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The Impact of Demographic Characteristics on Buying Decision of Organic Foods

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Abstract

The organic food market is one of the fastest growing food sectors in recent period all over the world. The demand for organic food products is dramatically rising in Saudi Arabia as the population becomes more affluent and more educated about health and wellness issues, leading to greater consciousness in food choices and it has transformed the Kingdom into the GCC's top organic foods market. The Kingdom of Saudi Arabia's domestic organic and natural foods sector is currently valued at around SAR 1 billion, accounting for 90 per cent of the regional market. The present study examined the impact of demographic characteristics on buying decision of organic foods for residents of Riyadh in Saudi Arabia. This study focuses on the impact of health literacy, knowledge and the price of organic foods of consumer's purchasing decision. The sample was collected from 436 participants through an electronic questionnaire. The main findings revealed that there is no relationship between demographic variables and the consumer's willingness to buy organic food. It was also found that health awareness and knowledge of consumers for organic food and organic food prices, factors were linked to the desire of consumers to buy organic food. The main recommendations were; the organic food producers should put more effort on promoting and publicizing the advantages, as well as taking into account the aspects of pricing for those products highlighting the health benefits that accrue to the consumer by the consumption of organic foods.

Keywords: *Organic food, organic agriculture, consumer behavior, demographic characteristics, purchase decision, sustainable development.*

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1. INTRODUCTION

The organic food market is one of the fastest growing food sectors all over the world. The organic food industry has recently emerged as a rapidly expanding market all over the world in response to concerns about conventional agriculture practices, food safety, human health concerns, animal welfare considerations and concerns about the environment. It has been the subject of much media attention over the past decade. Therefore, in the past decades there has been an increase of production and consumption of organically- produced products which is seen as having less impact to the environment. The demand for organic food products is dramatically rising in Saudi Arabia as the population becomes more affluent and more educated about health and wellness issues, leading to greater consciousness in food choices. The growing health consciousness among Saudi residents coupled with rising income levels that allow for flexibility in food choices has transformed the Kingdom into the GCC's top organic foods market. The KSA's domestic organic and natural foods sector is currently valued at around SAR 1 billion, accounting for 90 per cent of the regional market. Efforts are underway to further develop organic food production in the country to boost the Saudi share in the thriving SAR 825 billion global organic food industry.

Organic Foods, as defined by Lockie *et al.* (2006), are foods grown without growth hormones, chemicals, or artificial fertilizers. Organic food must be produced without the use of sewer-sludge fertilizers, most synthetic fertilizers and pesticides, genetic engineering (biotechnology), growth hormones, irradiation and antibiotics. A variety of agricultural products can be produced organically, including produce of grains, meat, dairy, eggs, and processed food products. "Organic" does not mean "natural". There is no legal definition as to what constitutes a "natural" food. However, the food industry uses the term "natural" to indicate that a food has been minimally processed and is preservative-free. Natural foods can include organic foods, but not all natural foods are organic. In general, green or organic foods refer to foods that are safe to be consumed, are of fine quality, are concerned with humane animal treatment, are nutritious foods and are produced under the principle of sustainable development (Liu, 2003).

Organic foods are those foods which are produced according to the standards and requirements of specific agricultural aims to provide natural products free of chemical fertilizers and pesticides. It also prevents the addition of synthetic chemical substances to plant organic food or treat food with radiation, and there are plenty of explanations and definitions of organic agriculture (OA) to all meet on that system based on ecosystem management rather than external agricultural inputs, as a study of the potential environmental and social impacts through the use of synthetic inputs as mentioned above such as synthetic fertilizers, synthetic pesticides, veterinary drugs, seeds and transgenic strains, preservatives, additives, irradiation, and replaced management methods correspond to the characteristics of each site maintains long-term soil fertility and increase and preventing pests and diseases. Consumer-oriented organic agriculture or clearly defined market through certificates and tariff data cards, consumers take informed decisions on how to produce these food, classification, handling and marketing, so that the consumer has a strong effect on organic production (Fao.org, 2015).

