Factors influencing Consumers' attitude towards organic agricultural products

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Abstract:

Organic farming has a vital role in sustainable development and the main factor in the organic farming development is consumers demand and attitudes determine the demand. Thus the aim of this study is to determine the factors influencing consumers' attitudes toward organic agricultural products. The study in functional with correlation method. Cronbach's alpha coefficient of the questionnaire between 0.7 to 0.8, was calculated. The population includes those people who consume at least one group of organic product (horticultural, vegetables, livestock, dairy and crops). Due to the fact that the total amount of population society is a function of time first, a statistical model to determine sample size was presented and according to Cochran formula, 124 subjects were selected by simple random sampling. Results of regression analyzes indicated that the variables of health awareness, knowledge of organic products, consumers' motivations and age, explained 32 % of the changes in attitude about organic products.

Key words: attitude, consumption, organic agricultural products

1. Introduction

As increasing global population, after providing food production needs of human society, food safety is an applied word that are discussed in the development of evidence. Food safety means making sure that people use food as a whole the food be healthy and free of any contamination. This contamination can include bacterial infections, parasitic or chemical. Scientific studies show that, in recent decades with the development of technology and the increased use of additives, pesticides, antibiotics and hormones in food production in developing countries, undeniably harmful effect on human health has emerged (Chaichi, 2009).

Incidence of birth defects, low birth weight, miscarriage, premature or delayed puberty, reduced fertility or infertility, changes in the rate of metabolism, endocrine disorders, muscle weakness, memory loss, damage to the nervous system and brain, reduced efficiency of the immune system remains are among negative effects of chemical composition of agricultural and livestock products (Chaichi , 2009). In this regard, access to healthy food in order to achieve a dynamic life a particular importance is given to the quality of food products (Shafikhani and Abbaszadeh, 2008).

This issue is a global issue, which developing countries, 13 % higher than other countries, have been affected by the problems. Thus, in developing countries each year 5/1 million children under five years suffer from disease symptoms caused by toxic substances and chemical residues in food, more than 3 million people lost their lives (Moradi and Najaf Abadi, 2011) and high economic burden to their country. Among them Iran has not been free from the adverse effects of industrial agriculture, to the extent that in 2010 the World Health Organization 's declared rank 93 for Iran between world countries.

The main cause of this issue is malnutrition and lack of optimal use of fertilizers, pesticides and hormones on farms and their remained effects and combinations in agricultural products. High rate of cancer, especially cancers of the gastrointestinal tract in Iran compared with other countries is related to the presence of cadmium and nitrate levels higher than the international standard in crops and vegetables. Because 80 percent of the fertilizer used in Iran agriculture are fertilizers urea and phosphorus (Chaichi, 2009).

Now after dealing with environmental, economic, social effects of industrial agriculture, sustainable and healthy food production is more vital than at any time. For food production in developed countries, organizations and special policies are formed. These organizations have selected organic farming as a solution to the problems of industrial agriculture. As defined by the International Federation of Organic Agriculture Movements (IFOAM), organic farming is an agricultural system in which aspects of biological, social, economic and sustainable production of food, clothing, wood products, etc. improved. In this system, soil fertility is considered as a successful production. In organic farming applying natural properties of plants, animals and the environment, agriculture and environmental quality system is maintained and improved (IFOAM, 2008).

According to the latest survey of the International Federation of Organic Agriculture Movements(IFOAM) and Research Institute of Organic Farming , it is certified about organic farming organic in the world , statistical information on organic agriculture is accessible by the end of 2009 in 160 countries that Iran is within last ranks of the table (Willer, 2011).

One of the major factors affecting agricultural production is consumer demand (Mohammadian, 2011). Developed countries by creating awareness and knowledge of safety, health and

environmental issues, have provided the basis for consumer demand (Rehber & Turhan, 2002). But ignoring Iranian consumers regarding the importance of consumption organic products to human health caused organic products have no place in the food basket, while in many cases we see the organic products of Iran is bought with the developed countries at cheap value and selling them at high prices in global markets(Ajoodani , 2010).

For example, in 2010 about one thousand and three hundred Qazvin organic raisins were exported to Germany and France for this reason that the price of organic products is three to four times more than conventional products and the domestic market for has not elasticity for organic products(Qazvin Agriculture Jihad , 2011). Some experts believe that the lack of awareness of organic products and because these products are more expensive than non- organic products are main factors effective in the lack of acceptance of organic products in the agricultural and animal products (Ajoodani , 2010).

