Consumer Preferences and Influencing Factors for Purchase Places of Organic Food Products: Empirical Evidence from South India

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Abstract

The market for organic products in India is in its infancy, and knowledge about organic consumers in the country is definitely under-researched. The objective of this paper is to gain knowledge about consumers' preferences regarding the purchase places of organic products in Bangalore, the capital of Karnataka state, India. The consumers' preferred places of purchase and their socio - demographic characteristics were collected by means of face to face interviews with 201 consumers by using the stratified simple random sampling technique at different locations in Bangalore. The data obtained from the survey were analyzed with descriptive statistics, Friedmen's test, Kendall's W test, and seemingly unrelated regression. The results revealed that the most preferred purchase places for organic food products were specialized organic stores and supermarkets. The least preferred purchase places were the local open markets and conventional retail shops. Furthermore, the results from seemingly unrelated regression showed that the preferences about places to purchase organic food products were mainly influenced by gender, education, family size, and family income. Policy makers in agricultural marketing, institutions who are involved in organic food marketing, and producers should consider the differences in consumer preferences and their socio-demographic attributes for determining and supporting efficient marketing channels for organic food products.

Keywords: consumer preference, seemingly unrelated regression model, organic food products, purchase place

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Organic agriculture is developing rapidly and is practiced worldwide by 1.8 million producers in 160 countries (Willer & Kilcher , 2011). Traditional farming systems in India could be broadly understood as falling in the scope of what today is designated as organic farming principles. Historically, these models of agricultural production were pressured among other factors by an ever growing population. This general context saw the emergence of the so called 'Green Revolution' program, which was heralded as the enabler of agricultural paradigms' emancipation from the menace of food scarcity. In effect, positive developments emanating out of these dramatic processes have also been accompanied by gradual and negative side effects posing considerable challenges to the sustainability of conventional agricultural production (Sharma, 2006). Consequently, interest in

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organic agriculture systems in the past decades has also built up as an alternative eco- friendly cultivation paradigm, which has gained importance at national and global levels. The concept of consumption of organic food started in the developed nations; however, the trend is even gaining importance in developing countries. India has become one of the largest exporters of organic food and is increasingly turning into a main consumer nation as well (ResearchandMarkets, 2012). In this sense, domestic market for organic products in India is also growing as compared to exports. Attesting to that, India's first market survey conducted by the International Competence Centre for Organic Agriculture (ICCOA) indicates a concrete potential of over 15 billion Indian rupees by 2015 (265 million euros) (Rao, 2006). To explore the opportunity, Indian firms are in the process of developing or expanding diverse marketing channels. Presently, there are about 2,000 shops selling organic products in major cities of India. The conventional trade also stocks organic products on its shelves. Annual sales amounted to 543 million US dollars in 2010 (Ramesh et al., 2010).

The distribution of organic products happens through different channels like exclusive stores/outlets, conventional retail stores, supermarkets/hypermarkets, advanced order based sales, home delivery, direct sales from the farmers in open markets, and mobile retail shops (Ghosh, 2004). The food industry delivers certified organic products to consumers through specialized stores and large supermarkets. The organic products in the Indian market cost in general at least/almost double the price of conventional products, and prices vary between different marketing channels (Garibay & Jyoti, 2003).

As indicated by further fieldwork, consumers prefer organic products over conventional ones when they consider health risks, lifestyles associated with organic production, concerns about chemical residues in food, and about impact on the environment and wildlife. At present, the market is still in an early phase of its development, and organic products' retail outlets are available only in large cities, without any availability of more varied assortments inside this category. Furthermore, these specialized stores are normally situated double the distance where the remaining household purchases are carried out. Hence, consumers are not provided the convenience of access to a comprehensive range of products in one place. Despite these issues, however, not many efforts have been carried out to profile this market segment (Menon, 2009). Furthermore, the majority of needed research in this field has been undertaken in developed countries, and hence, consumer attitudes, motives, awareness, preferences, and hindrances for buying organic food in developing countries is significatively under-researched. Accordingly, there is an urgent need to fill this research gap. In particular, research studies on consumer preferences for purchase places and factors influencing these preferences is mostly unknown in India, and it deserves careful investigation.