According to the US Department of Agriculture (USDA), Organic food is produced using sustainable agricultural production practices. Not permitted are most conventional pesticides; fertilizers made with synthetic ingredients, or sewage sludge; bio-engineering; or ionizing

radiation. Organic meat, poultry eggs and dairy products come from animals that are given no antibiotics or growth hormones. The organic food products are the products to use renewable resources and preserve soil and water to maintain the high quality of the environment for future generations. (Usda.gov, 2015).

There is significant growth in organic food consumption in world wide-whether developed or developing countries. The comparisons between organic foods and inorganic foods in global food market highlights that organic foods are environmental friendly, healthy and safer but relatively its prices are high. The certified organic products are more expensive than their traditional counterparts. This is due to the following reasons:

1. Organic food supply is limited compared to the demand;
2. Costs of producing organic food usually higher due to higher labor cost input per unit of production, and because of the great diversity in business means no possibility of achieving economies of scale;
3. Perform post-harvest handling of relatively small quantities of organic food to higher costs as a result of the mandatory segregation of organic and traditional ones, particularly during manufacturing and transportation;
4. Marketing and distribution chain for organic products from the inefficiency and high costs for the relatively small sizes and rates do not include organic food production costs of food itself, but covers a range of other factors that are not included in the price of traditional foods such as: promotion and protection of the environment, for example, the high price of organic crops compensate to produce financial returns of rotational periods which are necessary to build soil fertility;
5. High levels of safety of animals; and
6. Avoid health risks suffered by farmers as a result of handling fertilizer improperly. Rural development through the provision of more job opportunities and ensuring fair and adequate income for the producers (Fao.org, 2015).

2. RESEARCH STATEMENT

It is highly important to examine the demographic factors that might influence the tendency of consumer to buy organic food products. This research is believed could help to formulate a greater market communication and policy strategies in order to influence behavior toward organic food. According to Lockie *et al*., (2002) the percentage of people consuming organic food products may increase as they experience a rise in income and normally organic food consumers are among those with high education level compared to non-organic consumers. Different researchers conclude that a better understanding of consumers' perception of healthy foods and its determinants are key success factors for market orientation and development and for successfully negotiating market opportunities (Geeroms *et al.,* 2008).

Researchers found that buying organic food is relatively weak for lack of places of distribution of organic products, and a few advertisements that stimulate consumption, which leads to a low level of knowledge of individuals with the term added to the benefits of health and their impact on quality of life of these individuals for the study is the factor affecting the consumers for buying these organic foods in terms of demographic characteristics (gender, income level, education level, age). In addition, to find out if the purchase decision is influenced by the level of knowledge

about organic food. Health awareness is one of the factors affecting the purchase of such product, and marketing can be influenced by the prices of organic products in the purchase so it is important that it is linked to the measurement of the perceived value of organic food and its relationship to current prices.

3. IMPORTANCE OF THE STUDY

A number of organic food consumption studies concentrated on consumers in the United States of America and the European continents. Thus as far as we have no sufficient information about the consumption trend of organic food in Kingdom of Saudi Arabia as compared to these industrialized countries (U.S.A, Europe, Australia and New Zealand). There is only little research studies available about the purchase of organic food or the consumers' perception towards organic food in South East Asia. So, this research is important in view of the scarcity of Arabic academic references and weak content in an effort to study and measure the trends of consumers of organic products. The importance of this research as applied to help the organic food on health of individual lives as consumers will help in trying to explain the determinants of demand for these products and what affects them, this study will help to add modestly to researchers in this area.

4. OBJECTIVES OF THE STUDY

The main objective of this study is to identify the factors that affect the consumer's decision to purchase organic foods. Specifically the study aims to:

1. Identifying the factors affecting demand and decision to purchase organic products.
2. Identifying the demographic characteristics (gender, income level, education level, age) influencing customer decisions to purchase organic products which may be useful in targeted market segments defined by the producers and sellers of organic foods.
3. Determine the relationship of health awareness and knowledge of consumers of these products on their decision to buy them, and contribute to increased awareness and knowledge level they have.
4. Find the effect of the purchased product pricing, contribution to clarify the perceived value to the consumers purchase decision of producers and marketers of organic products.
5. Help producers and marketers of organic products in identifying the main factors influencing the decision to purchase organic products to develop appropriate marketing programs.

