

Exploring the Factors Impacting the Purchase Intention of Consumers for Organic Foods

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ABSTRACT

Interest in organic food continues to increase throughout the world in response to concerns about intensive agricultural practices and their potential effects on human health and the environment. The demand for organic foods has significantly increased due to increasing awareness on health, food safety and environmental concerns. This paper made a humble attempt in understanding the consumer purchase intention for organic foods in Coimbatore district of Tamil Nadu state. Major retailers in the district were identified and five retailers were randomly chosen for the study. Thirty consumers visiting each retail shop were randomly chosen and thus the total sample size is 150. The collected data was analyzed by using Garret ranking technique, chi-square and factor analysis. The result concluded that, vegetables were the most preferred category of products of organic origin followed by milk and dairy products. The cumulative variance accounted by nine factors extracted from factor analysis was 67.99 per cent while food safety and supportive factors were majorly considered and motivational and influential factors were least preferred by sample respondents during their purchase of organic foods.

Key words: *Food safety, Influential factor, Motivational factor, Organic foods, Purchase intention, Supportive factor*

Organic foods industry is one of the fastest growing sectors of the food industry in the last decade. Organic food includes food products obtained from a farming system which avoids using synthetic fertilizers, pesticides, hormones, genetically modified organisms and irradiation (Gan *et al.* 2008 and Rezaei *et al.* 2012). The purpose of organic farming is to enhance the natural biological cycles and to meet minimum animal welfare standards (Hughner *et al.* 2007). Organic foods are becoming very popular now-a-days due to various benefits largely the health concern as compared to the non-organic ones. Environmentally preferable products are sometimes more expensive to purchase than other alternative products (Tsarkiridou *et al.* 2008 and Ozguven 2012). Green consumers have been shown to be willing to pay a higher price for environmentally friendly products has huge opportunity for companies as well as governments looking to make eco-friendly policy changes (Wanninayake and Randiwela 2008). Thus the increasing numbers of consumers who prefer to buy eco-friendly products are creating opportunity for businesses that are using eco-friendly or environmentally friendly as a component of their value proposition (Kumar *et al.* 2012). Businesses that offer products which are manufactured and designed with an environmental marketing mix have a long term competitive advantage. A better understanding of consumer's buying behaviour will allow businesses to acquire more market-applicable approach to sustain in the competitive market. Organic product knowledge is

an important factor because it represents the only instrument that consumers have to differentiate the attributes of organic products from those of conventional ones and to form positive attitudes and quality perceptions toward these products. (Michaelidou and Hassan 2008).

From the background delineated above, the present study attempts to understand the purchase intention of consumers for organic foods with the following objectives.

1. To identify the most preferred category of products of organic origin.
2. To identify the factors influencing the purchase intention to buy organic foods, and
3. To study the relationship between demographic factors and factors influencing purchase intention.

MATERIAL AND METHODS

The study was undertaken in Coimbatore district of Tamil Nadu state. The list of major retailers in the district was identified and five retailers were randomly chosen for the study. Thirty consumers visiting each retail shop were randomly selected and interviewed. Thus the total sample size of the study was 150. The data collected was analyzed using Garrett ranking, chi-square test and factor analysis. SPSS software was employed to analyze the data and the survey work undertaken pertains to the period February to April 2017.

Garrett's Ranking Technique

Respondents have been asked to assign the rank for all variables listed and the outcomes of such ranking have been converted into score value with the help of the following formula:

$$\text{Per cent position} = \frac{100 (R_{ij} - 0.5)}{N_j}$$

R_{ij} = Rank given for the i th variable by j th respondents

N_j = Number of variables ranked by j th respondents

Chi-Square test

The chi-square technique gives the probability that the observed frequencies could have been sampled from a population with the given expected values.

$$\chi^2 = \sum_{i=1}^k \frac{(O_i - E_i)^2}{E_i}$$

D.F: K-1

O_i : Observed number of cases in the i th category

K : Number of categories

E_i : Expected number of cases in the i th category when *Ho is true*

Factor Analysis

The objective of the factor analysis is to represent each of the variables as linear combination of the smaller set factors, this can be expressed as