The present research undertook such an attempt to determine consumer preferences for purchase places and factors influencing them, which is of particular relevance for efforts to plan and increase organic food demand in our country. In this sense, the research results would be useful for policy makers and institutions dealing with marketing of agricultural produce in terms of increasing available knowledge on the factors influencing consumer behavior towards organic food products. On the other hand, the present study may also be helpful for companies who are involved in organic food marketing in terms of calibrating their marketing strategies.

Methodology

The present study involved a two- stage method. In the first stage, a simple ranking procedure was utilized to quantify consumer preferences. In the second stage, quantified preferences obtained in the first stage were regressed on the consumer specific characteristics by using a seemingly unrelated regression model (SUR). The next section covers the theoretical background of the simple ranking procedure and the SUR model. Furthermore, the data collection method and consumer specific characteristics used in the SUR model are delineated.

➲ **Simple Ranking of Places of Purchase :** Simple ranking is putting various alternatives in order of importance. In the present study, the respondents were asked to rank the importance of the *'n'* purchase places from the *most important* to the *least important*, 1 through *n.* The most preferred purchase place was ranked "1". Its realization

Purchase Place	Rank
1	-
2	-
.	.
.	.
n	-

results in the greatest utility to the consumer. The least preferred purchase place was ranked *"n"*. Its realization results in the lowest utility. The respondents were asked not to provide the same rank for two or more purchase places. So, this method required the respondents to make *"all-or-nothing"* choices for each paired comparison.

➲ **Non-Parametric Statistical Analysis :** The weight (utility) of each of the purchase places in the simple ranking procedure ranges from 5 to 1. Non-parametric statistics may be used to determine agreement between consumers, preferences in the ranking of purchase places (Friedman's Test), and the degree of agreement (Kendall's W Test). The Friedman's test is used for comparing three or more related samples and makes no assumptions about the underlying distribution of data. One may use Friedman's test to determine whether purchase places are equally important within a block. Friedman's test was used to know whether the purchase places are equally preferred, and Kendall's W test was used for agreement among more than two sets of rankings (Günden, Türkekul, Miran, Abay, & Akgüngör, 2010). Additionally, the Friedman's test was also used to test whether the information sources are equally important for food safety, while Kendall's W test was used (Günden, Miran, Uysal, & Bektaş, 2008a) for testing the agreement among more than two sets of rankings. The Friedman's test was also used to determine whether goals are equally important among farmers (Sahin, Gunden, Cankurt, Miran, & Yildirim, 2013). The test consists of *M* mutually independent rows (one for each farmer) and *N* elements (goals) in each row (Conover, 1971). Blocks were arranged as follows :

		Treatment					
		1	2	3	.	.	*N*
Block	1	X_{11}	X_{12}	X_{13}	...	...	X_{1N}
	2	X_{21}	X_{22}	X_{23}	...	...	X_{2N}
	3	X_{31}	X_{32}	X_{33}	...	...	X_{3N}
	.	...	...	...	...	...	...
	.	...	...	...	...	...	...
	M	X_{M1}	X_{M2}	X_{M3}	...	...	X_{MN}

Where, each block (row) is consumers' purchase place rankings according to their preferences. With five purchase places, each row consists of five values, which are the weights of purchase place elicited from each consumer. The Friedman's test statistic in the presence of tied ranks is defined as:

$$F_T = \frac{\Sigma_{J=1}^{N} R_j^2 - \frac{(\Sigma_{J=1}^{N} R_j)^2}{N}}{\frac{MN(N+1)}{12} - \frac{\Sigma T}{N-1}} \qquad \text{..... (1)}$$

where,

F is the Friedman's statistic, M is the number of rows (often called "treatments"), N is the number of columns (often called "blocks"), R_j is a summation across the columns, and Σ^T is tied ranks, calculated as (2):

$$\Sigma T = \frac{\Sigma_{J=i}^{k} (t^3_i - t_i)}{12} \quad \text{.....(2)}$$

The null hypothesis

H_0 = There is no difference between the purchase places.

H_1 = At least one purchase place is preferred over the others.

