



## Asian Research Journal of Agriculture

12(4): 12-22, 2020; Article no.ARJA.56557  
ISSN: 2456-561X

# An Analytical Study of Jordanian Consumers' Attitudes towards Purchasing Organic Food

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### Authors' contributions

This work was carried out in collaboration between both authors. Author MA designed the study, performed the statistical analysis, wrote the protocol, wrote the first draft of the manuscript and managed the analyses of the study. Author RA managed the literature searches. Both authors read and approved the final manuscript.

### Article Information

DOI: 10.9734/ARJA/2020/v12i430088

#### Editor(s):

(1) Dr. Afroz Alam, Banasthali University, India.

#### Reviewers:

(1) Janilson Pinheiro De Assis, Federal Rural University of the Semi-Arid, Brazil.

(2) Margarita Işoraitè, University Applied Science, Ghana.

(3) Kholil, Nigeria.

Complete Peer review History: <http://www.sdiarticle4.com/review-history/56557>

Received 20 February 2020

Accepted 26 April 2020

Published 29 April 2020

Original Research Article

## ABSTRACT

The study aimed to determine the level of consumer attitudes towards purchasing organic food, by conducting a statistical analysis of the data collected from the questionnaires collected from a sample of consumers in Amman Governorate in 2018 distributed to a sample of 384. The analytical descriptive approach was used in this research to study the relationship Between the variables, the results of the study showed that the average degree of consumers to purchase organic foods was 3.69 degrees, which is a high level according to the scale used. The independent variables of consumers were also distinguished by its clear impact on their attitudes towards the purchase and consumption of organic foods. Through the study, it was found that there is a positive and important relationship between consumers attitudes towards organic foods and some factors that affect their attitudes. Considering this, importance the researcher recommends the importance of conducting awareness programs on the importance of organic foods and to do other relevant studies in different regions of Jordan.

Keywords: Organic food; consumption; consumer attitudes; Jordan.

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## 1. INTRODUCTION

The high pace of industrial development coincided with the global population increase, which led to pressure on economic resources, that required an increase in the volume of agricultural production, and to meet the requirements and needs of consumers, many farmers resorted to the use of fertilizers and chemical pesticides to meet the demand of food products [1]. However, there are many studies that have raised many concerns due to the use of fertilizers and chemical pesticides in agricultural operations, and the extent of their threat to the health and safety of the consumer, as it is likely to be reflected through the negative effects that may affect the immune system of humans [2,3].

As a result, concern has prompted many consumers to search for safe and sound foods from entities that have food safety certificates [4]. Therefore, the world has moved towards implementing sustainable farming systems, coinciding with the increasing awareness of consumers in recent years of the importance of obtaining safe and environmentally safe food products, where an agricultural system has been applied as one of the sustainable farming systems called "organic agriculture", which is one of the oldest types of agriculture that farmers used before the emergence of fertilizers [5]. It is a viable alternative to traditional agriculture and contribute to sustainable development, in terms of food safety and quality [6] in order to provide a better life for consumers, through their access to safe food products, in addition to achieving high economic returns [7].

Organic agriculture is a comprehensive system that manages production and promotes the integrity of the agricultural ecosystem, including biological diversity, biological cycles and soil biological activity [8]. It focuses on the use of management techniques as an alternative to using production inputs from manufactured chemicals, considering regional conditions that require systems adapted to local conditions [9]. This is done using - wherever possible - agricultural, biological and mechanical methods instead of using manufactured materials, to carry out any specific task within the system [10]. Considering agriculture in this concept, it will reduce the level of environmental pollution and gradually improve the health of individuals and agricultural conditions in the long term, and organic products that are compatible with organic

safety standards are considered one of the pillars of health protection and environmental preservation in developed countries [11]. According to the International Food and Agriculture organization, organic agriculture works to provide goods, protect the environment, and improve biological diversity through the sound management of farms and the surrounding environment [12,13].

