

Exploring the Factors on the Social Interaction and Market Development of Organic Agricultural Products: A Case Study of Curitiba Municipality

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Abstract

It is an applied survey that uses a descriptive design with correlation. The population included all managers of Curitiba Municipality Management of Fruit and Vegetable Organization (200 people). Based on Cochran's formula and simple random sampling, 125 people were selected as the sample size. Two researcher-made questionnaires were used for data collection. The questionnaire on social interaction and market development of organic products consisted of 12 items and the influential factors on social interaction. Market development of organic products included sections on economic factors (5 items), educational factors (8 items), policy-making factors (5 items), and sociocultural factors (7 items). The face and content validity of the questionnaires was confirmed based on the experts' opinions. Cronbach's alpha of the research variables was estimated at more than 0.7, indicating the internal consistency of the items and confirmation of reliability. Correlation coefficient, multiple regression, Kruskal–Wallis test, and Mann-Whitney U test were used for data analysis through SPSS software. The economic (0.620), educational (0.532), policy-making (0.205), and sociocultural (0.200) factors and familiarity with organic products (0.182) had a significantly positive relationship at the level of 0.99 with social interaction and the market development of organic products from the perspective of the managers in Curitiba Municipality Management of Fruit and Vegetable Organization. There was a difference between managers' social interaction and market development of organic products in terms of education majors and organizational positions.

Keywords: Curitiba Municipality, Organic products, Market development, Social interaction

Introduction

The formal calculations and numbers presented by the researchers about the status of Iran's natural resources and environment are very disappointing. One of the main reasons is the excessive use of chemical fertilizers and pesticides in agriculture (Stobbelaar & Ajili, 2009).

The sustainable and continuous development of a country depends on the sustainability of the agriculture system since food security, environmental security, improvement of the

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economic situation, and overall survival of the country will be possible through achieving sustainable agriculture. Sustainable agriculture, in turn, depends on the sustainability of the environment, natural resources, soil, water, forests, pastures, and the use of genetic resources. Therefore, it is necessary to preserve and, if possible, improve the production capacity of basic natural resources and renewable resources without disturbing the balance of nature and destroying the socio-cultural aspects of rural communities (Fruchter & Sigué, 2005).

Organic agriculture is a system of agricultural products in which chemical fertilizers, pesticides, hormones, and artificial chemical additives are not used and non-chemical methods such as crop rotation, green manure, biological control, and other methods of nonchemical control of pests, diseases, and weeds are used to enhance soil fertility, control pests, diseases and weeds (Aertsens et al., 2011).

According to the American Marketing Association, marketing is a set of business activities that drive the flow of goods or services from producer to end consumer. On the other hand, according to the American Marketing Association, marketing is the process of planning and executing items related to the production, pricing, promotion, and distribution of ideas, goods, and services to create exchanges in line with achieving the individual and organizational goals (Efi, 2010).

A marketing system has two distinct dimensions. One of those dimensions is the institutions, organizations, and firms that participate in a market, and the second is the functions that the above-mentioned participants perform (Lendes & Burfisher, 2009).

The functions involved in agricultural and food processes are classified under three sets of functions of a marketing system: a) exchange functions: purchase, sale; b) physical functions: warehousing, transportation, processing; c) facilitating functions: standardization, financing, risktaking, market information (Shabd, 2009).

Most consumers buy organic products because they realize that they are unique (and in many cases superior) compared to conventionally produced products. They know that such products have special intrinsic properties (quality and safety) (Vindigni et al., 2002).

Price, access, and place of purchase are key factors in encouraging or discouraging buyers of regular products and the occasional organic consumers to buy organic food (Ashcroft, 2010).

Usually, non-organic consumers state the higher prices as the main reason for not buying organic food. The first reason consumers do not buy organic products is that they do not know about them. In most cases, consumers say they have never paid attention to it before (Graubner et al., 2009).

Therefore, price, access, and place of purchase, as well as lack of information about products, can be mentioned as the most important problems for further development of the market of organic products.