The null hypothesis is rejected at the level of significance α if the test statistic exceeds the 1- α quantile of chi-square random variable with *n* -1 degrees of freedom. If the values of *N* and/or *M* exceed those given in the tables, the significance of *F* may be looked up in chi-squared distribution tables with *N*-1 degrees of freedom.

Kendall's W (Kendall's coefficient of concordance) can be used in the same situations where Friedman's test statistic is applicable. The primary objective of Kendall's W is to measure the agreement in rankings in the *M* blocks. The statistics can be written as :

$$W = \frac{12}{M^2 N(N+1)(N-1)} \Sigma_{j=1}^{N} (R_j - \frac{M(N+1)}{2})^2 \quad \text{.....(3)}$$

If all *M* blocks are in perfect agreement, then the treatment 1 receives the same ranking in all *M* blocks, treatment 2 receives the same ranking in all *M* blocks, and so forth. In such cases, the resulting value of *W* is "1". In the case of perfect disagreement among rankings, the value of R_j is equal or very close to one other and the values of both their mean and *W* are close to "0". For the values of 0.9, 0.7, 0.5, 0.3, and 0.1, the agreements are *very strong, strong, moderate, weak* and *very weak* respectively (Schmidt, 1997).

➲ **Seemingly Unrelated Regression Model :** In the present study, the quantified preferences obtained from simple ranking method are analyzed by seemingly unrelated regression (SUR) that was investigated by Zellner (1962). A SUR system involves *"n"* observations on each of *"g"* dependent variables. In principle, these could be any set of variables measured at the same points in time or for the same cross section. In practice, however, the dependent variables are often quite similar to each other. The seemingly unrelated regression model is :

$$\gamma_i = X_i \beta_i + \varepsilon_i, i = 1. \ldots .., M$$

where ,

$$\varepsilon = [\varepsilon_1', \varepsilon_2', \ldots \ldots . \varepsilon'_M]$$

and,

$$E[\varepsilon | X_1, X_2, \ldots \ldots X_M] = 0,$$
$$E[\varepsilon\varepsilon' | X_1, X_2, \ldots \ldots X_M] = \Omega,$$

It is assumed that a total of *T* observations are used in estimating the parameters of *M* equations. Each equation involves K_m regressions, for a total of $K = \Sigma^n_{i=1} K_i$. $T > K_i$ is required. The data are assumed to be well behaved. It is also assumed that disturbances are uncorrelated across observations. Therefore,

$$E[\varepsilon_{it}\varepsilon_{js} | X_1, X_2, \ldots \ldots X_M] = \sigma_{ij}, \text{ if } t = s \text{ and } 0 \text{ otherwise.}$$

The disturbance formulation is therefore :

$$E[\in_i \in_j | X_1, X_2, \ldots \ldots X_M] = \sigma_{ij}, I_T$$

or

$$E[\varepsilon\varepsilon' | X_1, X_2, \ldots \ldots X_M] = \Omega = \begin{bmatrix} \sigma_{11}I & \sigma_{12}I \ldots .. \sigma_{1M}I \\ \sigma_{21}I & \sigma_{22}I \ldots .. \sigma_{2M}I \\ \sigma_{M1}I & \sigma_{M2}I \ldots \sigma_{MM}I \end{bmatrix}$$

The data matrices are group specific observations on the same variables. The covariance structures model is, therefore, a testable special case (Greene, 2003). Koyubenbe, Miran, Konca, Yaylak, Uzmay, and Candemir (2010) determined the reasons for farmers' preferences for organic milk production using seemingly unrelated regression. Consumers' preferences from the fuzzy pair wise comparison was regressed upon consumer specific variables by using seemingly unrelated regression to determine the influence of consumer specific variables on consumer preferences for information sources on food safety by Günden et al. (2008a).

➲ **Data Collection :** The study is based on primary survey of 250 respondents belonging to Bangalore, the capital of the Indian state, Karnataka. Located on the Deccan Plateau in the south-eastern part of Karnataka (12.97° N 77.56° E), it is India's third most populous city and fifth-most populous urban agglomeration. The city was purposively selected for the present study based on the report by Oswald (2012) in collaboration with International Competence Center for Organic Agriculture (ICCOA). The Report revealed that, "among the three urban organic markets analyzed, Bangalore is the largest urban organic market in India and there is no sufficient information about organic consumers and their preferences towards organic food".