Previous studies on knowledge, awareness and consumer behavior towards organic foods in both developed and developing countries indicate that consumer awareness, knowledge and consumption of organic foods is much higher in developed countries than in developing countries [14,15]. In countries like Jordan, where there are still newly emerging organic food markets and at an early stage of their growth, there is still a relatively low awareness of consumers [16], so awareness and knowledge have become a decisive factor in changing consumers' attitudes and behavior towards organic foods, which are expected to drive growth in organic food markets. In light of this. The study problem is that Organic farming is a growing sector in Jordan, which is encouraged by the government and many private initiatives. Therefore, production is expected to rise to meet the growing demand in the domestic market for organic foods. and the Consumers in Amman City know little about the production process, and therefore leads to low levels of confidence in organic production, which would indicate that there is not enough information on the consumers' side about organic production. and, Studies concerning consumer demand for organic food products are still under-developed in Amman City.

### 1.1 Objectives of the Study

The present paper aims to measure consumer attitudes towards buying organic foods through studying:

1. To know the personal and social characteristics of consumers.
2. To identify what are the factors that affect consumers' attitudes towards purchasing organic foods.
3. To determine the relationship between the factors and consumer attitudes towards purchasing organic foods.

## 2. STUDY METHODOLOGY

This study is descriptive and analytical in nature. The study was carried out by collecting primary

data for a cross-section of a random sample of consumers from Amman, the capital of Jordan, Data has been collected from 384 customers from local shops, in Four commercial complexes were distributed across the south, north, east and west of the city of Amman, to ensure the optimum distribution of questionnaires and access to the various spectrums of the necessary preliminary research sample ,The study undertook the period of 3 months from Oct. to Dec.2018 .

The information was collected with the help of well-structured questionnaire from the selected sample areas. The secondary data were collected from government reports, publications, research reports and research reports and books as per the demand of the need. and, the primary data, used collect questionnaire is designed with three sections: section 1 captures demographic profile for the purpose of describing the sample and it consist of questions pertaining to gender, age, marital status, education level, Monthly income, quantity purchased of organic foods: milk, Meat and poultry, Eggs, Fruits, Honey), and section 2 captures the paragraphs related to consumer attitudes towards the purchase of organic food. while section 3 present the factors affecting the behavior of their purchase of organic foods. The collected data were analyzed with the help of percentage analysis and mean, standard deviations also, one sample (T) test and Correlation has been used to relationship between independent and dependent variables and consumer attitudes towards purchasing organic foods. All the 35 questions from section 2 of the questionnaire used a Likert scale ranging from 5= Strongly Agree to 1= Strongly Disagree. The data is analysed using SPSS version 21.0.

Reliability result of the questionnaire shows that, purchase of Jordanian consumers 'attitudes towards purchasing organic food had good Cronbach alpha of 0.839, which is greater than 60%, and therefore considered an acceptable value which is a good degree of stability [17].

### **3. RESULTS AND DISCUSSION**

#### **3.1 Social and Economic Characteristics of the Study Sample**

Table 1. shows the economic and social characteristics that were taken into account as influencing the attitudes of consumers towards purchasing organic foods.

The results of the study indicate that 66% of consumers were female, compared to 34% of men. The results showed that (42%) of the consumers were between 25 and 40 years old, and 52% of the consumers were over 40 years old. Also (65%) of the consumers were university education holders, and this is important in accepting the new ideas. The table also shows that 65% of consumers are married, and 68% of consumers, the average number of family members ranges between 3 to 6 individuals. 52% of consumers received an income that ranged between 500 and 1,000 Jordanian dinars per month, which indicates the level of income that positively affects consumers 'attitudes towards these foods. As income is one of the most important factors affecting determining the amount of food purchased and not the desire to consume, as it was noted that many low-income consumers want to buy organic food, but high prices for organic foods prevent them from purchasing large quantities of them [8].