Based on the studies in this field , general characteristics (Sangkamchaliang & Chi-Huang, 2012), knowledge of knowing organic products (Rajabi et al. , 2011 ; Ajoodani , 2010 ; Ghorbani et al. , 2009 ;; Kwan Yi, 2009 Armstrong & Kotler 2007) , environmental concerns (Kumar & Ali, 2011; Sitinor & Nurita, 2010; Kwan yi, 2009; Zakowska-Biemans, 2007), health awareness(Mahmoudi et al. , 2008; Kumar & Ali, 2011; Kwan yi, 2009), taste (Brown et al., 2009; Radman, 2005) and motivation (Peter, 2010), are the factors influencing attitude of consumption of organic products.

Considering the fact that scholars of social psychology, know the study of approach vital to understand social behavior and as crucial factor to understand the determinants of behavior change in attitude. Also considering the fact that there is no unique and same way of developing

a policy that would apply to all communities and in various social and economic conditions they are beneficiaries and innovators who will have a major role in formulating policies (Vairo, ET. Al., 2007).

Emphasis on the fact that studying consumers around the world will have different results depending on the region and time of the research and for example, while some people are more familiar with organic food and even if it were accepted as a way of life, for other nations, especially the developing countries this is a new issue (Mutlu, 2007). Also aimed to better protection of consumers from harmful substances in the production of conventional and organic production of agricultural fake and directed more towards organic farming, recognizing community behavior is important.

Due to the size and population of Tehran and the issues and problems that this growing population leads to personal health aspect and social and environmental concerns and the increasing potential of organic production and positive impact of consumer demand on organic agricultural growth on the other hand, and the lack of such a study in this way, the importance of this research is evident.

The purpose of this study was to investigate the influence of consumers' attitudes and behavior of organic agricultural products in Tehran. In order to achieve this overall goal, **1. Identify the general characteristics of consumers of organic agricultural products. 2. Investigating effect of organic products knowledge on consumers' attitudes toward organic agricultural products. 3. Investigating effect of health awareness on consumers' attitudes toward organic agricultural products. 4. Investigating effect of environmental concerns on**

consumer attitudes toward organic agricultural products as the objectives of the study were developed and studied.

2. Material and methods

Since the purpose of the study is to investigate the factors influencing consumers' attitudes toward organic agricultural products, this research based on the objective, is applied research, and based on data collection of descriptive. The main research tool was standard questionnaire (Questionnaire of consumption of organic products), which according to the specific cultural and regional conditions was reformed and coordinated. The questionnaire consisted of four sections. The first by 8 item analyzes the purchase behavior. The second part namely the dependent variable (attitudes toward organic products) are measured with 7 items.

The third part consists of 40 items that aim to assess health awareness , environmental concerns and the main motivation of consumers of organic products affecting the attitudes of consumers of organic products (in the range 5 -point Likert-type , after sum, expressions measured at the distance level) and knowledge of organic products (in the form of correct and incorrect). The fourth part of the questionnaire included individual characteristics of the respondents. To assess the validity of research means, in addition to the standard being, the questionnaire presented to the experts that after performing the necessary checks and collect their comments and reform the validity, the questionnaire have been obtained. To achieve reliability of study tools the preliminary test was conducted. After extracting data, Cronbach's alpha coefficient was calculated for each section. Cronbach's alpha coefficient of the questionnaire was between 0.7-0.8, respectively, which is indicative of the validity of this tool.

The target population for this study included those who consumed for at least one group of the horticultural, vegetables, livestock and organic dairy crops. The total studied population society is a function of the total volume, i.e. studied society is an open society. First, a statistical model presented to determine sample size for a given amount of data. Appropriate model, yet simplest statistical model is a homogeneous Poisson process. To assess the suitability of this random process to the population size, at first the population size is measured for 22 days. Kolmogorov - Smirnov test has confirmed the suitability of the Poisson process. Because one wanted to biopsy in 12 days (3 days in four weeks a month). A random sample of 12 specimens of the Poisson process is generated then, using Cochran formula, 124 subjects were selected as samples using simple random sampling.

Independent variables included gender, age, marital status , education level, income level, presence or absence of children in the family, health awareness (a concern about residues of pesticides, additives and preservatives in food, drinking water quality, attention the labeling of organic products, scientific research in the field of health , consuming healthy fresh foods, balanced diet) , environmental concerns (due to energy conservation, multiple use of glass and metal packaging, the use of all paper space, wet and dry waste separation, use purchasing basket, giving old electrical devices to charity centers) , knowledge of organic products(organic products consumption reduce eczema, asthma and food allergy, organic produce is fresher, genetic modification has been used in organic products, organic products are free of growth hormones and antibiotics, organic product is a natural product, in organic agriculture human feces are used as fertilizer, organic products are free of genetically modifies), the main consumption of consuming organic products (self and family health, trust obtained from standard proof, considering \ the health and welfare of animals, good taste , more freshness of

organic products, conserve resources for future generations, interest for living more), knowledge of understanding labeling of organic products (Iran Organic Forum Tag, Tag of Agriculture Parliament of the United States , Europe Union organic Tag, Tag of Organic Soil Association of UK) and barriers affecting the consumption of organic products (organic products look bad, lack of access, lack of diversity, high cost, the problem of identification of organic products, organic products dedicated to specific seasons, lack of information on radio and television, lack of information in newspapers and lack of information in daily fruit and vegetable market).