Data collection was carried out through a stratified simple random sampling method covering the three population strata, that is, poor, middle class, and rich resident area, these areas were determined based on socioeconomic development index of Bangalore. Data were gathered from a survey conducted during December 2012 to February 2013. Information was collected by direct interviews administered to a sample of 250 organic buyers who regularly purchased organic products. The questionnaire was subdivided into different sections. In the first section, the socioeconomic profile of the respondents were gathered and subsequent sections covered information about respondents' knowledge about organic products, their purchase pattern, preferences towards purchase places, and the reasons behind these preferences.

Out of the total 250 random sample drawn, 201 questionnaires were completed, representing a response rate of 80.4%. The questionnaire was designed through extensive pre-testing of each particular question via personal interviews with the consumers. The data were collected with the help of a number of economics and statistics post graduate students from a well known university of agricultural sciences in Bangalore. The completed questionnaires were then checked to verify the quality of the data. The sample used in this study is not representative of Bangalore. However, the survey expected to provide exploratory results and insights of organic products related issues and consumer preferences about purchase places in Bangalore.

➲ **Data Analysis :** Simple data analysis techniques were used such as descriptive statistics, cross tabulation, and chi-square test. Also, non-parametric tests like Friedman's test and Kendall's W test were conducted by using the Statistical Package for Social Sciences (SPSS 16.0). Furthermore, the Seemingly Unrelated Regression Model was used with the assistance of another statistical software package (STATA 10.2) to analyze factors influencing the purchase place preference level of organic food consumers. The Tables 1 and 2 show the definitions of the variables and basic descriptive statistics of consumer specific characteristics.

Results and Discussion

As mentioned above, 201 respondents participated in the survey. The study involved a two-stage method which pertains to determining the degree of consumer preference for each purchase place by using the simple ranking method and the consumers' preferences from the first stage were regressed on the consumer specific variables in the second stage. Additionally, the socio- demographic profiles of the respondents were analyzed.

➲ **Socio - Demographic Profile of Organic Consumers :** Upon descriptive analysis of consumer specific socio-demographic variables, the results revealed that 57.7% of the respondents were women and 42.3% of the respondents were men. This was, to a certain extent, expected since women are the main food purchase decision makers in the family. The age of the consumers varied from 20 to 78 years, and average age was 39.38 years. The

Table 1. Variable Definitions on Consumer Specific Characteristics

Variable	Unit	Definition
Gender	Dummy	1 if respondent is male, 0 otherwise.
Age	Years	Age of respondents in years.
Education	Years	Consumer's years of education/ schooling.
Marital status	Dummy	1 if respondent is married, 0 otherwise.
No. of children in the family	Persons	Total number of children in the family.
Age of children	Years	Age of children in the family.
0 to15 Years	Dummy	1 if children's age in the family is between 0 to 15 years , 0 otherwise.
> 15 Years	Dummy	1 if the children's age in the family > 15 years, 0 otherwise.
Family size	Persons	Number of household members.
Employments status	Dummy	1 if respondent is employed, 0 otherwise.
Household income	Indian Rupee	Total yearly income of the household.
Food habit	Dummy	1 if respondent is vegetarian and 0 non-vegetarian.
Knowledge about organic certification	Dummy	1 if the respondent is aware about organic certification process, 0 otherwise.
Knowledge about organic food production	Dummy	1 if the respondent is aware about organic food production process, 0 otherwise.