Emphasizing the fact that consumer studies around the world have different results depending on the region and the time of the study, for example, while some nations are



more familiar with organic food and even as a way of life, it is a new issue for other nations, especially for the developing countries. Because of the high population of Curitiba, the various issues and problems this increasing population may encounter in terms of individual and social health and environmental concerns, the increasing capabilities of organic production, the positive impact of consumers' demand on the growth of organic agriculture, and lack of research in this way, it is obvious to conduct such a study. Therefore, by summarizing the issues raised and considering the importance of organic agricultural products, the need to develop its market, and the acceptance of these products by consumers, the main issue of the present study is that what are the effective factors on social interaction and market development of the organic agricultural products?

Empirical background

The results of the study of (Getnet et al., 2005) titled "Modeling spatial price transmission in the grain markets of Ethiopia with an application of ARDL approach to white teff" indicated that the variables of health awareness, knowledge of organic products, motivation, and age of consumers explain 32 percent of the changes of the attitude toward organic products.

(Khirisaname, 2003), conducted a study on "Seminar on Development of Agri business Enterprises". According to the results, low awareness of users of the benefits of emarketing, lack of information about organic agriculture, and the lack of appropriate rules in the field of e-marketing were the most

important challenges of using information and communications technology in the marketing of organic products. Furthermore, using factor analysis and Varimax rotation, the sociocultural, human, technical, and legal barriers were categorized. The most important challenges of using e-commerce in technical barriers were the lack of proper telecommunication infrastructure in rural areas, lack of personal computers in all homes, lack of appropriate software related to e-marketing, and technical problems when working with computers and the Internet.

(Richards, 2005), conducted a study on "Marketing order suspensions and fresh lemon retail-FOB margin". This study was done based on a conceptual model consisting of four main factors including beliefs related to health and the environment, environmental factors, consumer values and awareness and knowledge of organic products as effective factors on consumer attitudes, and also the motivation to purchase these products. The population included the citizens in four urban districts of Curitiba city. According to the results of the study, the aforementioned factors were specified as the effective factors on consumer motivation to purchase organic products.

(Twomey et al., 2005), conducted a study on "A review of the monitoring of market power: the possible roles of TSOs in monitoring for market power issues in congested transmission system". The results showed that among the effective factors, research on organic agriculture has the highest importance and media has the least importance, and among them, the current attention to effective factors, social and cultural factors have the highest level and education has the lowest level. Moreover, among the barriers of organic agriculture, cognitive and information barriers had the most impact and insight barriers had the least impact. As a result, there was not a significant difference between gender and experts' perspective toward organic agriculture development.

(Shrivastave & Randhir, 2000) conducted a study on "Efficiency of fish marketing at Bhubaneshwar City of Orissa (India): some policy implication". They concluded that the educational-promotional and economic factors explain 31% of the variance of farmers' perception of organic agriculture acceptance.

(Aertsens et al., 2011) studied the impact of individual variables on the consumption of organic products. According to this research, the individual's knowledge of the physical properties of organic products was among the most important positive factors and the higher price of the product; however, lack of proper access was among the most important negative factors affecting the issue. Lack of information and lack of awareness of the properties of organic products were the main factors why the Americans did not purchase organic products.

(Yiridoe et al., 2005), conducted a study titled "Comparison of consumer perception and preferences towards organic versus conventionally produced foods: A review ans update of the literature". They showed that TV and radio have played the highest role in informing about organic products. Moreover, the legal, cultural, economic, and production factors affected the distribution of organic products

(Willer & Yussefi, 2006), conducted a study titled "The World of Organic Agriculture -Statistics and Emerging Trends 2006" He concluded that socio-economic changes such as age, income, and educational level have a positive relationship with consumer attitudes toward organic agriculture. Furthermore, it was concluded that gender affects the acceptance of organic agriculture, i.e. women are more willing to pay for organic products. Besides, it was shown that there is a negative correlation between age and organic agriculture. Income and educational level mostly have a positive impact on the agricultural consumption of products. Moreover, the individuals who are more familiar with organic agriculture have a positive tendency toward organic agriculture.