#### **3.2 Consumer Attitudes towards Purchasing Organic Food**

The results of the study indicate in Table 2, which shows the consumers 'answers to the paragraphs related to the degree of their attitudes towards the purchase of organic food, that the general average degree of consumer attitudes toward purchasing organic food is (3.69) degrees and it is within the high level of attitudes. It is noted that the arithmetic mean ranged between (4.64 to 1.34 degrees) for the study paragraphs, and the results indicate that 51.4% of the answers inclined to the high level. This confirms the extent of awareness that consumers have of the importance of the trend towards consuming organic foods, as they have many benefits for human health, where organic foods have many of the antioxidant compounds associated with the best health and the lowest levels of toxic metals and pesticides [3].

The paragraph "The price of organic food is an obstacle to the decision to purchase" received the highest degree of consumer orientation towards consuming organic food with an average score of (4.64). The increase in the prices of organic foods is due to the fact that the costs of producing organic foods are usually higher due to the increase in the cost of labor by unit of production [18], This is because farmers do not use chemicals and pesticides in agriculture, which forces them to hire more workers to carry out agricultural tasks such as weeding and manual soil and water cleaning. This will

increase production costs due to the increase in working hours [19], in addition to the high cost of organic and animal fertilizers, and organic crops that take longer to grow because they do not use hormones that promote growth, and the necessary procedures to obtain a membership certificate are additional fees for their cost [20], Which indicates all of these variables combined raise the price of organic foods [21]. Also, the paragraph "I do not consume organic foods due to new technologies used in its production" came as the lowest degree directed by consumers towards the consumption of organic foods, with an average of (1.34) degrees. The average decrease in consumer orientation towards the previous paragraph indicates their awareness regarding organic food production systems that mainly depend on the use of integrated natural control and national fertilizers instead of chemical in the production process. Organic farming systems also depend on controlling pollution levels, improving agricultural production quality,

food quality, and consumer health [22]. The philosophy of producing organic foods lies in preserving the principles of biological diversity, natural pest management, soil integrity, environmental balance and sustainability, as farms differ in the application of these principles to access safe and sound products according to the applicable country and conditions of application [23].

### 3.3 The Distribution of Consumers According to the Factors Affecting the Behavior of their Purchase of Organic Foods

Consumer behavior in product purchase issues is shaped largely by external or social environment factors such as family relationship, cultural aspects, and other aspects of the external environment. Awareness of these influences can help marketers think about new.

**Table 1. The social and economic characteristics of the study sample**

Variable	Number	Percentage
<b>1. Gender</b>		
Male	129	34%
Female	255	66%
Total	384	100%
<b>2. Age</b>		
Less than 25 years	21	5%
Between 25 - 35 years	100	26%
Between 35 - 45 years	62	16%
More than 45 years	201	53%
Total	384	100%
<b>3. Educational level</b>		
High school or less	37	10%
Diploma	14	4%
Bachelor	250	65%
High studies	83	22%
Total	384	100%
<b>4. Marital status</b>		
Married	249	65%
Unmarried	85	22%
Divorced	50	13%
Total	384	100%
<b>5. Number of family members</b>		
Less than 3 individuals	81	21%
From 3 to 6 individuals	261	68%
More than 7 individuals	42	11%
Total	384	100%
<b>6. Monthly income</b>		
Less than 500 dinars	85	22%
From 500 to 1000 dinars	198	52%
More than 1000 dinars	101	26%
Total	384	100%

Source: field survey results, 2019

**Table 2. Arithmetic averages, standard deviations and percentages of consumer attitudes towards purchasing organic foods**

