



Main factors influencing the spread and consumption of organic food in Saudi Arabia

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Abstract

This study aims to assess the knowledge and factors affecting the spread and consumption of organic food in Saudi Arabia. The main results showed that most consumers believe that organic food have health and environmental benefits, while the main factors reject the consumption of organic food are lack information, bad marketing and high price of these products. Regression analysis shows that the main significance factors affecting organic food spread include support the local producers, determine and show the organic food standards, organic food price and educational level.

Key words: Consumption, control, food standards, knowledge, organic foods, Saudi Arabia.

Introduction

Organic foods are produced using methods that do not involve modern industrial inputs such as pesticides and chemical fertilizers. These foods are processed without using x-rays, and industrial solvents, or chemical food additives ¹. Processed organic food usually contains only organic ingredients. If non-organic ingredients are present, at least a certain percentage of the foods total plant and animal ingredients must be organic (95% in the USA, Canada and Australian) and any non-organically produced ingredients are subject to various agricultural requirements. Food claiming to be organic must be free of artificial food additives, and are often processed with fewer artificial methods, materials and conditions ⁵. As for consumption of organic foods, UK's Food Standards Agency (FSA) stated that the consumers may choose to buy organic fruit, vegetables, and meat because they believe them to be more nutritious than other food. The shift in demand among consumers from conventionally to organically produced foodstuffs appear to have arisen at least in part from a belief that organically produced foodstuffs are healthier ^{2,3} and have a superior nutrient profile ^{4,6} than conventionally produced foodstuffs. In other studies, organic foods were not found safer or healthier than conventional foods ^{5,7,9,14}.

Lockie *et al.* ¹⁰ explained that the main factors increasing consumption of organic food are nature of the food and experience of food quality and nutrition while income, age factors, political and environmental values and safe effects are the main factors negatively affecting the consumption rate. Also, Urban *et al.* ¹³ reported that the most important factors affecting the consumption of organic food are social status, health status and environmental factors, on the other hand, the cost and poor information about

organic food and loosing trust in certified organic food are the main factors impeding the consumption of organic food. In South Africa, Tshuma *et al.* ¹² showed that the most important factors affecting the consumption of organic products are levels of education, income, price of the product, gender and nationality.

This study aimed to assess the knowledge level of the population of the western region of Saudi Arabia regarding organic food, and to determine the main factors affecting the consumption of organic food in Saudi Arabia.

Materials and Methods

The study was conducted on a sample of 1000 people in the 4 main Saudi Arabia regions through stratified random sampling design. The 4 Saudi regions were: West, East, Center and North regions. The population of these 4 regions was about 92% of the total population of Kingdom of Saudi Arabia. The composite sample of the study included different educational levels, ages, jobs, sex and social levels.

Interview and questionnaire methods were used to collect the information about the organic foods from the tested people.

The statistical analysis was done for the collected data after applying the statistical analysis assumptions ⁸ using SAS statistical program ¹¹.

Results and Discussion

Knowledge about the organic food: Table 1 indicates that overall the 4 regions, the highest consumer knowledge was about organic vegetables (77.9%) followed by organic fruits (64.2%), field crop products (32.07%) and finally, the organic juices (9.3%) with

Table 1. Relative frequency (%) of knowledge of the sample members and the reasons of consumption of organic food.

Region	Sample members knowledge			Consumption reasons		
	Field crop products	Fruit products	Vegetable products	Juices	Healthy	Environment
Center	40.6 a*	70.1 a	88.5 a	22.5 a	88.6 b	25.8 b
East	23.1 b	46.8 c	75.1 b	6.7 b	85.4 b	31.4 b
West	38.2 a	75.2 a	92.4 a	4.8 b	96.1 a	77.5 a
North	26.4 b	64.7 b	55.6 c	5.2 b	83.7 b	34.6 b
Mean	32.07 A	64.2 B	77.9 A	9.3 D	88.45 A	42.32 B

* Means followed by the same letter in each column are not significantly different according to BLSD at $P \leq 0.05$.

statistical significant differences among the four organic foods. Comparing the 4 regions, the results (Table 1) showed that the Center region occupied the 1st rank in the consumers, who have information about the four organic products, followed by the West region and then East and North regions.

These results can be explained as due to the educational and culture levels of the population, accordingly, the Center region is the region of Saudi Arabia capital (Riyadh) and has different universities, main information facilities besides different nationalities reflected into the previous results. West region, also located in the main marine on Red Sea the region resident are composed of many nationalities besides high educational level, while the other two regions are significantly different in the education, culture, and human diversity than Center and West regions.

Consumption of organic foods

Reasons of organic food consumption: High percentage (88.45%) of the Saudi Arabia sample individuals cleared that organic food had a healthy positive effects, while 42.32% stated that the organic food had a positive effect on the environment (Table 1).