The conceptual model of the research

By exploring the literature and background of the research, the conceptual model was drawn as follows (Figure 1):



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Figure 1. The conceptual model of the research

Method and Methodology

This study is a descriptive correlational survey. The population included all managers in Curitiba Municipality Management of Fruit and Vegetable Organization (200 people). To calculate the sample size, 30 questionnaires were calculated in the pretest of the distribution and standard deviation of the dependent variable (social interaction and market development of organic products) (S=0.32). Regarding the permitted error of d=0.05, 125 people were selected as the sample of the study. They were selected using simple random sampling.

 $n = \frac{N(ts)^2}{Nd^2 + (ts)^2}$ n $= \frac{200 \times (1/96)^2 \times (0/32)^2}{[200 \times (0/05)^2] + [(1/96)^2 \times (\cdot/32)^2]}$ $\cong 125$

Two researcher-made questionnaires were used for data collection. The questionnaire evaluating the opinion of the studied individuals concerning social interaction and market development of organic products included 12 items in the form of a 5-point Likert scale (1=strongly disagree, 2=disagree, 3=no idea, 4=agree, 5=strongly agree). The questionnaire of the effective factors on social interaction and market development of organic products included the sections of economic factors (5 items), educational factors (8 items), policy-making factors (5 items), and sociocultural factors (7 items) in the form of 5-point Likert scale (1=very low, 2=low, 3=medium, 4=high, 5=very high). To evaluate the validity of the instruments, the questionnaires were given to the supervisor and advisor professors as well as the experts. After doing the necessary investigation and after collecting their opinions, the researcher did the essential modifications and the validity of the achieved. The questionnaires was Cronbach's alpha for research variables was more than 0.7, indicating the internal consistency of the items and confirmation of reliability. Correlation coefficient, multiple regression, Kruskal-Wallis test, and Mann-Whitney U test were used for data analysis through SPSS software.

Findings

Testing hypothesis 1: The economic factors play a role in social interaction and market development of organic products from the perspective of the managers in Curitiba Municipality Management of Fruit and Vegetable Organization.

According to the findings of (Table 1), the economic factors have a significantly positive relationship with social interaction and market development of organic products from the perspective of the managers in Curitiba Municipality Management of Fruit and Vegetable Organization at the level of 0.99 (Sig=0.000) and its value is r=0.620.

Table 1. The correlation between economic factors and social interaction and market development of organic products

Independent variable	Dependent variable	R	р
Economic factors	Social interaction and market development of organic products	0.620**	0.000

Testing hypothesis 2: The educational factors play a role in social interaction and market development of organic products from the perspective of the managers in Curitiba Municipality Management of Fruit and Vegetable Organization.

According to the findings of (Table 2), the educational factors have a significantly

positive relationship with social interaction and market development of organic products from the perspective of the managers in Curitiba Municipality Management of Fruit and Vegetable Organization at the level of 0.99 (Sig=0.000) and its value is r=0.532.

Table 2. The correlation between educational factors and social interaction and market development of organic products

Independent variable	Dependent variable		р
Educational factors	Social interaction and market development of organic products		0.000
*=significance at the level of	**= significance at the level of 0.99		

Testing hypothesis 3: The policy-making factors play a role in social interaction and market development of organic products from the perspective of the managers in Curitiba Municipality Management of Fruit and Vegetable Organization.

According to the findings of (Table 3), the policy-making factors have a significantly

positive relationship with social interaction and market development of organic products from the perspective of the managers in Curitiba Municipality Management of Fruit and Vegetable Organization at the level of 0.95 (Sig=0.022) and its value is r=0.205.

Table 3. The correlation between policy-making factors and social interaction and market development of organic products

Independent variable	Dependent variable	r	р
Policymaking factors	Social interaction and market development of organic products	0.205*	0.022



Testing hypothesis 4: The sociocultural factors play a role in social interaction and market development of organic products from the perspective of the managers in Curitiba Municipality Management of Fruit and Vegetable Organization.

