

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. 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.

Keywords: Food safety, influential factor, motivational factor, organic foods, purchase intention, supportive factor, variance.

INTRODUCTION

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. The purpose of organic farming is to enhance the natural biological cycles and to meet minimum animal welfare standards. 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. Green consumers have been shown to be willing to pay a higher price for environmentally friendly products. This has huge opportunity for companies as well as governments looking to make eco-friendly policy changes. 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. 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.

From the background delineated above, the present study attempts to understand the purchase intention of consumers for organic foods with the following objectives, to identify the most preferred category of products of organic origin, to identify the factors influencing the purchase intention to buy organic foods, and to study the relationship between demographic factors and factors influencing purchase intention.

METHODOLOGY

The study was undertaken in Coimbatore district of

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Tamil Nadu. 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 and 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 H_0 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

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

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

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

Table 1: Most Preferred Category of Products of Organic Origin

| Products category | Weighted score | Weighted average | Priority |
|-------------------------|----------------|------------------|----------|
| Cereals | 1479 | 9.86 | 4 |
| Pulses | 1424 | 9.49 | 5 |
| Fruits | 1365 | 9.10 | 6 |
| Vegetables | 1785 | 11.90 | 1 |
| Milk and dairy products | 1630 | 10.87 | 2 |
| Cooking oils | 1490 | 9.93 | 3 |
| Tea/Coffee | 679 | 4.53 | 12 |
| Spices and condiments | 1108 | 7.39 | 7 |
| Dry fruits | 675 | 4.50 | 13 |
| Sugar products | 991 | 6.61 | 9 |
| Honey | 741 | 4.94 | 11 |
| Mushroom | 559 | 3.73 | 14 |
| Meat and Meat products | 786 | 5.24 | 10 |
| Eggs | 1069 | 7.13 | 8 |

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) with a weighted average of (11.90) followed by milk and dairy products (10.87), cooking oils (9.93), cereals (9.86), pulses (9.49), fruits (9.10), spices and condiments (7.39), eggs (7.13), sugar products (6.61), meat and meat products (5.24), honey (4.94), tea/ coffee (4.53), dry fruits (4.50). Mushroom (3.73) was the least preferred category of products of organic origin. Thus the most preferred category of organic foods were vegetables followed by milk and dairy products and 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 4.2.

Table.2. Total variance explained

| Component/ Factor | Initial Eigen values | | | Rotation Sums of Squared Loadings | | |
|----------------------|----------------------|---------------|--------------|-----------------------------------|---------------|--------------|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 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 | 1.170 | 3.441 | 64.605 | 1.557 | 4.578 | 63.734 |
| 9 | 1.151 | 3.386 | 67.991 | 1.447 | 4.257 | 67.991 |

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.

Table 3: Rotated Component Matrix

| Variables | Component/ Factor | | | | | | | | |
|---|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Attributed to its pure taste | .042 | .126 | .009 | .848 | -.136 | .129 | .042 | .150 | .142 |
| Attributed to flavour | .009 | -.185 | -.020 | .820 | .083 | .087 | .282 | -.038 | .023 |
| Better quality than conventional one | .210 | .184 | -.144 | .519 | .113 | .239 | .117 | .381 | .077 |
| Attributed to freshness | .042 | .298 | .057 | .112 | -.084 | .306 | .307 | -.374 | -.403 |
| Long shelf life | .127 | .094 | .076 | .125 | -.060 | .107 | .804 | .013 | -.161 |
| Good appearance | .121 | .142 | -.039 | .193 | -.030 | .073 | .751 | -.051 | .144 |
| Attributed to stay healthier in long run | .579 | -.013 | -.384 | .066 | .112 | .152 | .273 | .148 | .098 |
| Attributed to nutritional attributes | .708 | -.085 | -.100 | .078 | -.013 | -.074 | .171 | -.148 | .080 |
| It helps to free from diseases | -.082 | .277 | -.032 | .175 | -.025 | .818 | .106 | .037 | -.119 |
| It helps to free from skin allergies | .060 | .239 | -.063 | .142 | -.077 | .789 | .085 | -.133 | -.138 |
| These foods are healthier than conventional one | .582 | .067 | -.255 | .017 | .025 | .350 | .192 | .062 | .174 |
| These foods are free from pesticide residues | .792 | .050 | -.103 | -.073 | -.006 | .128 | .002 | .150 | .010 |
| These foods are free from food additives | .843 | .037 | .026 | .023 | -.003 | -.078 | .161 | .098 | .196 |
| These foods are free from chemical fertilizers | .802 | -.066 | .023 | .028 | -.124 | -.083 | .070 | .203 | .039 |
| These foods are free from heavy metals | .793 | .099 | -.022 | -.048 | -.095 | .044 | -.038 | .164 | -.137 |
| Organic certification quality | .191 | .176 | .220 | .333 | -.292 | .004 | -.391 | .184 | -.403 |
| Degree of information on the labels are truthful/reliable | .216 | .152 | -.052 | .284 | -.021 | -.099 | -.088 | .727 | -.046 |
| These foods are notinvolved in genetically modification process | .560 | .114 | -.386 | .217 | .152 | -.143 | .046 | .133 | -.108 |
| Degree of less harm to the soil | .596 | .168 | -.391 | .243 | .060 | -.396 | .048 | -.279 | -.125 |
| Degree of less harm to water | .521 | .229 | -.481 | .219 | .167 | -.263 | -.047 | -.332 | -.025 |
| These foods are saving resources to next generation | .767 | .140 | .019 | .074 | -.137 | .022 | -.210 | -.227 | .087 |
| Producing food organically allows wildlife to flourish | -.099 | .792 | .155 | .091 | -.136 | .096 | .023 | .089 | -.097 |
| Better standards of animal welfare | .205 | .746 | -.088 | -.070 | .027 | .214 | .096 | .121 | .056 |
| Helps to reduce our carbon footprint | .030 | .800 | .054 | -.042 | .046 | .040 | .110 | -.083 | -.060 |
| Helps to sustain the bio diversity | .166 | .644 | -.113 | .040 | .115 | .111 | .101 | .299 | -.016 |
| Helps to develop beneficial micro organisms | -.045 | .575 | .153 | .078 | .243 | .090 | -.094 | -.198 | .051 |
| Influenced by reference group/ peer groups/ social interaction | -.009 | .159 | .252 | .125 | .511 | -.075 | .106 | .236 | -.267 |
| Influenced by store people | .218 | .011 | -.010 | .207 | -.015 | -.187 | .042 | .014 | .693 |
| Influenced by advertisements | -.107 | .061 | .087 | -.001 | .804 | -.072 | -.134 | .024 | .141 |
| influenced from mass media | .037 | .021 | .226 | -.075 | .825 | .019 | .018 | -.095 | .016 |
| Influenced by friends/ family/ members | .536 | -.016 | .253 | .175 | .131 | .006 | -.100 | -.091 | .473 |
| Influenced by environmentalist | -.238 | .257 | .665 | .078 | .291 | -.050 | -.017 | -.162 | -.185 |
| Taught in school/ college | .040 | .024 | .705 | .001 | .258 | -.065 | -.026 | -.007 | .016 |
| Fashion to consume | -.370 | .108 | .548 | -.083 | .289 | -.070 | .176 | .021 | .155 |

