchase organic food products.

According to Lockie *et al*. (2004), age and income are important factors to motivate the purchasing willingness of organic food. Onyango *et al*. (2008) have investigated the consumers' opinions about the effects of specific food attributes and personal traits on organic food. They have shown that the regularity in purchase of organic products is a critical element to determine the identity such as natural feature of food, vegetarian issues, and place of manufacture. Deliana (2012) has concluded that organic products are perceived as the products which are free from synthetic pesticides, synthetic fertilizers and chemicals, are environment friendly and are more expensive than normal products. Winter and Davis (2006) have concluded based on the

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results of the American organic food retailer named "Whole Foods Market", that the important reasons to prefer organic food were avoidance of harmful effects of agricultural chemicals, and consumption of genetically modified food products coupled with having fresh and healthy eating. Olivas and Bernabeu (2012) have concluded that the organic food consumption can be considered the effect of an interaction between eating a healthy diet, showing respect for environment and the individuals' sociability. They have also shown the difference between attitudes of men and women consumers toward organic food in Spain.

Aaker (1997) regarded brand awareness to be a remarkably durable and sustainable asset. It could provide a sense of familiarity (especially in low-involvement products such as soaps), a sense of presence or commitment and substance and was very important to recall at the time of purchasing process. Apart from the conventional mass media, there were other effective means of creating awareness, viz. event promotions, publicity, sampling and other attention-getting approaches. Bhaskaran (2006) has reported that the rise in environmental awareness has a thoughtful effect on consumers' behaviour, with green product market intensifying at a remarkable rate.

According to Michaelidou (2008), the organic food is perceived by its composition (no harmful and modified ingredients are used), method of production (food is grown only under natural conditions with minimal impact on the environment), represented values (safe and healthy) and even social class (upper and medium). Mohammed *et al.* (2012) have identified the determinants of consumption of organic products in Egypt. According to the results, the determinants of consumption of organic food are ranked as follows: health problems, safety of organic foods and the belief that organic foods contribute to the ecological system.

Objectives

The objective of this study was to identify the influential factors on consumers' buying behaviour towards organic food in a rapidly growing market of Tirupur district. The specific objectives of the study included:

- Study awareness and knowledge levels of consumers towards organic food products,
- Study consumers' buying behaviour towards organic food products,
- Analyse the psychological factors influencing consumer buying behaviour towards organic food products, and
- Provide suggestions to enhance the purchase of organic products among the consumers of Tirupur district

Data and Methodology

The study was conducted in Tirupur district because of growing concern of organic retail outlets in this district. The study is based on both primary and secondary data. The primary data were collected by personal interview method using a well-structured interview schedule. Details on demographic characteristics, awareness and knowledge, perception, attitude, belief and intention of the sample respondents towards organic food products were included in the interview schedule. The secondary data on location, demography and other details about study area were collected from the government websites, government publications, other publications and annual reports. For the study, 240 consumers (120 organic food consumers and 120 non-organic food consumers) of Tirupur district were selected by random sampling method in the year 2014.

The analytical tools used in the study were percentage analysis, multi-dimensional scaling techniques, chi-square test and rank based quotient. In multi-dimensional scaling, the respondents were asked to indicate on a five-point scale whether they strongly agreed (5 points), agreed (4), and were neutral (3), disagreed (2) or strongly disagreed (1) with the statements about various aspects of organic food products.

Chi-square Test

The chi-square (χ^2) test was used to find the association between demographic status and awareness level of respondents towards organic food products using formula (1):

$$\chi^2 = \sum \frac{(O-E)^2}{E}$$

where, O is the observed frequency, and E is the expected frequency.

$$\text{Expected frequency of any cell} = \frac{\text{CRT} \times \text{CCT}}{\text{Grand Total}}$$

where, CRT is the corresponding row total, and CCT is the corresponding column total.

The χ^2 distribution with (r-1) (c-1) degrees of freedom, where 'c' was the number of columns and 'r' was number of rows. The test of significance was carried out at five percent level of probability. If the calculated value was greater than the table value, then there was a significant association between the attributes, and vice-versa.