5. LITERATURE REVIEW

Many studies have tried to answer the question of consuming organic foods. Perhaps the first breakthrough should start trying to interpret consumer behavior and its impact on the consumer's decision to purchase any good or service whether or not on the one hand and on the other hand, identifying factors affecting consumer behavior and its trend.

Consumer behavior can be defined as "a set of activities and actions by consumers searching for goods and services they need to satisfy their needs and desires, and during her evaluation, acquisition, use and disposal, and the concomitant decision-making processes" (Suleiman, 2000). Thus, the question arises how and why consumers buy? According to (Kotler and Keller, 2011) the purchase behavior of consumers is a model in which the buyer and the process of purchasing properties to environmental stimuli play an important role in the purchase decision, so the

consumer purchase behavior is influenced by many factors-cultural, social, psychological, and many studies have tried to link many of those factors and the purchase of organic food products. When talking about the psychological factors we mean that the factors of motivation and cognition, learning, and beliefs, attitudes and trends, while cultural and social factors include culture and sub-culture, demographic effects, social class, family, reference groups, and opinion leaders.

These factors and effect of the focus of researchers, it has weathered a lot of studies that tried to link between them and the consumer behaviour towards organic foods. From the studies that addressed these factors (Shi *et al*., Wee 2014) to measure consumer perception and purchase intentions and behavior analysis of actual purchase and the inter-relationship between them regarding organic food products. The results of this study indicated that the desire of consumers to buy organic foods is affected by consumer awareness of food safety, health of the animal and environmental factors. Surprisingly, there was no significant impact to perceived quality of organic food products to the consumer's willingness to buy, and have observed significant differences in willingness to buy organic food products in accordance with the respondent's gender, age, income level, education level and region of residence. Theoretically, the study supported the perception of consumers about organic food products that will affect the behavior of the purchase and then lead to the actual purchase of the product.

In another study (Quah and Tan, 2009) aimed to find out the probability of buying consumers in Malaysia for organic food products and the impact on their social, behavioral and demographic factors. The study addressed the cultural and religious differences on Malaysian and Indian media openness (components of the Malaysian people) and their impact on the purchasing decisions of organic food products, also study attempted to make sure that women are buying more organic products as they are more interested in health and fitness for men. The study also tested some assumptions like that urban residents are more inclined to consume organic products as provided by special shops offer sell and also test the hypothesis that learners tend to eat healthy eating by virtue of their knowledge of its benefits. The study concluded that socio-demographic factors and Behaviorism is very important to determine the purchasing decisions of consumers of organic products, although this effect is not identical for all sectors and factions of the Malaysian society.

Dumea and Cuza (2012) intended to find out the impact of demographic factors on the purchase decision in Romania through the questionnaire to a number of buyers of organic food. From the results of a study that found a very strong link between consumer trends and total purchase. The study found a strong correlation between the consumption of organic food and health as well as the strong relationship between environmental factors and the consumption of organic food. Most of the sample had a positive impression about organic food. Among the obstacles that limit the sales of organic food and monitored through the sample is difficult to identify these foods and lack of venues dedicated to organic food. Dickieson and Arkus (2009) conducted a study in the United Kingdom, its aims are to explore the impact of certain variables such as health awareness, attention to safety, in addition to the sensitivity of the values of prices and other factors influencing behavioral intentions towards organic food shoppers, tried to understand how the impact of the economic recession in the United Kingdom to purchase intentions. The study

concluded that health awareness, perceived quality, attention to safety, in addition to confidence in organic brands sticky products factors had a positive impact on consumer behavior and wish to purchase organic foods while the survey found that prices of organic products cause curb intentions of purchase to consumers.

The results of this study are supported by (Kai *et al.*, 2013) research in Malaysia, aimed to explore determinants that make consumers willing to pay for organic products, by collecting sample of 479 respondents through questionnaires in October 2012 from consumers of organic products. The study showed that caring for the environment, health awareness, high prices is expected; in addition to the labelling of organic products have a significant impact on the willingness of consumers to buy. Another research (Lillywhite *et al,* 2011) on the Jordanian consumer tastes for organic food, holding currently a small a market for organic food.