No.	Paragraph	Degree of orientation					Arithmetic Average	Standard Deviation	The level	P-value
		Too high	High	Medium	Low	Too low				
1	The price of organic food is an impediment to the purchase decision	0.60	0.20	0.10	0.01	0.09	4.64	.73	High	0.001
2	The surrounding environment would be a better place if the entire population consumed organic products.	0.70	0.17	0.10	0.01	0.02	4.37	.86	High	0.000
3	Organic foods reduce soil pollution	0.59	0.02	0.19	0.08	0.10	4.37	.86	High	0.001
4	Consuming organic foods helps prevent obesity	0.70	0.25	0.03	0.01	0.01	4.17	0.73	High	0.003
5	Organic food is free from harmful effects	0.25	0.69	0.01	0	0.05	3.98	1.23	High	0.007
6	Food produced in an organic manner means completely reliable food	0.52	0.08	0.34	0.05	0.01	3.92	1.15	High	0.042
7	Baby foods with organic ingredients contain more nutrients than traditional foods.	0.23	0.21	0.21	0.25	0.10	3.92	.46	High	0.004
8	Organic baby foods are not as healthy as traditional foods	0.40	0.10	0.10	0.20	0.20	3.92	1.15	High	0.043
9	Organic foods are produced without the use of hormones or antibiotics.	0.50	0.20	0.01	0.20	0.09	3.92	1.15	High	0.040
10	Organic foods secure the biological balance of nature	0.60	0.20	0.10	0.05	0.05	3.92	0.68	High	0.001
11	Organic foods reduce the risk of diseases.	0.28	0.21	0.26	0.10	0.15	3.92	0.46	High	0.003
12	Organic food is not easily found in grocery stores compared to traditional food.	0.47	0.15	0.18	0.09	0.11	3.92	1.15	High	0.039
13	Organic foods have high quality	0.30	0.58	0.06	0.01	0.05	3.75	.85	0.001	

No.	Paragraph	Degree of orientation					Arithmetic Average	Standard Deviation	The level	P-value
		Too high	High	Medium	Low	Too low				
14	Organic foods do not contain additives.	0.50	0.30	0.02	0.05	0.13	3.75	0.68	High	0.004
15	Organic foods taste better than traditional foods	0.05	0.25	0.50	0.03	0.17	3.75	.95	High	0.001
16	I feel healthy when I eat organic foods.	0.54	0.35	0.02	0.01	0.08	3.67	1.00	High	0.028
17	Organic foods do not contain preservatives or artificial colors.	0.40	0.30	0.21	0.05	0.04	3.67	.86	High	0.009
18	Chemical fertilizers are not used in the production of organic foods	0.50	0.04	0.09	0.17	0.2	3.67	0.95	High	0.024
19	I think consuming organic foods has no risks	0.20	0.031	0.40	0.20	0.17	3.64	0.56	Medium	0.004
20	Residues of pesticides in food cause diseases in humans.	0.11	0.09	0.20	0.20	0.4	3.37	.86	Medium	0.003
21	The content of vitamins and minerals from organic foods is not more than traditional foods	0.40	0.20	0.10	0.20	0.10	3.35	0.95	Medium	0.021
22	Organic food labels confuse the buyer	0.53	0.31	0.03	0.08	0.05	3.35	.95	Medium	0.029
23	Preservatives in organic foods are an impediment to consumption	0.15	0.15	0.18	0.22	0.40	3.17	1.23	Medium	0.049
24	Organic food labels can easily be imitated.	0.12	0.36	0.28	0.23	0.01	3.17	1.23	Medium	0.043
25	I like to consume organic foods because of their environmental and health benefits.	0.25	0.53	0.15	0.04	0.03	3.05	1.21	Medium	0.0039
26	Organic food is not genetically modified.	0.02	0.02	0.40	0.30	0.36	2.92	.46	Medium	0.004
27	I don't think there is any difference between organic foods and traditional foods.	0.08	0.02	0.60	0.12	0.18	2.90	0.52	Medium	0.003
28	I live longer if I consume organic foods.	0.40	0.20	0.10	0.20	0.10	2.23	.95	Low	0.032