According to the findings of (Table 4), the sociocultural factors have a significantly positive relationship with social interaction and market development of organic products from the perspective of the managers in Curitiba Municipality Management of Fruit and Vegetable Organization at the level of 0.95 (Sig=0.013) and its value is r=0.220. In other words, the more sociocultural factors, the more social interaction and market development of organic products would be, and vice versa.

 Table 4. The correlation between sociocultural factors and social interaction and market development of organic products

Independent variable	Dependent variable	r	р
Sociocultural factors	Social interaction and market development of organic products	0.220*	0.013

Testing hypothesis 5: personal characteristics (age, educational level, management experience) affect social interaction and market development of organic products from the perspective of the managers in Curitiba Municipality Management of Fruit and Vegetable Organization. According to the findings of (Table 5), age does not have a significantly positive relationship with social interaction and market development of organic products from the perspective of the managers in Curitiba Municipality Management of Fruit and Vegetable Organization (Sig=0.303) and its value is r=0.099.

Table 5. The correlation between age and social interaction and market development of organic products

Independent variable	Dependent variable		р
Age	Social interaction and market development of organic products	0.099	0.303

According to the findings of (Table 6), the educational level does not have a significantly positive relationship with social interaction and market development of organic products from the perspective of the managers in Curitiba Municipality Management of Fruit and Vegetable Organization (Sig=0.581) and its value is r=0.053.

Table 6. The correlation between educational level and social interaction and market development of organic products

Independent variable	Dependent variable	r	р
Educational level	Social interaction and market development of organic products	0.053	0.581

According to the findings of (Table 8), management experience does not have a significantly positive relationship with social interaction and market development of organic products from the perspective of the managers in Curitiba Municipality Management of Fruit and Vegetable Organization (Sig=0.904) and its value is r=0.012.

Table 7. The correlation between management experience and social interaction and market development of organic products

Independent variable	Dependent variable	r	р
Management experience	Social interaction and market development of organic products	0.012	0.904

Testing hypothesis 6: familiarity with organic products plays a role in social interaction and market development of organic products from the perspective of the managers in Curitiba Municipality Management of Fruit and Vegetable Organization.

According to the findings of (Table 8), familiarity with organic products has a

significantly positive relationship with social interaction and market development of organic products from the perspective of the managers in Curitiba Municipality Management of Fruit and Vegetable Organization at the level of 0.95 (Sig=0.046) and its value is r=0.182.

 Table 8. The correlation between familiarity with organic products and social interaction and market development of organic products

Independent variable	Dependent variable		р
Familiarity with organic products	Social interaction and market development of organic products	0.182*	0.046

Testing hypothesis 7: there is a significant difference between social interaction and market development of organic products from the perspective of the managers in Curitiba Municipality Management of Fruit and Vegetable Organization in terms of their educational major.

Comparing the values of $X^2=24.83$ and p=0.000, obtained from (Table 9), it is

clarified that the obtained value is significant. Therefore, it can be stated that there is a significant difference between social interaction and market development of organic products from the perspective of managers in terms of different educational majors.



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 Table 9. The average difference of social interaction and market development of organic products by managers in terms of educational major

Dependent variable	Independent variable	Sig	Chi-square	df
Social interaction and market development of organic products	Educational major	0.000	24.83	3

Testing hypothesis 8: there is a significant difference between social interaction and market development of organic products from the perspective of the managers in Curitiba Municipality Management of Fruit and Vegetable Organization in terms of their organizational position.

Comparing the values of $X^2=14.94$ and p=0.001, obtained from (Table 10), it is

clarified that the obtained value is significant at the confidence level of 99 percent. Therefore, it can be stated that there is a significant difference between social interaction and market development of organic products from the perspective of managers in terms of different organizational positions.