Attanasio. S., *et al.* (2013) studied about the consumers' intention to purchase organic food products in Pontina Province (Italy). Results indicated that the intention to buy organic products are influenced by the perception about the value of organic products and by the belief on the health and safety of the product, and confirm that the main barrier to increasing the market share is consumer information. Moreover, their result revealed that all respondents are willing to pay premium price, but the level of acceptability varies considerably.

McCarthy, B. and Laurie Murphy (2013) focuses on identifying the demographic characteristics of organic food buyers, the motivational factors that drive the purchase of organic food and the role of political citizenship in food choices. They found that the organic food buyer was generally female and well educated, but age, income and presence of children in the household were not distinguishing traits. The result suggests the political consumerism is a driving force for organic food consumption, which was expressed in a distrust of corporations; lack of faith in government; wider concerns over patterns of agricultural land use within the context of sustainability and tendency to engage in boycotts and sign petitions. Variables such as taste, product freshness and animal-welfare were important motivating factors. While consumers have enough knowledge to distinguish between conventionally-grown food and organically-grown foods, there are gaps in the consumer's level of knowledge about all the requirements for organic standards.

Brcis, V., *et al.* (2013) found in their research that there is significant relationship between organic food purchase according to the region, education level, place of residence, financial status, personal monthly income and monthly household income. Further on, insights from organic food purchase patterns from Croatian market show that frequent organic food consumers consider organic food tastier and healthier than conventional, and consider that organic food with the eco-label is safer for consumption than the food without the eco-label.

6. THE DEMOGRAPHIC FACTORS (VARIABLES) FOR THE STUDY

Some variables concerning demographic characteristics were extracted and tested which can be summarized as follows:

1. *Gender:* women are more interested in health, nutrition and the environment in addition to responsibility for shopping for home and family than men so they are more likely to buy organic food.
2. *Age:* young consumers are more likely to purchase organic products than older people. The budget may be due indirectly to the fact that the disposable income of the elderly limited.

3. *Education level:* highly educated consumers are consuming organic food.
4. *Level of income:* the higher income earners are consuming more organic food.

6. RESEARCH HYPOTHESES

The hypotheses of the study relating to the demographic characteristics and their impact on consumer's decision to purchase organic products were as follows:

H01: there is no relationship between demographics and consumer desire to purchase organic foods.

To test this hypothesis, followings hypotheses have been formulated and tested:

1. The imposition of zero (H_{01a}): *there is no relationship between variable age and variable wanting to buy organic food.*
2. The imposition of zero (H_{01b}): *there is no relationship between variable gender and variable wanting to buy organic food.*
3. The imposition of zero (H_{01c}): *there is no relationship between variable level of income and variable wanting to buy organic food.*
4. The imposition of zero (H_{01d}): *there is no relationship between variable education level and variable wanting to buy organic food.*

In addition to demographic factors, motivations of other previous literature has been addressed in the impact of health literacy, knowledge of organic food in addition to their consumer's willingness to Saudi purchased organic products in view of this, following additional assumptions were drafted:

- The imposition of zero (H_{02}): *there is no relationship between variable health awareness and variable wanting to buy organic food.*
- The imposition of zero (H_{03}): *there is no relationship between variable knowledge of organic food and variable wanting to buy organic food.*
- The imposition of zero (H_{04}): *there is no relationship between variable and variable wanting to buy organic food.*

Table (1): Summary of Literature and its Hypotheses

Related literature	Hypotheses
(Quah and Tan, 2009), (Chen *et al*., 2014), (Shi Wee *et al*, 2014), (Nasir and Karakaya, 2013), (Mekdad, 2014), (Yi, 2009), (Ergin and Ozsacmaci, 2011),	(H_{01a})
(Chen *et al*., 2014), (McEachern and McClean, 2002)) (Quah and Tan, 2009), (Nasir and Karakaya, 2013), (Mekdad and others, 2014), (Yi, 2009), (Ergin and Shi Wee *et al,* Ozsacmaci, 2011)	(H_{01b})
(Bellows *et al*., (Chen *et al*., 2014) (Quah and Tan, 2009), (Shi Wee *et al*, 2014) (Chong *et al*, 2013), (Mekdad and others, 2014), (Paul and Rana, 2012) (Ergin and Ozsacmaci, 2011)(Yi,2009)	(H_{01c})
(Bellows *et al*., (Chen *et al*., 2014) (Quah and Tan, 2009) (Shi Wee *et al*,2014) (Ergin and Ozsacmaci, 2011)(2008) Mekdad and others, (2014) (Yi, 2009)	(H_{01d})
Dumea and Cuza,) (PINO, PELUSO and GUIDO, 2012)(Shi Wee et al,2014) (Chakrabarti and Baisya, 2007) (Michaelidou and Hassan, 2008), (Nasir (2012 (Lillywhite *et al*, 2011), (Idda *et al,* 2008), (Kai *et al*, 2013) and (Karakaya, 2013)	(H_{02})