$$X_1 = \lambda_{11} F_1 + \lambda_{12} F_2 + \dots + \lambda_{1m} F_m + e_1$$

$$\dots \dots \dots \dots \dots$$

$$X_n = \lambda_{n1} F_1 + \lambda_{n2} F_2 + \dots + \lambda_{nm} F_m + e_n$$

Where,

X_1 to X_n = Standardized scores

F_1 - F_n = Standardized factor scores

λ_{11} - λ_{mn} = Factor loadings

e_1 - e_n = Error variance

RESULTS AND DISCUSSION

The data collected was analyzed using Garrett ranking and the results presented in Table 1 above inferred that the vegetables were the most preferred category of products of organic origin (Pearson *et al.* 2010 and Chinnici *et al.* 2002) with a mean score of (70.54) followed by milk and dairy products (65.33), cereals (60.74), cooking oils (60.70), pulses (58.50), fruits (57.10), spices and condiments (49.21), eggs (48.44), sugar products (46.31), meat and meat products (39.11), honey (38.88), tea/ coffee (36.48), dry fruits (36.46). Mushroom (32.13) was the least preferred category of products of organic origin. Thus the study inferred that the most preferred category of

organic foods by sample respondents was vegetables followed by milk and dairy products and the least preferred category was mushroom.

Factors Impacting the Purchase Intention of Sample Respondents for Organic Foods Principal components analysis

Using SPSS software principal component analysis was employed for extracting the factors from the underlying 34 variables taken for the study and first nine were extracted based on eigen value (more than one). The result is provided in the Table 2.

It is inferred from Table 2 that first nine components explained 67.99 per cent of the total variance. Factor 1 explains about 17.97 per cent of the variation followed by factor 2 (9.45 per cent), factor 3 (6.92), factor 4(6.7 per cent), factor 5 (6.43 per cent), factor 6(6.05 per cent), factor 7 (5.63 per cent), factor 8(4.58 per cent) and factor 9(4.26 per cent).

Rotated Component Matrix

The rotated factor matrix in Table 3 represents the factor loadings obtained against each variable and each factor extracted. The selection criterion for grouping of variables (Table 4) under nine factors was made such that factor loading for each variable would be highest across row and should be greater than 0.5.

The factor 1 (Food safety factor) explains 17.97 per cent of variation. This factor defines the variables like attributed to stay healthier in long run (0.579), attributed to nutritional attributes (0.708), these foods are healthier than conventional one (0.582), these foods are free from pesticide residues (0.792), these foods are free from food additives (0.843), these foods are free from chemical fertilizers (0.802), these foods are free from heavy metals (0.793), these foods are not involved in genetically modification process (0.560), degree of less harm to the soil (0.596), degree of less harm to water (0.521), these foods are saving resources to next generation (0.560) and influenced by friends/ family/members (0.536). Producing food organically allows wildlife to flourish (0.792), better standards of animal welfare (0.746), helps to reduce our carbon footprint (0.800), helps to sustain the bio diversity (0.644), helps to develop beneficial micro organisms (0.575) have loaded on Factor two (Environmental factor) and its explains about 9.45 per cent of variation . Variables in the Factor two are closely related to Environmental aspects which influenced the purchase intention of consumers for organic foods. Influenced by environmentalist (0.665), Taught in school/college (0.705) and Fashion to consume (0.548) are the three important variables loaded on Factor 3 (Influential factor). It explains the 6.92 % of the variation. Attributed to its pure taste (0.848), Attributed to flavour (0.820)

Table 1. Most Preferred Category of Products of Organic Origin

Products category	Total	Mean score	Rank
Cereals	9111	60.74	3
Pulses	8775	58.5	5
Fruits	8566	57.1	6
Vegetables	10581	70.54	1
Milk and dairy products	9800	65.33	2
Cooking oils	9105	60.7	4
Tea/Coffee	5475	36.48	12
Spices and condiments	7381	49.21	7
Dry fruits	5469	36.46	13
Sugar products	6946	46.31	9
Honey	5832	38.88	11
Mushroom	4819	32.13	14
Meat and Meat products	5866	39.11	10
Eggs	7266	48.44	8