Multivariate Analysis of Variance (MANOVA)

The multivariate analysis of variance (MANOVA) was used to test the hypothesis. Instead of a univariate F value, we would obtain a multivariate F value (Wilks' λ) based on a comparison of the error variance / covariance matrix and the effect variance / covariance matrix. Although we only mentioned Wilks' λ here, there were other statistics that might be used, including Hotelling's trace and Pillai's criterion. The 'covariance' here was included because the two measures were probably correlated and we must take this correlation into account while performing the significant test.

Testing the multiple dependent variables was accomplished by creating new dependent variables that maximize group differences. These artificial dependent variables were linear combinations of the measured dependent variables.

If the overall multivariate test is significant, then the respective effect is significant. In fact, after obtaining a significant multivariate test for a particular main effect or interaction, customarily one would examine the univariate F tests for each variable to interpret the respective effect. In other words, one would identify the specific dependent variables that contribute to the significant overall effect.

Partial eta squared = Effect size; According to Vacha-Haase and Thompson (2004), if the effect size was greater than 0.14, then the variables had a strong relationship. The effect size indicated that the percentage of variance of dependent variables was accounted for by the difference between the two groups and it confirmed that there was a strong relationship between the independent factors and dependent factors.

Rank Based Quotient (RBQ)

This technique was used to delineate the factors influencing the consumers for buying organic food products. The respondents were asked to assign ranks to the factors like health, taste, cost, environment-friendly, accessibility, etc. The ranks given by the respondents were converted into RBQ by using formula (2):

$$RBQ = [\Sigma\, Fi\, (n + 1 - i)/N \times n] \times 100$$

where, F_i is the frequency of consumers for the i^{th} rank of the factor, N is the number of consumers contacted for factor identification, and 'n' is the maximum number of ranks given for various factors.

The factor with highest RBQ score was considered as the most important factor influencing the consumers' buying behaviour towards organic food products.

Results and Discussion

Table 1a reveals that in case of both organic and non-organic food consumers, the majority of organic food consuming respondents believed that organic food products contain no pesticides while most of the non-organic food consuming respondents believed that organic food commodities were natural products (Table 1b).

Table 1a. Awareness level of respondents about organic food products in Tirupur district

Awareness level	Organic (n=120)		Non-organic (n=120)	
	No. of respondents	Percentage (%)	No. of respondents	Percentage (%)
High	0	0.00	18	15.00
Medium	16	13.30	66	55.00
Low	104	86.70	36	30.00

Source: Primary data

Table 1b. Characteristics of organic food products

Characteristics	Organic (n=120)		Non-organic (n=120)	
	No. of respondents	Percentage (%)	No. of respondents	Percentage (%)
No pesticide	64	53.30	14	11.70
Something natural	56	46.70	106	88.30

Source: Primary data

Table 1c. Association between awareness level and demographic characteristics of respondents

Variable 1	Variable 2	Chi-square value	Degrees of freedom	p-value
Awareness	Gender	62.02	1	.000**
Awareness	Age	103.03	3	.000**
Awareness	Residence	1.50	1	.000**
Awareness	Education	153.65	5	.000**
Awareness	Occupation	2.01	4	.000**
Awareness	Annual Income	228.27	3	.000**

Source: Primary data; **Significant at 0.01% level

The association between demographic characteristics (gender, age, education, occupation and annual income) and awareness level was interpreted through chi-square analysis using SPSS and the results are presented in the Table 1c.

The chi-square value calculated for each variable included under the demographic characteristics was focused as follows: gender, 62.02; age, 103.03; residence, 1.15; education,153.65; occupation, 2.011; and annual income, 228.27. The p value was .000 for all the demographic characteristics which was less than the level of significance (.001). Therefore, the null hypothesis was rejected and it was concluded that there was a statistically significant association between awareness level and demographic characteristics such as gender, age, residence, education, occupation and annual income of the respondents.

Table 2 revels that the main reason behind buying organic food product was health consciousness. Though the organic food product was regarded healthy, some respondents did not buy them because of high premium price and lack of trust on their quality.