(Yi, 2009), (Dickieson and Arkus, 2009), (Lea and Worsley, 2005), (Ergin and Ozsacmaci, 2011)	
(Chakrabarti and Baisya, (Dumea and Cuza, 2012), (Chen *et al*., 2014), (Dickieson (Chong et al, 2013))2007)(Nasir and Karakaya, 2013) (Yi, 2009) and Arkus, 2009)	(H_{03})
(Dickieson and (Lillywhite et al, 2011), (Kai et al, 2013), (Quah and Tan, 2009) Arkus, 2009), (Lea and Worsley, 2005)	(H_{04})

7. LIMITATIONS OF THE STUDY

Followings are the main limitations of this study:

- The study is concerned with consumers of organic food and knowledge of gender for different age groups and different levels of education and income level, living in Riyadh, Saudi Arabia.
- The electronic questionnaire was used despite of its many advantages, it also has certain disadvantages that needs to be mentioned and highlighted in the electronic questionnaire, including less credible than high-resolution paper in terms of access to the sample target accurately, as well as the communication between the researcher and the sample may be missing completely in case of high-resolution electronic paper questionnaire be reversed, a researcher in direct contact with members Sample (Wright, 2005).

On the other hand, the absence of similar studies on local and regional level made it difficult to compare the results.

8. RESEARCH METHODOLOGY

The research community was all consumers who have knowledge of organic food in the city of Riyadh. The sample was randomly selected using simple random sampling method. Search adopted field study (survey methodology) by collecting data through the design of questionnaire to survey consumers about the problem. Electronic questionnaire was distributed to ensure ease of access to a larger number of consumers and data were coded and analyzed using SPSS application. In view of the assumptions made and the nature of the study variables, the following statistical methods were used:

1. Methods of descriptive statistics for sample description (occurrences and descent).
2. Alpha Cronbach correlation coefficient (Cronbach's Alpha), to calculate the reliability questionnaire.
3. Pearson correlation coefficient (Person), to calculate the internal validity of the questionnaire.
4. The chi-squared test (Chi-Square), to test the relationship between the independent variables (demographic variables, health awareness, knowledge of organic food and organic food prices) and the dependent variable (the desire to purchase organic products) or not.

Sample size 95% confidence level and 5% error level, availability of community property by 50% then achieved the highest volume of the sample, the minimum sample size is 384 alone (Yang *et al*., 2013).

The survey contains a number of questions to measure the variables of study in order to identify the demographic characteristics of the sample. Likert scale was used to measure the extent to which the Pentagon approval of respondents on the words contained in the resolution. The

questionnaire was designed based on the objectives and hypotheses of the study and use of previous studies in this area. The questionnaire contained 28 questions. The first question is a closed two answers "Yes" and "no" intended to exclude people who do not have any knowledge of organic food, was as follows: do you have knowledge of the term "organic food"?

9. VALIDITY AND RELIABILITY TESTS

To ensure the reliability of the research tool, (Cronbach's Alpha) of reliability coefficient was obtained with the calculation result of 0.840 as table (2) shows.

Table (2): Cronbach's Alpha Coefficient of Reliability

Number of Items	Cronbach's Alpha
23	0.84

Cronbach's Alpha value (0.840) indicates that there will be stability in the results obtained by 84% when using the same questionnaire to solicit opinions again; this percentage is acceptable to achieve the research objectives.