Positive health effects are the main factors affecting the consumption of organic food for 96.1% of West region consumers, while in the other regions range is from 83.7% to 88.6%. The same trend, but with low values was shown concerning the positive effects of the organic food, and ranged from 77.5% (West) to 25.8% (Center) as shown in Table 1.

Reasons for no consumption of organic food: As presented in

Table 2, around one third of the composite tested sample members did not consume the organic food, and range was from around 40% in both North and East regions to 17.7% in West region. Five negative reasons were detected: limited information (27.12%), high price (23.67%) low available quantity in the markets (21.15%), bad marketing (10.1%) and scare from diseases and insects (8.4%). The lack of information about organic food ranged from 36.9% in East to 4.7% in West region. North region was the highest region in non using organic food (14.6%) as a result of scaring from the disease and insect infection, while West region was the lowest (4.4%). The bad marketing ranged from 18.6% in East region to 3.2% in North region. In Center region 35% from the sample around stated that the low amount of organic food and high price are the main factors negatively affecting the organic

food consumption (Table 2). The previous results are in agreement with the results obtained by other researchers^{5,7,9,14}.

Procedures to be made to increase the consumption of organic food: The main five procedures detected by the tested sample members are: tap of standers properties on the organic food (62.9%) increasing the organic food diversity (42.72%) decreasing the organic food price (40.27%), increasing the organic food marketing (34.67%) and increasing the positive propaganda on the organic food (30.15%).

Among the 4 Saudi regions, the first needed procedure is the diversity of organic food (64.1%) showed in Center region, while in the other 3 regions, the tap of standards on the organic food is the highest needed procedure with values of 55, 78.6 and 63.2% for North, West and East regions, respectively (Table 3).

Regression analysis: Regression analysis was as presented in the following multiple regression equation:

$$Y = 15.2 + 26x_1 + 18x_2 + 14x_3 - 13x_4 + 11x_5 + 9x_6$$

$$R^2 = 0.85$$

where,

Y = The spread of organic food.

x_1 = Support the local producers.

x_2 = Writing standards on organic food.

x_3 = Control the organic food market.

x_4 = Price of organic food.

x_5 = Consumer educational level.

x_6 = Diversity of organic food.

According to the previous regression equation, the main factors significantly affecting the spread of organic food through the Kingdom of Saudi Arabia are support of the local producers, writing standards on organic food, control the organic food market, price of organic food, consumer educational level and diversity of organic food.

The previous factors determining the spread of organic food products from the point of view of the sample can be by focusing

Table 2. Relative frequency (%) of the reasons not to consumption organic food of sample members.

Region	No. use %	Reasons of not use organic food				
		Lack of information	Fear from insect & disease	Bad marketing	Few amount	High price
Center	36.8 a*	20.1 b	4.5 c	4.7 c	34.8 a	35.2 a
East	40.2 a	36.8 a	14.6 a	3.2 c	24.3 b	18.8 b
West	17.7 b	14.7 c	4.4 c	13.9 b	7.9 d	21.7 b
North	40.6 a	36.9 a	10.1 b	18.6 a	17.6 c	19.0 b
Mean	33.82	27.12 A	8.4 C	10.1 C	21.15 B	23.67 B

* Means followed by the same letter in each column are not significantly different according to BLSD at $P \leq 0.05$.

Table 3. Relative frequency of procedures to be made to increase the organic food consumption.

Region	Increasing organic products marketing	More organic products diversity	More propaganda on organic products	Low price of organic products	Top of standards on organic products
Center	42.5 a*	64.1 a	46.2 a	56.1 a	54.8 c
East	29.7 c	38.7 b	34.9 bc	44.2 b	55.0 c
West	30.1 c	42.8 b	14.9 d	9.7 c	78.6 a
North	36.4 b	25.3 c	24.6 d	51.1 ab	63.2 b
Mean	34.67 C	42.7 B	30.15 C	40.27 B	62.9 A

* Means of the 4 regions in each column followed by the same letter are not significantly different according to BLSD at $P \leq 0.05$.

on improving these factors from those responsible increased proliferation and consumption of those products and take advantage of the health, nutrition and environment. These results are similar with the results of Tshuma *et al.*¹² and Urban *et al.*¹³.

Conclusions

Knowledge of Saudi population about the organic foods concentrated on vegetables, fruits and field crop products. Most consumers believe that organic foods have health and environmental benefits, while the consumers did not use organic food products because of lacking information on the organic products, fear of diseases and insects, bad marketing, lacking supply of these products and the high price of organic food.

The main and significant factors affecting the organic food spread and consumption in Saudi Arabia are support of the local producers, writing standards on organic food, control the organic food market, price of organic food, consumer educational level and diversity of organic food.

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