Table 2. Basic Descriptive Statistics of Consumer Specific Characteristics

Variables	Mean	Standard Deviation	Min	Max	No. of Respondents	%
Age (Years)	39.38	10.227	20	78	201	100
Education (Years)	13.72	1.67	7	16	201	100
Family size	4.09	1.028	2	8	201	100
Family income (Lakh * ₹)	4.59	1.743	2	9	201	100
No. of children in the family	1.67	0.688	1	6	176	
Gender (Dummy)						
1: Male					85	42.30
0: Female					116	57.70
Marital status (Dummy)						
1: Married					191	95.00
0: Single					10	5.00
Age of children 0 to 15 years (Dummy)						
1: 0 to 15 years					159	79.10
0: > 15 years					42	20.90
Age of children >15 years (Dummy)						
1: > 15 Years					42	20.90
0: < 15 years					159	79.10
Employment status (Dummy)						
1: Employed					171	85.10
0: Unemployed					30	14.90
Food habit (Dummy)						
1: Vegetarian					154	76.60
0: Non-vegetarian					47	23.40
Knowledge about organic certification (Dummy)						
1: Yes					94	46.80
0: No					107	53.20
Knowledge about organic food production						
1: Yes					41	20.40
0: No					160	79.60

* Lakhs ₹ = 100 thousand

respondents had an average of 13.72 years of education. A total of 85.1% of the respondents had full time employment. Household size was approximately of 4 persons on an average, with minimum of 2 and maximum of 8 persons per family. Average income of the household was approximately 4,59,000 INR (1 US$ = 54.87) per year. About 95% of the respondents were married and had children - minimum of 1 and maximum of 6 per household - and 79.10% of the children were aged between 0 to 15 years, with 20.9% over 15 years of age. Out of the total of respondents, nearly 77% of the respondents were vegetarians. A total of nearly 47% of the respondents were aware about organic certification processes and 20% were aware of production processes (Table 2).

Both industry and academic studies have investigated the demographic profile of organic consumers across the world, and to date, these studies have yielded conflicting results. When the results are compared to past literature, the findings both support and contradict past work. Demographic properties of Indian consumers differ in many ways, whereas some similarities have been found. Consistent with other studies (Annunziata & Vecchio, 2011 ; Brown, Dury, & Holdsworth, 2009; Oswald, 2012), our research shows that female consumers are highly motivated towards purchasing organic food products as compared to their male counterparts. It was found that education and household income have also been playing an important role as highly educated consumers with high income purchase organic food. These results are consistent with the results obtained by Magnusson, Arvola, Hursti, Åberg, and Sjödén (2001) and Chakrabarti (2010). Studies have also found negative relationships between demographic variables and organic food preferences (e.g., Chinnici, D'Amico, & Pecorino, 2002) . In the present study, most of the respondents were married and had young children in their family, and the results obtained by the present study are supported by the findings of Hill and Lynchehaun (2002).

➲ **Measure of Consumer Preferences :** In the first stage, the degrees of consumer preferences or the consumer priorities for purchase places were identified. The consumers were asked to rank the importance of the five purchase places from *most* to the *least important*. The most preferred purchase place was ranked "1". Its realization results in highest utility to the consumer. The least preferred purchase place was ranked "5". Its realization results in the least utility **(**Günden, Miran, Uysal, & Bektaş, 2008b). According to Günden et al. (2010), in purchasing conventional fresh fruits and vegetables in Turkey, the most important criteria for consumers were quality, food safety, and price. Local markets (open markets, bazars in Turkey) are the most preferred purchase place in terms of price and consumers' shopping habits.

In the present research, specialized organic stores were the most preferred purchase place in terms of quality, trust, and price. Presently, more than 70 specialized organic retail stores exist in different locations in Bangalore. The second most preferred place of purchase is supermarkets/hypermarkets based on reasons of convenience, ease of access, and quality. Many of the supermarkets/hypermarkets are increasing their shelf space for organic products. The least preferred venue for purchasing the organic food products is the local open market based on reasons of quality, trust, and food safety. Conventional retail stores are part of the existing indirect market channels. Still, some farmers manage to sell their products directly to consumers either in their own farm or sometimes in specific areas. Therefore, the order of preference regarding the five options given to organic consumers is as follows: Specialized organic stores (4.12), supermarkets/hypermarkets (3.38), direct/on farm sale (3.22), conventional retail store (2.36), and local open markets (1.96). The basic descriptive statistics of the results obtained from simple ranking procedure are presented in the Table 3.