Regarding the validity test of the research tool, factor is equal to the square root of a reliability coefficient, Cronbach's Alpha of 0.84 reached 0.917. This means that the questionnaire has the capability to measure the variables contained by 91.7% and this ratio is acceptable to achieve the research objectives. To ensure the safety of the research tool, it has been subject to the following tests:

Internal validity: tested certified internal consistency of the questionnaire where Pearson correlation coefficient to calculate the true internal coherence between all the words of phrases and college class and table (3) shows the results of true internal coherence.

Table (3): Validity Test

Item Number	Value of the correlation coefficient	Item Number	Value of the correlation coefficient
1	0.255**	13	0.369**
2	0.313**	14	0.577**
3	0.227**	15	0.383**
4	0.530**	16	0.619**
5	0.305**	17	0.597**
6	0.367**	18	0.508**
7	0.557**	19	0.398**
8	0.542**	20	0.395**
9	0.165**	21	0.416**
10	0.451**	22	0.476**
11	0.552**	23	0.400*
12	0.552**		

Note: ***Statistically significant at the level of moral less than 0.01*

It is clear from table (3) that the correlation values between score and statistical function college class, demonstrating the consistency and coherence of its tool.

10. PRESENTATION AND ANALYSIS OF DATA

10.1 Analysis

Electronic questionnaire was posted on the website (Survey Monkey) as the electronic survey has the benefits to speed the response and getting quickly and easily access to information, less effort and cost, in addition to being up and reach to a large number of people in different remote areas. Despite of all these features to high-resolution electronic but still less than the credibility of the paper questionnaire in terms of access to the sample target accurately. As well as communication between the researcher and the sample may be missing completely in the case of high-resolution electronic paper which the resolution reflected the researcher where direct contact with respondents (Wright, 2005), Complete responses from 436 sample population were collected from the city of Riyadh and this number is more than the required relative to the population of the study at the degree of confidence level 95% and 5%. Age distribution of the sample shown in the table (4), shows that more than 65 percent of the respondents are older than 30 years and below 30% were less than 35% of the total sample.

Table (4): Demographic Distribution of the Sample

Demographic	Category	Number	Percentage
Age	Less than 20 years	16	3.7
	20-25	54	12.4
	More than 25-30	74	17.0
	More than 30-40	149	34.2
	More than 40	143	32.8
Educational Level	High school or less	75	17.2
	Diploma	74	17.0
	Bachelor	219	50.2
	Post Graduate	68	15.6
Monthly Income	Less than 5000 SR	91	20.9
	5001- 10000	89	20.4
	10001 – 15000	92	21.1
	15001 – 20000	68	15.6
	More than 20000	96	22.0
Gender	Male	283	64.9
	Female	153	35.1

Regarding the level of education, more than 65% of the sample is of undergraduate and postgraduate students and the rest of the sample of 35% were diploma holders and without any degree. Table (4) shows the distribution of the educational level of respondents.

Table (4) shows the distribution of income among respondents, with 21% of them income was almost five thousand riyals per month, 20% between five thousand and ten thousand riyals per month, 21% between 10000 and 15000. Out of total 33% of respondents were entered earning more than fifteen thousand riyals.

Gender distributions of respondents, as shown in the table (4) were males, representing 65% of respondents, while the representation of females was 35%.

10.2 Hypotheses Testing

1. Relationship of demographic variables by consumer buying organic food:

A. The relationship between age and the desire of consumers to buy organic food

To test the relationship between age and the desire of the consumer to buy organic foods we used Chi-squared test (Chi-Square) to test the morale of this relationship. Table 5 shows the results of the statistical analysis.

We infer from the results of the statistical analysis in the light of the moral standards identified in this research, the possibility of moral value (0.138) is greater than (0.05) indicating the lack of statistical significance, so we accept null hypothesis (H01a) that there is no statistically significant relationship between age and the desire of consumers to purchase organic food and reject the alternative hypothesis that a relationship between a variable age and consumer desire to purchase organic foods. Under this, age has no impact on the willingness of Saudi consumers to buy organic food. So, it cannot be said that the desire of consumers to buy organic foods are affected by age of the consumer, and it is the age of demographic characteristics that are important when talking about who buys organic food consumers but whether the increased age of the consumer, or the lack of it will not have an impact on its desire to buy organic food.