Table 2. Total variance explained

Component/ Factor	Initial Eigen values			Rotation Sums of Squared		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulati ve %
1	7.128	20.965	20.965	6.111	17.974	17.974
2	4.034	11.864	32.829	3.211	9.444	27.418
3	2.809	8.263	41.091	2.353	6.922	34.340
4	2.173	6.392	47.484	2.278	6.700	41.040
5	1.842	5.417	52.900	2.187	6.433	47.473
6	1.471	4.327	57.227	2.056	6.046	53.519
7	1.339	3.937	61.164	1.917	5.637	59.156
8	1.17	3.441	64.605	1.557	4.578	63.734
9	1.151	3.386	67.991	1.447	4.257	67.991

and Better quality than conventional one (0.519) are the variables loaded on the Factor 4 (Cooking quality factors). It explains the 6.70 % of the variation. The Factor 5 (Motivational factor) explains the significance of influenced by reference group or peer groups or social interaction (0.511), Influenced by advertisements (0.804) and influenced from mass media (0.825). This motivational factor explains the 6.43 % of the variation. The Factor 6 (Hygiene factor) explains the 6.05% of the variation. It helps to free from diseases (0.818) and it helps to free from skin allergies (0.789) were the variables loaded on Factor 6. Long shelf life (0.804) and Good appearance (0.751) were the variables loaded on Factor 7 (Keeping quality factors). Keeping quality factor explains the 5.64 % of the variation. Degree of information on the labels are truthful/reliable (0.727) was the variable loaded on Factor 8 (Reliability factor) that explains the 4.58 % of the variation. Influenced by store people (0.693) was the variable loaded on Factor 9 (Supportive factor) which explains the 4.26 % of the variance.

Factors Impacting the Purchase Intention of sample respondents

The scores of group of variables under each factor were summed up and the mean of each factor was calculated and the results obtained in Table 5 inferred that the highest mean score (4.51) was obtained for food safety factor followed by supportive factor (4.23). Food safety factor was majorly considered by sample respondents in purchasing organic foods and the impact of motivational factors and influential factors on consumers during their purchase of organic foods was less.

Relationship between Demographic Factors and Factors Influencing the Purchase Intention

It is inferred from Table 6 that impact of age on food safety and environmental factors were significant at 1 per cent level and 10 per cent level and hence variables of this factor were majorly considered by respondents of different age groups.

Table 3. Rotated Component Matrix

Variables	Component/ Factor								
	1	2	3	4	5	6	7	8	9
Attributed to its pure taste	0.042	0.126	0.009	0.848	-0.136	0.129	0.042	0.15	0.142
Attributed to flavour	0.009	-0.185	-0.02	0.82	0.083	0.087	0.282	-0.038	0.023
Better quality than conventional one	0.21	0.184	-0.144	0.519	0.113	0.239	0.117	0.381	0.077
Attributed to freshness	0.042	0.298	0.057	0.112	-0.084	0.306	0.307	-0.374	-0.403
Long shelf life	0.127	0.094	0.076	0.125	-0.06	0.107	0.804	0.013	-0.161
Good appearance	0.121	0.142	-0.039	0.193	-0.03	0.073	0.751	-0.051	0.144
Attributed to stay healthier in long run	0.579	-0.013	-0.384	0.066	0.112	0.152	0.273	0.148	0.098
Attributed to nutritional attributes	0.708	-0.085	-0.1	0.078	-0.013	-0.074	0.171	-0.148	0.08
It helps to free from diseases	-0.082	0.277	-0.032	0.175	-0.025	0.818	0.106	0.037	-0.119
It helps to free from skin allergies	0.06	0.239	-0.063	0.142	-0.077	0.789	0.085	-0.133	-0.138
These foods are healthier than conventional one	0.582	0.067	-0.255	0.017	0.025	0.35	0.192	0.062	0.174
These foods are free from pesticide residues	0.792	0.05	-0.103	-0.073	-0.006	0.128	0.002	0.15	0.01
These foods are free from food additives	0.843	0.037	0.026	0.023	-0.003	-0.078	0.161	0.098	0.196
These foods are free from chemical fertilizers	0.802	-0.066	0.023	0.028	-0.124	-0.083	0.07	0.203	0.039
These foods are free from heavy metals	0.793	0.099	-0.022	-0.048	-0.095	0.044	-0.038	0.164	-0.137
Organic certification quality	0.191	0.176	0.22	0.333	-0.292	0.004	-0.391	0.184	-0.403
Degree of information on the labels are truthful/reliable	0.216	0.152	-0.052	0.284	-0.021	-0.099	-0.088	0.727	-0.046
These foods are not involved in genetically modification process	0.56	0.114	-0.386	0.217	0.152	-0.143	0.046	0.133	-0.108
Degree of less harm to the soil	0.596	0.168	-0.391	0.243	0.06	-0.396	0.048	-0.279	-0.125
Degree of less harm to water	0.521	0.229	-0.481	0.219	0.167	-0.263	-0.047	-0.332	-0.025
These foods are saving resources to next generation	0.767	0.14	0.019	0.074	-0.137	0.022	-0.21	-0.227	0.087
Producing food organically allows wildlife to flourish	-0.099	0.792	0.155	0.091	-0.136	0.096	0.023	0.089	-0.097
Better standards of animal welfare	0.205	0.746	-0.088	-0.07	0.027	0.214	0.096	0.121	0.056
Helps to reduce our carbon footprint	0.03	0.8	0.054	-0.042	0.046	0.04	0.11	-0.083	-0.06
Helps to sustain the bio diversity	0.166	0.644	-0.113	0.04	0.115	0.111	0.101	0.299	-0.016
Helps to develop beneficial micro organisms	-0.045	0.575	0.153	0.078	0.243	0.09	-0.094	-0.198	0.051
Influenced by reference group/ peer groups/ social interaction	-0.009	0.159	0.252	0.125	0.511	-0.075	0.106	0.236	-0.267
Influenced by store people	0.218	0.011	-0.01	0.207	-0.015	-0.187	0.042	0.014	0.693
Influenced by advertisements	-0.107	0.061	0.087	-0.001	0.804	-0.072	-0.134	0.024	0.141
influenced from mass media	0.037	0.021	0.226	-0.075	0.825	0.019	0.018	-0.095	0.016
Influenced by friends/ family/ members	0.536	-0.016	0.253	0.175	0.131	0.006	-0.1	-0.091	0.473
Influenced by environmentalist	-0.238	0.257	0.665	0.078	0.291	-0.05	-0.017	-0.162	-0.185
Taught in school/ college	0.04	0.024	0.705	0.001	0.258	-0.065	-0.026	-0.007	0.016
Fashion to consume	-0.37	0.108	0.548	-0.083	0.289	-0.07	0.176	0.021	0.155