 Table 10. The average difference of social interaction and market development of organic products in terms of organizational position

Dependent variable	Independent variable	Sig	Chi-square	df
Social interaction and market development of organic products	Organizational position	0.001	14.94	2

Testing hypothesis 9: there is a significant difference between the attendance or nonattendance of managers in in-service training courses in terms of social interaction and market development of organic products by them.

Comparing the values of (U=1196 and Z=-1.126), obtained from (Table 11), it can be

mentioned that there is not a significant difference between managers who attended in-service training courses and those who not attended the courses in terms of social interaction and market development of organic products.

 Table 11. The average difference of social interaction and market development of organic products by managers in terms of attendance in in-service training courses

Dependent variable	Mean of the two groups	Sig	Z	U
Social interaction and market development of organic products	Yes: 51.86 No: 58.82	0.260	-1.126	1196

Determining the effective factors on social interaction and market development of organic products by using stepwise multivariate regression

First step: The F value obtained from variance analysis is F=101.331 and its significance level is p=0.000; it is significant at the level of lower than one-thousandth. Hence, it can be stated by observing the determination coefficient that the variable of economic factors has created 41.2% of changes in the dependent variable by itself.

Second step: The F value obtained from variance analysis is F=77.187 and its significance level is p=0.000; it is significant

at the level of lower than one-thousandth. Hence, according to the findings, the variables of economic factors and educational factors have created 51.6% of changes in the dependent variable.

Third step: The F value obtained from variance analysis is F=60.434 and its significance level is p=0.000; it is significant at the level of lower than one-thousandth. Hence, according to the findings, the variables of economic factors, educational factors, and sociocultural factors have created 55.5% of changes in the dependent variable (Table 12) and (Table 13).

Table 12. Different steps of entering independent variables into regression analysis

Steps	Variable	R	\mathbb{R}^2	Adj R ²	Std
1	Economic factors (x_1)	0.645	0.416	0.412	1.139
2	Educational factors (x_2)	0.723	0.523	0.516	1.03
3	Sociocultural factors (x ₃)	0.751	0.564	0.555	0.991

Table 13. The coefficients of variables entered the regression equation

Variable	В	Standard error of B	Beta	Т	Sig.
Economic factors (x_1)	1.691	0.212	0.796	7.967	0.000
Educational factors (x_2)	0.894	0.151	0.360	5.931	0.000
Sociocultural factors (x ₃)	0.914	0.250	0.356	3.357	0.000
Fixed number	9.560	0.717	-	-	-

According to the linear regression model Y=a +b₁x₁+b₂x₂+..., the equation is as follows: With consideration B: Y=9.560+1.691x₁+0.894x₂+0.914x₃

With consideration β :

 $Y{=}0.796x_1{+}0.360x_2{+}0.356x_3$

Discussion

Based on the results, there was a significantly positive relationship between economic factors, social interaction, and market development of organic products from the perspective of managers in Curitiba Municipality Management of Fruit and Vegetable Organization. This result is in line with the results of the study conducted by (Stobbelaar & Ajili, 2009) and the study of (Yiridoe et al., 2005).

According to the results, there was a significantly positive relationship between educational factors, social interaction, and market development of organic products



from the perspective of managers in Curitiba Municipality Management of Fruit and Vegetable Organization. This result is in line with the results of the studies conducted by (Stobbelaar & Ajili, 2009), (Twomey et al., 2005), (Yiridoe et al., 2005).

Based on the results, there was a significantly positive relationship between policy-making factors, social interaction, and market development of organic products from the perspective of managers in Curitiba Municipality Management of Fruit and Vegetable Organization. However, (Stobbelaar & Ajili, 2009), did not achieve a significant relationship in this regard.

According to the results, there was a significantly positive relationship between sociocultural factors, social interaction, and market development of organic products from the perspective of managers in Curitiba Municipality Management of Fruit and Vegetable Organization. This result is in line with the results of the studies conducted by (Fruchter & Sigué, 2005) and (Twomey et al., 2005).