No.	Paragraph	Degree of orientation					Arithmetic Average	Standard Deviation	The level	P-value
		Too high	High	Medium	Low	Too low				
29	Regular consumption of organic food is harmful to my health	0.01	0.05	0.34	0.08	0.52	2.17	0.95	Low	0.014
30	I usually read ingredient labels on the foods I think of buying.	0.25	0.21	0.23	0.11	0.20	2.05	1.21	Low	0.047
31	Organic food will harm society rather than benefits.	0.10	0.20	0.20	0.30	0.20	1.92	.46	Low	0.001
32	Organic foods do not have better quality than traditional foods.	0.07	0.03	0.50	0.22	0.18	1.64	0.78	Low	0.002
33	Consuming organic foods is not among the measures I can take to protect the environment.	0.05	0.05	0.20	0.40	0.30	1.37	.86	Low	0.001
34	I think the risks to organic foods outweigh their benefits.	0.10	0.20	0.20	0.10	0.40	1.35	.95	Low	0.002
35	I do not consume organic food because of the new technologies used in its production.	0.40	0.2	0.05	0.05	0.30	1.34	0.75	Low	0.003
<b>Overall Average</b>							3.69	0.74	High	0.019

Source: field survey results, 2019

marketing methods to attract customers [24]. Table 2. shows the results of analyzing percentages and repetitions toward consumer behavior to purchase organic food in Jordan. The results indicate that 34.5% of consumers purchase organic food permanently, 27.5% of consumers choose to buy organic products "sometimes", 24% of consumers choose "often", and 14% of consumers express "their unwillingness" to buy organic food products.

monthly, and 6.5% of consumers purchase organic food indefinitely. The majority of consumers (61.5%) were willing to pay a premium of up to 10% higher than the price of traditional food products, and 19% of the consumers were willing to pay a price premium ranging between 10% to 20% and 8.5% willing to pay more than 20%, and it was about 16% of consumers who were unwilling to pay any premium.

Regarding the frequency of buying the product, 14.50% of consumers purchase organic food products daily, 16% buy weekly, 11% buy

With regard to the amount of purchase of organic food products in the event of high prices, the majority of consumers (45.5%) purchased a

**Table 3. Distribution of the study sample according to the factors affecting the behavior of their purchase of organic foods**

Variable	Unit	Percentage	Number
We buy food organic food	Always	34.50	132
	Often	24.00	92
	Sometimes	27.50	106
	Never	14.00	54
How often to buy organic food	Daily	14.50	56
	Weekly	16.00	61
	monthly	11.00	42
	No specified times	6.50	25
Be willing to pay higher price	More than 10 %	61.5	236
	From 10to 20 %	19	73
	More than 20 %	8.5	33
	I do not pay	16	61
Food consumption of the price increases	I buy too much	13.00	50
	I buy a little	45.50	175
	I do not buy	41.50	159
Source of influence in your purchase decision	Ads	15.00	58
	personal information	5.00	19
	Acquaintances	17.50	67
	Family	14.00	54
	The surrounding environment	10.50	40
Where to buy organic products	Grocery stores	22.50	86
	Super Market	25.00	96
	Major shops	22.50	86
	Shops specialized in selling organic food	30.00	115
Do you advise others to consume organic foods ?	Yes	59.50	228
	No	40.50	156
Advertising/ propaganda for organic products	There is propaganda	44 %	170
	There is no	56 %	214
Purchase according to product quality	Yes	77 %	297
	No	23 %	87
Purchase according to the product brand	Yes	70 %	269
	No	30 %	115
The source of the product	Yes	24 %	94
	No	76 %	290

Source: field survey results, 2019



smaller amount of organic food products, 41.50% of consumers did not buy organic food products and 13% of consumers continued to purchase with a large amount of organic food products.

The results of the study also showed in Table 3. that 17.5% of consumers relied on the people they know as an information source on organic food products, and that 15% of consumers relied on advertising through advertisements from newspapers and TV, and the surrounding environment came in by 10.50% as a source of influence in the decision of purchasing organic products. 30% of consumers went to shops that sell organic food, 25% of consumers went to the supermarket to buy organic products, and 22.50% of consumers went to grocery stores and major shops.

59.50% of consumers were unanimous in advising others to purchase organic products. 56% of consumers indicated that within their knowledge there are no advertising campaigns for organic products. 77% of consumers indicated that they are buying according to the quality of

the product, and 70% of them are buying organic products according to the brand, and 76% of consumers indicated that there is no great importance to the source of the organic food production.