The dependent variable is of the attitude of consumers of organic products with indicators (rate of interest to organic product consumption, due to the lack of preservatives and chemicals, the safety of the consumer, better quality , more healthiness, better taste, and the environmental interests of consumption of organic products) were measured using a Likert scale of 5 categories. The average score of the responses given to identify the attitude of the respondents and after sum, the terms measured in the distance levels.

To analyze the collected data, software SPSS16 was used. In descriptive statistics terms average, mean, median, coefficient of variation and in inferential statistical methods of correlation and regression analysis were used.

3. Results

The results of descriptive statistics on consumers' buying behavior of organic products showed most respondents with frequency 33.1 %, 1-2 times a week (meaning a regular and continuous consumption of organic products) consume organic products. Also, 50 percent of respondents last year for the first time have consumed organic products. The results showed that the familiarity of the consumer with organic products. Most respondents with abundance of 33.9

percent mentioned their familiarity with the organic products organic at fruit and vegetables market. The results of descriptive statistics on the demographic characteristics of consumers of organic products showed that most respondents were female, with a frequency of 54.8 and 45.2 percent were men.

Investigate the age of the respondents indicated that their average age is 44 years. Study marital status showed that the highest prevalence rate was related to married people with 83.9 percent. The level of education of respondents indicated that the highest frequency related to diploma with frequency 35.5 and the lowest frequency with the frequency of 0.8 percent related to illiterates. The employment status of the respondents indicated the highest frequency related to housewives with frequency of 32.3 and retired people with the lowest frequency of 15.3 percent. Head of the household income survey showed the average income of the subjects is 15600000 Rials.

Investigate the relationship between absence and presence of children in the family and the family's attitude towards organic products represent the most frequent subjects 74.2 percent. In age of children, the highest frequency related to individuals with children less than 10 years with a frequency of 34.7 percent. To measure the level of consumer attitudes towards organic products of 7 items were used in the form of Likert scale.

To measure consumers attitudes to organic products (very low : 1 , Low: 2 Medium: 3 High :4 , very high: 5), the lowest and highest points for an answer are 7 (1×7) and 35 (5×7) is. After re- encoding scores points (7-12) are very opposite (13-18) opposite (19-24) medium (25-30) agree and very agree (31-35) were classified. The findings suggest that the majority of respondents (59/7 %) investigated their attitude towards organic products as agree (Table 1).

Table 1: consumers' attitudes toward organic agricultural products

	Frequency	Percent	cumulative percent
medium	8	6/5	6/5
agree	74	59/7	66/1
very agree	42	33/9	100
total	124	100	

The results of Pearson correlation analysis between variables show among consumers age and their attitude towards the consumption of organic products there is a significant negative relationship existed at the 1% level. Income level of consumers with their attitudes towards the use of organic products a significant positive relationship existed at the level of 5%. The results of this study show among organic products knowledge and health awareness, motivation and attitude of consumers of organic products there was a significant positive correlation at the level of 1% (Table 2).

Table 2: The relationship between the variable and consumers attitude of organic products

Variable		r	Sig
age	Consumer attitudes toward organic products	$-0/253^{**}$	0/005
Income level		$0/214^{*}$	0/017
Health awareness		$0/395^{**}$	0/000
Environmental concerns		$0/084^{ns}$	0/354
motivation		$0/346^{**}$	0/000
organic products knowledge		$0/394^{**}$	0/000

Multiple regression was used to predict the attitudes of consumers of organic products. It should be noted that the stepwise regression method was used to obtain equation. After entering all variables with significant correlation (health awareness, knowledge of knowing organic products, main motivation for consumption, and organic products consumers' ages,) variables, health awareness, , knowledge of knowing organic products, the main motivation of consumers of organic products and consumers' age remained in the equation. These variables explained 32% of variability of variable of the attitude of consumers of organic products.

Health awareness variable with a value of R2= 0.14 is the most important variable influencing the attitudes of consumers of organic products. So that this variable lonely explained 14% of variability of dependent variable (Table 3).