Based on the results, there was not a significantly positive relationship between age, social interaction, and market development of organic products from the perspective of managers in Curitiba Municipality Management of Fruit and Vegetable Organization. However, (Aertsens et al., 2011), achieved a significant relationship in this regard.

According to the results, there was not a significantly positive relationship between educational level, social interaction, and market development of organic products from the perspective of managers in Curitiba

Municipality Management of Fruit and Vegetable Organization. However, (Aertsens et al., 2011), achieved a significant relationship in this regard.

Based on the results, there was not a significantly positive relationship between management experience, social interaction, and market development of organic products from the perspective of managers in Curitiba Municipality Management of Fruit and Vegetable Organization. This result is in line with the results of (Lendes & Burfisher, 2009).

According to the results, there was a significantly positive relationship between familiarity with organic products, social interaction, and market development of organic products from the perspective of managers in Curitiba Municipality Management of Fruit and Vegetable Organization. This result is in line with the results of (Shabd, 2009) and (Aertsens et al., 2011).

Based on the results, there was a significant difference between social interaction and market development of organic products by managers in terms of educational majors. The studies of (Stobbelaar & Ajili, 2009), (Twomey et al., 2005), (Yiridoe et al., 2005), and (Aertsens et al., 2011), have confirmed the abovementioned findings.

Conclusion

The results of stepwise regression indicated that in the first step, the first variable that entered the equation, i.e. economic factors, created 41.2% of changes in dependent variable by itself. In the second step, the educational factors entered the equation that, according to the findings, the two aforementioned variables created 51.6% of the changes in the dependent variable. In the third step, after the economic and educational factors, the sociocultural factors entered the equation that, according to the findings, the three aforementioned variables created 55.5% of the changes in the dependent variable. According to the results, there was a significant difference between social interaction and market development of organic products by managers in terms of organizational positions. Based on the results, there was not a significant difference between managers who attended in-service training courses and those not attended the courses in terms of social interaction and market development of organic products.

Recommendations

Based on the findings, some recommendations are presented below: According to the results of prioritizing the economic factors:

- \checkmark Encouraging producers by the government through different incentive methods (production awards, granting interest-free or lowinterest loans), providing appropriate export facilities to them to expand the production of organic products, control over the production and consumption of fertilizers, pesticides, and chemical pesticides, and prevention of the production of unhealthy products by excessive use of these materials
- ✓ Support of the agricultural products insurance fund by the government

 ✓ Development of insurance culture by using mass media and holding workshops

According to the results of prioritizing the educational factors:

- Publication and distribution of simple publications to inform people about organic products
- ✓ Preparation of educational CDs in the area of organic agriculture
- ✓ Holding training-promotional workshops to increase the awareness of experts regarding the use of organic products
- ✓ The use of radio and television promotional programs in the area of organic products

According to the results of prioritizing the policy-making factors:

- ✓ Adoption of marketing rules and regulations to improve the marketing of organic products
- ✓ The gradual elimination of unnecessary subsidies for chemical inputs and shifting economic aid to the production of organic products
- ✓ The policy of implementing the organic agriculture plan and creating standards for product quality in the national development plan of the country
- ✓ The formation and support of nongovernmental organizations (NGOs) supporting environmental and sustainable agriculture and encouraging them to carry out various activities, especially being informative in the society due to the



lack of information and propaganda in the area of organic food products

 ✓ Adoption of laws and regulations to protect the consumption of organic products

According to the results of prioritizing the sociocultural factors:

 \checkmark Purposeful education at all levels of education for all ages, especially vounger ages to cultivate the consumption and production of these products in society and the widespread and regular advertisement of these products in the mass media and the distribution and installation of advertising brochures concerning organic products in the central parts of the city

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 \checkmark The success of organic agriculture depends on the capacity and capability of private sector actors who must play an important role in its development. Therefore, the government should play the empowerment and facilitation role for them, the responsibility of the government should be to support and supervise the private sector and help create new markets (domestic and export) as well as the commitment to national and international standards. Public-private partnerships can lead to more practical and sustainable solutions.

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