Table 4. Grouping of the extracted factors

Factor number	Factor name	Variables Under Factor	Factor
			Loadings
F1	Food safety factor	Attributed to stay healthier in long run	0.579
		Attributed to nutritional attributes	0.708
		These foods are healthier than conventional one	0.582
		These foods are free from pesticide residues	0.792
		These foods are free from food additives	0.843
		These foods are free from chemical fertilizers	0.802
		These foods are free from heavy metals	0.793
		These foods are not involved in genetically modification process	0.56
		Degree of less harm to the soil	0.596
		Degree of less harm to water	0.521
		These foods are saving resources to next generation	0.767
		Influenced by friends/family/members	0.536
F2	Environmental factor	Producing food organically allows wildlife to flourish	0.792
		Better standards of animal welfare	0.746
		Helps to reduce our carbon footprint	0.8
		Helps to sustain the bio diversity	0.644
		Helps to develop beneficial micro organisms	0.575
F3	Influential factor	Influenced by environmentalist	0.665
		Taught in school/college	0.705
		Fashion to consume	0.548
F4	Cooking quality factor	Attributed to its pure taste	0.848
		Attributed to flavour	0.82
		Better quality than conventional one	0.519
F5	Motivational factor	Influenced by reference group/peer groups/social interaction	0.511
		Influenced by advertisements	0.804
		influenced from mass media	0.825
F6	Hygiene factor	It helps to free from diseases	0.818
		It helps to free from skin allergies	0.789
F7	Keeping quality factor	Long shelf life	0.804
		Good appearance	0.751
F8	Reliability factor	Degree of information on the labels are truthful/reliable	0.727
F9	Supportive factor	Influenced by store people	0.693

Table 5. Factors Impacting the Purchase Intention of Consumers

Factors	Mean score	Rank
Food safety factor	4.51	I
Environmental factor	3.7	V
Influential factor	2.56	IX
Cooking quality factor	3.64	VI
Motivational factor	3.10	VIII
Hygiene factor	3.61	VII
Keeping quality factor	3.91	III
Reliability factor	3.83	IV
Supportive factor	4.23	II