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 per cent of the variation. Attributed to its pure taste (0.848), Attributed to flavour (0.820) and Better quality than conventional one (0.519) are the variables loaded on the Factor 4 (Cooking quality factors). It explains the 6.70 per cent 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 per cent of the variation. The Factor 6 (Hygiene factor) explains the 6.05 per cent 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 per cent 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 per cent of the variation. Influenced by store people (0.693) was the variable loaded on Factor 9 (Supportive factor) which explains the 4.26 per cent of the variance.

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 | 0.560 |
| | | 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 | 0.767 |
| | | 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 | 0.800 |
| | | Helps to sustain the bio diversity | 0.644 |
| F3 | Influential factor | Helps to develop beneficial micro organisms | 0.575 |
| | | Influenced by environmentalist | 0.665 |
| | | Taught in school/college | 0.705 |
| F4 | Cooking quality factor | Fashion to consume | 0.548 |
| | | Attributed to its pure taste | 0.848 |
| | | Attributed to flavour | 0.820 |
| F5 | Motivational factor | Better quality than conventional one | 0.519 |
| | | 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 |
| F8 | Reliability factor | Good appearance | 0.751 |
| | | Degree of information on the labels are truthful/reliable | 0.727 |
| F9 | Supportive factor | Influenced by store people | 0.693 |

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). The mean scores of environmental factor, influential factor, cooking quality factor, motivational factor, hygiene factor, keeping quality factor and reliability factor were 3.70, 2.56, 3.64, 3.10, 3.61, 3.91 and 3.83 respectively. (Rezai *et al.* 2012). Food safety factor was majorly considered by sample respondents in purchasing organic foods followed by supportive factor. The impact of motivational factors and influential factors on consumers during their purchase of organic foods was less.

Table 5: Factors Impacting the Purchase Intention of Consumers

| Factors | Mean score | Rank |
|------------------------|------------|------|
| Food safety factor | 4.51 | I |
| Environmental factor | 3.70 | V |
| 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 |

Relationship between Demographic Factors and Factors Influencing the Purchase Intention

Impact of age on food safety and environment factor: Table 6 inferred that impact of age on food safety and environmental factors were significant at 1 per cent level and 10 per cent level

Table 6: Impact of age on food safety factor and environment factor.

| FOOD SAFETY FACTOR | | | | | | |
|----------------------|----------------|--------------------|----------------|------------|------------------|---------|
| Age | Less influence | Moderate Influence | High Influence | Total | Chi-Square Value | P Value |
| 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%) | | |
| ENVIRONMENTAL FACTOR | | | | | | |
| Age | Less influence | Moderate Influence | High Influence | Total | Chi-Square Value | P Value |
| 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; Figures in parentheses indicate percentage to total.

Table 7: Impact of occupation on food safety and environment factor

| FOOD SAFETY FACTOR | | | | | | |
|----------------------|----------------|--------------------|----------------|-----------|----------------------|---------|
| Occupation | Less influence | Moderate influence | High Influence | Total | Chi-Square Value | P Value |
| 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%) | | |
| ENVIRONMENTAL FACTOR | | | | | | |
| Occupation | Less influence | Moderate influence | High Influence | Total | Chi-Square Value | P Value |
| 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%) | | |

** : 1 per cent level of significance; # : 0 per cent level of significance; Figures in parentheses indicate percentage to total.

Impact of occupation on food safety and environment factor:

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.

CONCLUSION

The study concluded that vegetables followed by milk and dairy products were the most preferred category of products of organic origin. 67.99 per cent of cumulative

variance was explained by nine factors with maximum variance explained by factor 1 (17.95) and factor 2 (9.44). The mean score of 4.51 for food safety factor indicated that this was majorly considered by sample respondents in purchasing organic foods followed by supportive factor (4.23). The impact of motivational factors (3.10) and influential factors (2.56) on consumers during their purchase of organic foods was less. There was significant impact of respondents of different age groups on food safety and environmental factors while the impact of occupation levels was significant only on food safety factor and was not significant for environmental factor.

Paper received on : September 13, 2018

Accepted on : September 19, 2018

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