The Friedman test was used to find if there is a difference in the ranking of purchase places. The Friedman test confirms that some purchase places were clearly more preferred than others. Kendall's W test is used to measure the degree of agreement. The value of Kendall's W is 0.30 and shows that the agreement for consumers in ranking the purchase place ranges from *weak* to *moderate*. In order to compare our results with previous studies, the weights of consumer preferences regarding the purchase place were recalculated to arrive at their share of total weights. It was determined that the weight of consumer preferences for specialized organic stores is 0.27, for supermarkets/hypermarkets, it is 0.22, for direct sale/ on farm sale, the value is 0.21, for conventional retail stores, the figure is 0.16, and for local open market, the value is 0.13. Naspetti and Zanoli (2004) reported that Italian consumers preferred supermarkets (0.44), specialized organic shops (0.35), and local (open) markets (0.21) for organic food products. They claimed that the marketing channels' ranking for Italian consumers is - from *most* to

Table 3. Descriptive Statistics of Consumer Preferences for Shopping Places of Organic Food Products

Shopping places	Mean	Standard deviation	Min.	Max.	Share of Total Weights
Specialized organic stores	4.12	1.49	1	5	0.27
Supermarkets/hypermarkets	3.38	1.04	1	5	0.22
Direct sales/sales on farm	3.22	0.67	1	5	0.21
Conventional small retail shops	2.36	1.13	1	5	0.16
Open local market	1.96	1.43	1	5	0.13

Significant by Friedman test p <0.01; Kendall's W = 0.30

the *least* preferential purchase places - as follows : supermarkets, specialized shops, and local (open) markets.

Hence, accordingly, both literature and research findings point out the position of importance enjoyed by specialized organic shops and supermarkets/hypermarkets in consumer preference over the variety of available market channels for organic products. This is due to reasons of perceived factors as quality, price, trust, convenience, easy to access, and the set of retailer's efforts towards consumer satisfaction. On the other side, contrary to our findings were those of Günden et al. (2010), who determined the weight of consumer preferences regarding purchase places of organic fruits and vegetables as 0.32 for local markets, 0.29 for supermarkets/hypermarkets, 0.21 for greengrocers, 0.14 for specialized stores, and 0.04 for web-based retailers.

➲ **Factors Influencing the Consumers' Preferences :** In the second stage, the SUR model was used to determine the factors influencing consumers' preferences over purchase places for organic products. The degree of consumer preferences over purchase places was regressed on consumer specific characteristics in order to identify the reasons underlying these preferences. The summarized estimation results are presented in the Table 4.

Education had a significant positive influence on the level of consumer preferences for specialized organic shops and supermarkets/hypermarkets, whereas it had a negative influence on the level of preference for conventional retail shops and local open markets. In this sense, as the consumers' years of schooling increased, the degree of preference for conventional retail shops and local open markets decreased. That is, most educated consumers had a tendency to purchase organic food products in specialized organic shops and supermarkets/hypermarkets.

As family income level increased, the preference for local open markets decreased. In the same sense, at higher-income levels, the degree of preference for specialized organic shops and supermarkets/hypermarkets increased. Family size had a significant negative impact on specialized organic shops and supermarkets/hypermarkets, whereas it had a positive impact on conventional retail shops and local open markets. More crowded families did not consider specialized organic shops and supermarkets/hypermarkets as preferred purchase places for organic products. On the other side, in relation to the influence of marital status on the level of consumers' preference, it indicated that married consumers preferred shopping at supermarkets/hypermarkets more strongly than single consumers.

Families with the presence of children aged between 0 to 15 years had a significant positive influence on the preference for specialized organic shops, whereas families with the presence of children aged over 15 years of age had a negative influence on the preference for conventional retail shops. Hence, this implies that younger children in the family influenced purchase of organic food products due to health concerns of growing children. These results are powered by a Swiss study, which reported that families and couples with babies and small children are highly motivated to purchase organic products. Furthermore, a Finnish research reported the positive attitudes of families with children towards consumption of organic food products. On the contrary, Wier and Calverley (2002) reported that families with teenagers have less intention to buy organic food products. The significant positive influence of gender on the level of preference for supermarkets/hypermarkets implies that men preferred supermarkets/hypermarkets more often than women did. Posed differently, the significant negative impact of gender on conventional retail shops indicates that women preferred these purchase places more as compared to their male counterparts.