B. The relationship between gender and the desire of consumers to buy organic food.

To test the relationship between gender and the desire of the consumer to buy organic food by using the (Chi-Square) to test the relationship, table (5) shows the results of the statistical analysis.

We infer from the results of the statistical analysis in the light of the moral standards identified in this research, since the possibility of moral value (0.438) is greater than (0.05) indicating the lack of statistical significance, so we accept null hypothesis (H01b) that there is no statistically significant relationship between gender and the desire of consumers to purchase organic food and reject the alternative hypothesis that a relationship between gender and the desire of consumers to buy organic food. Under this result, gender has no effect on the willingness of Saudi consumers to buy organic food, so it cannot be said that the desire of consumers to purchase organic food by consumer's gender, the gender of demographic characteristics that are important when talking about who buys organic food consumers whether the consumer was male or female will not have an impact on its desire to buy organic food.

C. The relationship between the level of income and the desire of consumers to buy organic food.

To test the relationship between the level of income and the desire of the consumer to buy organic food by using the chi-squared test (Chi-Square) to test the morale of this relationship, table (5) shows the results of statistical analysis.

Table (5): Hypothesis Test using Chi Square

Test Items	Chi square	Significant
H_{01a} The relationship between age and the desire of consumers to buy organic food	89.509	0.138
H_{01b} The relationship between gender and the desire of consumers to buy organic food	19.295	0.438
H_{01c} Relationship between level of income and the	415.88	0.156

consumer's willingness to buy organic food **H_{01d}** Relationship between level of education and the desire of consumers to buy organic food	66.871	0.174

We infer from the results of the statistical analysis in the light of the moral standards identified in this research, since the possibility of moral value (0.156) is greater than (0.05) indicating the lack of statistical significance, so accept null hypothesis (H01c) that there is no relationship between the level of income and the consumer's willingness to buy organic food, and reject the alternative hypothesis that there is a relationship between the level of income and the consumer's willingness to buy organic food. This result shows that income level has no effect on the willingness of Saudi consumers bought organic food, so it cannot be said that the desire of consumers to buy organic foods are affected by the level of income of the consumer, the income level of demographic characteristics that are important when talking about who buys organic food consumers but whether the increased level of consumer income or lack of it will not have an impact on its desire to buy organic food.

D. Relationship between education level and the desire of consumers to buy organic food.

To test the relationship between the level of income and the desire of the consumer to buy organic food by using the chi-squared test (Chi-Square) to test the morale of this relationship, table no. 11 shows the results of statistical analysis.

We infer from the results of the statistical analysis in the light of the moral standards identified in this research, since the possibility of moral value (0.174) is greater than (0.05) indicating the lack of statistical significance, so accept null hypothesis (H01d) that there is no relationship between the level of education and the desire of consumers to buy organic food and reject the alternative hypothesis that there is a relationship between education level and the desire of consumers to buy organic food. In the result the education level has no effect on the willingness of Saudi consumers bought organic food, so it cannot be said that the desire of consumers to buy organic foods are affected by education level of the consumer, the education level of demographic characteristics that are important when talking about who buys organic food consumers but whether the increased level of education for the consumer or the lack of it will not have an impact on its desire to buy organic food.

2. The relationship of health literacy to consumer desire to purchase organic foods

To test the relationship between health literacy and the desire of consumers to buy organic food the chi-squared test (Chi-Square) has been used to test the morale of this relationship. Table (6) shows the results of statistical analysis.

Table (6): The Relationship between Health knowledge and Prices of Organic Foods and Consumer's desire to Purchase

Test Items	Chi square	Significant
H_{02} The relationship between health literacy and consumer desire to purchase organic foods	676.555	0.000
H_{03} The relationship between knowledge of organic food and consumer desire to purchase organic foods	927.899	0.000
H_{04} The relationship between the prices of organic foods and the willingness of consumers to purchase organic food	454.540	0.000

We infer from the results of the statistical analysis in the light of the moral standards identified in this research, since the possibility of moral value (0.000) is smaller (0.05) indicating the existence of statistical significance. Therefore, we reject the null hypothesis (H02) that there is no relationship between health literacy and the desire of consumers to buy organic food and accept the alternative hypothesis that the relationship between health literacy and consumer desire to purchase organic foods. This result shows that consumer awareness of health has an impact on the willingness of Saudi consumers bought organic food. Therefore, it can be said that the desire of consumers to buy organic foods are affected by health awareness to the consumer. The awareness of health factors affecting the desire of consumers to buy organic food.