Table 3: Regression results for organic products consumers' attitude

Steps	R	R Squar	Adjusted SquareR	Std Error of the Estimate
Health awareness x_1	0/395	0/156	0/149	**3/03155**
organic products knowledge x_2	0/500	0/250	0/238	**2/86928**
main motivation for consumption x_3	0/558	0/311	0/294	**2/76211**
consumers' ages x_4	0/585	0/343	0/321	**2/70903**

The significance of the regression is calculated using F that in level 99% (sig-0.000) is significant. According to Table (4) t-tests of the regression coefficients indicates that the coefficient is statistically significant.

Table 4: Standardized. And Unstandardized Coefficients

Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
constant	14/822	3/416	....	4/339	**0/000**
Health awareness x_1	0/185	0/064	0/244	2/906	**0/004**
organic products knowledge x_2	0/899	0/219	0/318	4/105	**0/000**
main motivation for consumption x_3	0/237	0/93	0/213	2/551	**0/012**
consumers' ages x_4	-0/044	0/018	-0/186	-2/398	**0/018**

Based on regression values of B equation can be written as follows:

Y=14/822+ 0/18X1+0/89X2+0/23X3- 0/04X4

But judging the contribution of each independent variable in explaining the dependent variable should be assigned the values of□. The standardized regression equation is:

Y= 0/24X10/31X20/21X3- 0/18X4

4. Discussion and conclusions

This study aimed to identify factors affecting the behavior and attitudes of consumers towards organic agricultural products. In these cases, considering the need of audiences in these cases should be a pattern and axis on training and development of the use of organic products.

According to the results of the Pearson correlation between consumers' ages and their attitude towards the consumption of organic products there was a significant negative relationship at the 1% level and consumption of organic products tend to decrease with increasing age. Findings of Byrne et al. (1991) also is aligned with the above findings. While the research results of Sangkamchaliang &, Padel and Foster (2005), Chi-Huang (2012), Radman (2005), Zanoli et al.

(2004) and Jolly (1991) indicate that the relationship is positive and significant. Also the results of the Pearson correlation between organic products knowledge and attitudes of consumers of organic products show positive and significant relationship at the 1% level. The results of this study correspond with previous results Ajoodani (2010) , Akbari et al (2008) , Baba Akbari et al (2008) , Samaei (2007), Liaghati and Mahmoodi (2007) , Liby (2007), Sangkamchaliang & Chi-Huang (2012) , Sitinor & Nurita (2010), Kwan Yi (2009), Winter & Davis (2006) and Trvdon et al.(2001).

The results of this study show that between consumer's attitudes towards organic products and health awareness relationship is positive and significant at 1% level. The results of this study correspond with previous results of Ajoodani (2010) , Akbari et al (2008) , Baba Akbari et al (2008) , Laghati and Mahmoodi (2007) , Liby (2007), Sangkamchaliang & Chi- Huang (2012), Mirakzadeh et al. (2012), Kumar & Ali (2011).

The results of this study indicate that between The main motivation for consumption of organic products and consumer's attitudes towards Consumer attitudes toward organic products, the relationship is positive and significant at the 1% level.

So one can say with 99 % confidence the relationship between age and knowledge of organic products, health awareness, and motivation to attitude of consuming organic products is more than just chance and randomness. The results of this study suggest that between environmental concerns and consumers' attitudes towards organic products, there is no significant relationship (sig =0.35) and is equal (r =0.08). Findings of Sangkamchaliang & Chi- Huang (2012), Kumar & Ali (2011) Sitinor and Nurita (2010) do not match.

The results of stepwise regression analysis also show that health awareness is the most important variable influencing the attitude towards consumption of organic products. So that this variable alone explained 14% of variability of dependent variable. Four health variables awareness, knowledge of knowing organic products, the main motivation of consumers of organic products and consumers' age have ability to explain 32 % of the variable of changes in attitude of consumption of organic products. The remaining unexplained variance depends on other factors. The results of the research correspond with results of Mirakzadeh et al. (2012), Sangkamchaliang & Chi-Huang (2012) Kumar & Ali (2011), Kwan Yi (2009), Winter & Davis (2006), Lea and Worsly (2005), Kovacs (2003).

5. Suggestions

Due to the fact that the high level of health awareness is possible through education and awareness. In this regard, it is recommended: 1.Extening published articles related to health awareness and organic products in magazines and newspapers. 2. Conferences and seminars related to organic products. 3. Fairs showing supply of organic products. 4. Install educational banners in streets .5.Education workshops in centers offering organic products, home and community cultural centers. 6. Providing packets and brochures to consumer education and dedication. 7. Use packing of educational products including information recorded in the form of SMS. 8. Change advertising program goals of short-term goals (not influenced by emotions) to long-term goals (information and education). 9. Placing compulsory courses on the subject of organic products in various stages of education .10.Raising awareness, change beliefs, attitudes and consumption habits of society.

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