Table 4. SUR Model for Consumer Preferences of Purchase Places

Variables	Supermarkets/ Hypermarkets	Specialized Organic Shops	Conventional Retail Shop/Kirana Shop	Direct Sales/ Sales on Farm	Local Open Market
Constant	0.826713	-2.14562**	5.607432*	3.255436*	7.227626*
	(0.715008)	(0.937857)	(0.781514)	(0.545045)	(0.93899)
Gender	0.371003*	-0.22778	-0.31935**	-0.00808	0.088736
	(0.136717)	(0.179327)	(0.149433)	(0.104218)	(0.179544)
Age	-0.01793**	0.003477	0.017076**	0.000118	-0.00185
	(0.009118)	(0.011959)	(0.009966)	(0.00695)	(0.011974)
Education	0.206112*	0.435075*	-0.29896*	0.030856	-0.3897*
	(0.041498)	(0.054432)	(0.045358)	(0.031634)	(0.054498)
Marital status	0.815169**	-0.13225	-0.20575	-0.20368	-0.2451
	(0.363692)	(0.477045)	(0.39752)	(0.277239)	(0.477621)
No. of children in the family	-0.16424	-0.03357	0.075919	0.071481	0.048108
	(0.106496)	(0.139688)	(0.116402)	(0.081181)	(0.139857)
Age of children : 0 to 15 years	0.11112	0.650788**	-0.35238	-0.0401	-0.43879
	(0.211721)	(0.277709)	(0.231414)	(0.161393)	(0.278044)
Age of children >15 years	0.278663	0.388962	-0.41753***	0.019386	-0.36173
	(0.210253)	(0.275784)	(0.22981)	(0.160275)	(0.276117)
Family Size	-0.19812*	-0.25759*	0.200098*	-0.04599	0.335669*
	(0.071542)	(0.09384)	(0.078196)	(0.054536)	(0.093953)
Employment Status	0.003272	0.247776	-0.1273	-0.07763	-0.02397
	(0.195543)	(0.256489)	(0.213731)	(0.149061)	(0.256798)
Family Income	0.083577**	0.162569*	-0.00699	-0.02933	-0.14932*
	(0.040247)	(0.05279)	(0.04399)	(0.03068)	(0.052854)
Food Habit	-0.15695	-0.08497	0.099433	0.000832	0.211405
	(0.152501)	(0.200031)	(0.166686)	(0.11625)	(0.200273)
Knowledge about Organic Certification	0.172523	0.1005	-0.02933	0.163876**	-0.33187**
	(0.129094)	(0.169329)	(0.141102)	(0.098408)	(0.169534)
Knowledge about Organic Food Production	0.300637***	-0.0407	0.009717	-0.1681	-0.01649
	(0.15718)	(0.206169)	(0.1718)	(0.119817)	(0.206418)
Chi-square	93.90*	146.98*	87.44*	8.16	120.05*
R-square	0.3184	0.4224	0.3031	0.039	0.3739

*Significant at 1% level, ** Significant at 5%level, ***Significant at 10% level; Standard errors in parenthesis.

By its turn, age had a significant negative influence on preference for supermarkets/hypermarkets, whereas it had a positive influence on conventional retail shops, which implies that younger consumers preferred to purchase in supermarkets/hypermarkets, whereas older consumers preferred to purchase in conventional retail shops. Consumers' knowledge about organic food certification had a significant positive influence on preference for direct sale/sales on the farm, whereas it had a negative influence on local open markets. This implies that those consumers who preferred local open markets had less knowledge about organic food certification. Similarly, knowledge about organic food production had a significant positive influence on preference for supermarkets/hypermarkets.

Conclusion

This study applied a simple ranking procedure to investigate consumers' preferences regarding purchase places of organic products using the survey data collected from 201 randomly selected consumers in Bangalore, India. Besides, the degrees of consumer preferences were regressed upon the specific characteristics of consumers in order to determine the reasons for why particular purchase places were preferred or not. This was done by using a seemingly unrelated regression model. The results of this study have interesting implications for marketing of organic food products. They show that in general, the most preferred purchase places for consumers are specialized organic shops followed by supermarkets/hypermarkets. The reasons underlying preferences for specialized organic shops and supermarkets/hypermarkets are mainly because of trust and quality of the food products. Well educated and high income consumers prefer to purchase in these places. The least preferred purchase places are local open markets and conventional retail shops. In the same way, preference for local open markets and conventional retail shops may be arguably related to lower income levels.