Table 6. Impact of age on food safety factor and environmental factor

Age	FOOD SAFETY FACTOR			Total	Chi-Square Value	P Value
	Less influence	Moderate Influence	High Influence			
Less than 25 years	16(51.6%)	11(35.5%)	4(12.9%)	31 (100%)	31.581**	0.000
25-35 years	17(26.2%)	21(32.3%)	27(41.5%)	65 (100%)		
36-45 years	4(9.5%)	17(40.5%)	21(50.0%)	42 (100%)		
More than 45 years	0(0.0%)	10(83.3%)	2(16.7%)	12 (100%)		
Total	37(24.7%)	59(39.3%)	54(36.0%)	150 (100%)		
Age	ENVIRONMENTAL FACTOR			Total	Chi-Square Value	P Value
	Less influence	Moderate Influence	High Influence			
Less than 25 years	10(32.3%)	9(29.0%)	12(38.7%)	31 (100%)	11.98 [#]	0.062
25-35 years	30(46.2%)	27(41.5%)	8(12.3%)	65 (100%)		
36-45 years	14(33.3%)	21(50.0%)	7(16.7%)	42 (100%)		
More than 45 years	3(25.0%)	6(50.0%)	3(25.0%)	12 (100%)		
Total	57(38.0%)	63(42.0%)	30(20.0%)	150 (100%)		

** : 1 per cent level of significance; # : 0 per cent level of significance;

Table 7. Impact of occupation on food safety and environmental factor

Occupation	FOOD SAFETY FACTOR			Total	Chi-Square Value	P Value
	Less influence	Moderate influence	High Influence			
Govt Employee	2(11.1%)	10(55.6%)	6(33.3%)	18 (100%)	13.719*	0.033
Self- Employed	18(39.1%)	16(34.8%)	12(26.1%)	46(100%)		
Private Employee	11(15.7%)	27(38.6%)	32(45.7%)	70 (100%)		
Professional	6(37.5%)	6(37.5%)	4(25.0%)	16 (100%)		
Total	37(24.7%)	59(39.3%)	54(36.0%)	150(100%)		
Occupation	ENVIRONMENTAL FACTOR			Total	Chi-Square Value	P Value
	Less influence	Moderate influence	High Influence			
Govt Employee	8(44.4%)	8(44.4%)	2(11.1%)	18 (100%)	10.337 ^{NS}	0.111
Self- Employed	12(26.1%)	21(45.7%)	13(28.3%)	46(100%)		
Private Employee	32(45.7%)	29(41.4%)	9(12.9%)	70 (100%)		
Professional	5(31.3%)	5(31.3%)	6(37.5%)	16 (100%)		
Total	57(38.0%)	63(42.0%)	30(20.0%)	150(100%)		

* : 5 per cent level of significance; NS: Not significant, Figures in parentheses indicate percentage to total.

Table 7. inferred that impact of occupation on food safety was significant at 5 per cent level and hence variables of this factor were majorly considered by respondents of different occupation groups.

LITERATURE CITED

- Chinnici G, Amico D M and Pecorino B 2002** A multivariate statistical analysis on the consumers of organic products. *British Food Journal*. 104: 187-199.
- Gan C, Wee H Y, Ozanee L and Kao T 2008** Consumers purchasing behaviour towards green products in New Zealand. *Innovative Marketing*. 4: 93-102.
- Hughner R S, McDonagh P, Prothero A, Shultz CJ and Stanton J 2007** Who are organic food consumers? a compilation and review of why people purchase organic food. *Journal of Consumer Behavior*. 6:1-17.
- Kumar S, Garg R and Makkar A 2012** Consumer awareness and perception towards green products: A study of youngsters in India. *International Journal of Marketing and Business Communication*. 1: 35- 43.
- Michaelidou N and Hassan L M 2008** The role of health consciousness, food safety concern and ethical identity on attitudes and intentions towards organic food. *International Journal of Consumer Studies*. 32: 163–170.
- Ozguven N 2012** Organic foods motivation factors for consumers. *Procedia – Social and Behavioural Sciences*. 62: 661-665.
- Pearson D, Henryks J and Jones H 2010** Organic food: what we know (and do not know) about consumers. *Renewable Agriculture and Food Systems*. 10: 1-7.
- Rezai G, Teng P K, Mohamed Z and Shamsudin M N 2012** Consumers' awareness and consumption intention towards green foods. *African Journal of Business Management*. 6: 4496-4503.
- Tsarkiridou E, Boutsouki C, Zotos Y and Mattas K 2008** Attitudes and behavior towards organic products: an exploratory study. *International Journal of Retail and Distribution Management*. 3: 158-175
- Wanninayake W M C B and Randiwela P 2008** Consumer attractive-ness towards green products of FMCG sector: An empirical study. *Oxford Business & Economics Conference Program*.

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