Table 2. Reasons for purchase or non-purchase of organic food products

Attributes	Organic food (n=120)		Non-organic food (n=120)	
	RBQ score	Rank	RBQ score	Rank
Taste	37.08	IV	09.07	VIII
Quality	37.85	III	21.45	V
Freshness	38.83	II	26.96	IV
Availability	10.93	VII	40.83	III
Health	45.72	I	20.98	VI
Variety	08.79	VIII	14.52	VII
Trust	29.10	V	43.84	II
Price	20.50	VI	45.20	I

Source: Primary data

Table 3. Level of perception, attitude, belief and intention towards organic food

Range	Level	Organic food (n=120)		Non-organic food (n=120)	
		No. of respondents	Percentage (%)	No. of respondents	Percentage (%)
		Level of perception			
≤ 3.51	Low	0	0.0	65	54.2
3.52 – 4.10	Medium	89	74.2	39	32.5
≥ 4.11	High	31	25.8	16	13.3
		Level of attitude			
≤ 2.54	Low	0	0.0	65	54.2
2.55 – 3.53	Medium	78	65.0	55	45.8
≥ 3.54	High	42	35.0	0	0.0
		Level of belief			
≤ 2.75	Low	0	0.0	100	83.3
2.76 – 3.34	Medium	0	0.0	20	16.7
≥ 3.35	High	120	100.0	0	0.0
		Level of intention			
≤ 2.75	Low	0	0.0	0	0.0
2.76 – 3.64	Medium	6	5.0	104	86.7
≥ 3.65	High	114	95.0	16	13.3

Source: Primary data

The levels of perception, attitude, belief and intention about organic food products of organic and non-organic food consumers are presented in Table 3. A perusal of Table 3 reveals that the perception about organic food products was better among organic than non-organic food consumers. The organic users had a positive attitude towards organic food products, whereas the non-organic users had a negative attitude towards such products. Even though the overall mean values of belief towards organic food products were higher for organic users, the differences in the mean values of belief between organic and non-organic users were insignificant. The intention to buy organic food products was more for organic users than non-organic users.

The analysis of one-way multivariate analysis of variance (MANOVA-) (Table 4) showed that the type of buyers had an effect on the combined psychological factors influencing the buying behaviour towards organic food products. The Wilks' lambda (0.208) measures the per cent of variance in the type of buyers that is not explained by the differences in level of the psychological factors influencing buying behaviour towards organic food products. The effect size (0.792) was found to be very strong and indicated that 79.20 per cent of the variance in the type of buyers could be accounted for by the differences between psychological factors influencing buying behaviour. The results further showed that there was a very strong power (1.000) which had predicted the strength of the relationship between the psychological factors and the type of buyers. The results have further shown that the F-value was 2.233 and the p-value was 0.000 which was significant at one per cent level.

Table 4. Univariate analysis on dependent psychological factors

Source	Psychological factors	F-value	p-value	Eta	Power
Type ofbuyer	Perception	133.588	.000**	.360	1.000
	Attitude	265.638	.000**	.527	1.000
	Belief	2.590	.000**	.011	0.361
	Intention	125.997	.000**	.346	1.000

Source: Primary data; **Significant at 0.01 per cent level

Out of four psychological factors (perception, attitude, belief and purchase intention), the type of buyers had a major effect on three factors, namely perception, attitude and purchase intention at 1 per cent level of significance, but belief was found to be insignificant.

Conclusions

The study has revealed that consumers' behaviour plays a major role in organic food products segment. The marketeers of organic foods need to be innovative and dynamic to meet the changing purchase behaviour for organic food products among the urban residents. The majority of organic food consuming respondents believed that organic food products contained no pesticides, while most of the non-organic food consuming respondents believed that organic food commodities were natural products. The main reason behind buying an organic food product was health consciousness. Though the organic food product was regarded healthy, the lack of trust on the originality of organic food product was another reason for not buying the organic food product in the study area. Hence, the firm producing and selling organic food products must find ways to create trust among the consumers to improve their purchase intention. It was also found that the organic food consumers had high influence of psychological factors such as perception, attitude and purchase intention towards buying organic food products. The consumer belief in organic food product was insignificant among both organic and non-organic food consumers. Hence, steps must be taken to create trust about organic food products among the consumers of Tirupur district.

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