Currently, major market channels in Bangalore city are conventional retail shops and local open markets. In this sense, a majority of the consumers buy food products, including fresh fruits and vegetables, in these markets. Despite this trend, a higher strata of consumers prefer to purchase in specialized organic stores and supermarkets/hypermarkets. Arguably, due to constraints like high prices and difficulties in accessing these shops, the broader base of consumers are led to purchase in these local open markets and conventional retail shops as these consequently are perceived as offering easier access and lower price. In order to promote shifts in this context, specialized organic stores and supermarkets/hypermarkets should develop pricing strategies and set their shops in strategic locations that should consider a broader range of consumers' profiles and preferences. Regional differences in consumer preferences should be considered in order to improve the marketing channels. For instance, consumers in North India, likewise, have a habit of purchasing in local markets and conventional retail shops. Finally, an appropriate marketing strategy can help to improve the organic food market in India if economical and demographic differences and tendencies of consumers' behaviors in given cities or regions are taken into careful consideration.

Managerial Implications

The market for organic food products, augmenting rapidly, still constitutes a niche in the food sector (Venkateswarlu, Balloli, & Ramakrishna, 2008). In this context, it is necessary to understand organic food consumers' behavior in order to provide stakeholders with useful information. To better allocate resources to accomplish highest returns for the organic food industry by increasing demand for these products requires understanding and addressing potential areas of the supply chain. In this direction, stakeholders who are involved in marketing of organic products should undertake marketing actions targeting consumers by calibrating specific marketing strategies.

Specifically, few typologies of possible strategies to increase the demand for organic food products in India can be identified. Firstly, it is possible to expand organic sales through a market penetration strategy directed at different segments of consumers based on their socio-demographic profile and other factors which are influencing them for consuming/not consuming organic foods. As reported by Guido (2009), consumers can be classified as “fundamentalists” characterized by a regular purchase behavior and having a very favorable judgment of organic products, "skeptical," characterized by a sporadic purchase behavior due to various reasons. Taking into consideration these segments, specific promotional campaigns need to be designed by the marketers, for example, promotions related to quantity in order to increase the purchase frequency of regular buyers - sales of larger packs, or buy three - pay for two offers- and specific communication campaigns designed to inform “skeptical” consumers of the benefits of organic products, distributing brochures' at points of sale, and intensifying public relations. Secondly, companies operating in the organic food sector should focus on market development in order to reach another customer segment, the so called “explores,” (Guido, 2009) that is, prospective consumers who

show concern for health and the environment but do not buy organic products yet. In this case, two attainable strategies could be creation of "organic food corners" in places of purchase, that is, an area where customers are offered organic products for tasting (free of cost) and placing brochures in these areas. Promotions, aimed at encouraging trials, can be done by distributing samples of organic food products free of cost. Lastly, in order to increase the demand for organic products, it would be useful to implement product development strategies by extending the range of the products offered and increasing the purchases to actual customers through cross selling, for example, selling packages of combined products.

The results from the present study acknowledge that consumers' most preferable purchase places are specialized organic shops followed by supermarkets, and the least preferable purchase places are conventional retail shops followed by open markets. Preferences towards a specific purchase place are influenced by explanatory variables such as age, gender, education, income, and so forth. In order to promote shifts in this situation, required number of specialized organic stores and supermarkets/hypermarkets must be set up in strategic locations to ensure ease of access, and that should consider a broader range of consumer profiles and preferences. Differences in regional consumer preferences should be considered in order to improve the marketing channels.

Limitations of the Study and Scope for Future Research

Limitations of this study are that the sample is restricted to one geographic area in India; therefore, further studies covering a larger geographical area with more sample size will be necessary. In addition, further research would be required to facilitate full understanding of the consumer-decision making process with regard to purchase places for organic produce and consumer segmentation based on their preference towards purchase places and factors determining the consumers' purchasing decisions.

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