### 3.4 Distribution of Consumers according to the Quantity Purchased of Organic Food

It is noted from Table 4. related to the distribution of consumers according to the quantity purchased of organic foods, that 0.49 of the respondents buy less than 2 liters of milk per day. The results also showed that 0.62 of the respondents buy less than 3 kg of meat and poultry per week. The results showed that 0.88 consumers buy only one egg box per week. And 0.42 of the respondents buy from 4 to 8 kg of vegetables per week, while 0.67 of the respondents buy less than 4 kg of fruits per week. The results showed that 0.51 of the respondents purchased 1 to 2 kg of organically produced honey in one month.

**Table 4. Distribution of consumers according to the quantity purchased of organic foods**

Product	Amount of consumption	Number	Percentage
The milk ( Liter / day )	Less than 2	188	0.49
	From 2 to 4	134	0.35
	More than 4	61	0.16
Meat and poultry ( Kg / week )	Less than 3	238	0.62
	From 3 to 6	111	0.29
	More than 6	35	0.09
Eggs (Egg carton / week)	One Carton	338	0.88
	More than one carton	46	0.12
Vegetables (Kg / week )	Less than 4	98	0.26
	From 4 to 8	160	0.42
	More than 6	126	0.33
Fruits (kg / week )	Less than 4	257	0.67
	From 4 to 8	111	0.29
	More than 6	16	0.04
Honey (Kg / week )	Less than 1	177	0.46
	From 1 to 2	196	0.51
	More than 2	12	0.03

**Table 5. Correlation results**

Independent variable	R	P value*	Correlation type
Price	0.93	0.002	Pearson
The source of the product	0.88	0.021	Spearman
Monthly income	0.88	0.001	Pearson
Quality	0.87	0.004	Spearman
Advertisement	0.86	0.032	Spearman
Where to buy	0.82	0.040	Spearman
Trademark	0.80	0.030	Spearman

Source: field survey results, 2019

### **3.5 The Analysis of Relationship between the Factors Affecting Consumers Attitudes towards Purchasing Organic Foods with Consumer Attitudes towards Purchasing Organic Foods**

Pearson's correlation coefficient is used to measure the strength of a linear relationship between two variables. The high correlation is between Price as one of the factors affecting and consumers attitudes. The finding reveals that the r- value is 0.93 or 93% at 99% confidence interval. and the low correlation is between Trademark with consumers attitudes, the 80 finding reveals that the r- value is 0.80 or 80% at 95% confidence interval. Also, Table 5 shows that all of the correlations were significant, all significant relationships were positive. Most of the variables showed strong relationships, attitudes towards purchasing organic foods showed high correlations with a number of variables including purchase, Educational level, Price, the source of the product, Monthly income, Quality, Advertisement, where to buy, trademark.

### **4. CONCLUSION**

The demand for the organic products in the market is increasing day by day. The concern of consumers towards health forcing them to use organic foods. The quality characteristics of organic products constituted as input into raising demand for these products. To accomplish the objectives of the study, the researcher depended on both primary and secondary data. the demographic variables of the consumers were analyzed considering the attitude which is an important measure that will help to understand the level of attitudes for the products is purchasing organic food in the study. The attitude and factor effecting to purchase organic food products was found to be satisfactory, however, based on the interference of the policy makers and initiative by the government will help to achieve good health situation for the consumers. As it shown by the above statements that quality and Advertisement and Trademark aspects acts as a major motivator for the buyer to buy organic products. the marketers of organic products need to be innovative and dynamic in order to complete with the changing purchase behavior in the organic products market. In light of this, the researcher recommends the importance of conducting awareness programs on the importance of organic foods and to do other relevant studies in different regions of Jordan.

### **DISCLAIMER**

The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

### **CONSENT**

As per international standard informed and written participant consent has been collected and preserved by the authors.

### **COMPETING INTERESTS**

Authors have declared that no competing interests exist.

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