3. Relationship between knowledge of organic food and consumer's willingness to buy organic food

To test the relationship between knowledge of organic food and consumer's willingness to buy organic food, we use Chi-squared test (Chi-Square). Table (6) shows the results of statistical analysis.

We infer from the results of the statistical analysis in the light of the moral standards identified in this research. Since the possibility of moral value (0.000) is smaller (0.05) indicating the existence of statistical significance and, therefore, we reject the null hypothesis (H03) that there is no relationship between knowledge of organic food and consumer's willingness to buy organic food and accept the alternative hypothesis that there is a statistically significant relationship between knowledge of organic food and consumer desire to purchase organic foods. The result reveals that consumer knowledge of organic food has an effect on the willingness of Saudi consumers to buy organic food. Therefore, it can be said that the desire of consumers to buy organic foods are affected by how much knowledge the consumer has about organic foods. Thus, increasing consumer knowledge for organic food or lack of it will have an impact on the desire to buy organic food.

4. Do the prices of organic food by consumer buying organic food

To test the relationship between the prices of organic foods and the willingness of consumers to buy organic food, we use Chi-squared test (Chi-Square). Table (6) shows the results of statistical analysis.

We can conclude from the results of the statistical analysis in the light of the moral standards identified in this research. Since the possibility of moral value (0.000) is smaller (0.05) indicating the existence of statistical significance and, therefore, we reject the null hypothesis (H04) and accept the alternative hypothesis that there is relationship between food prices and consumer desire to purchase organic foods. This result shows that prices of organic food have an effect on the willingness of Saudi consumers to buy organic food. Therefore, it can be said that the desire of consumers to purchase organic food is affected by its price. Organic food prices increase or decrease will have an impact on the desire to buy organic food.

11. FINDINGS AND RECOMMENDATIONS

This section highlights the findings of research and their relations with previous studies. The results have been addressed one by one as follows:

1. Relationship between Demographic variables (age, gender, income level, education level) and consumer's willingness to buy organic food

A. The relationship between age and the desire of consumers to buy organic food:

Results revealed that there is no statistically significant relationship between age and the desire of consumers to buy organic food. This result is consistent with the results of previous studies such as study (Chen *et al.,* 2014) in China, a study (Yi, 2009) in Hong Kong, in addition to the study (Ergin and Ozsacmaci, 2011) to Turkish society.

B. The relationship between gender and the desire of consumers to buy organic food:

The study did not find any relationship between gender and the desire of consumers to buy organic food. The result is consistent with the results of other previous studies such as the Chinese study (Chen et al., 2014), research (Nasir and Karakaya, 2013) in Europe and (Ozsacmaci Ergin, 2011) in Turkish society.

C. The relationship between the level of income and the desire of consumers to buy organic food:

Results showed that there is no statistically significant relationship between the level of income and consumer to buy organic food. The result of this study is similar to the results of previous studies such as study (Chen *et al.,* 2014) in China and study (Yi, 2009) in Hong Kong.

D. The relationship between education level and the desire of consumers to buy organic food:

Results revealed that there is no statistically significant relationship between the educational level of consumers and desire to buy organic food. This conclusion is similar with the results of previous studies such as study (Chen *et al.,* 2014) in China and (Yi, 2009) in Hong Kong.

The above findings indicate the effect of demographic variables (age, gender, income, and education level) on the willingness of Saudi consumers to purchase organic food.

2. The relationship of health literacy to consumer desire to purchase organic foods:

The findings of this research are consistent with the results of many previous studies on health awareness and consumers' desire to purchase organic foods. The study (Shi et al, Wee 2014) in Malaysia, a study (Pino *et al.*, 2012), conducted in Italy, study (Nasir and Karakaya, 2013) in Europe and the study in United Kingdom (Dickieson and Arkus, 2009) confirmed the relationship of health literacy to consumer desire to purchase organic foods.

3. Relation of knowledge of organic food by consumer buying organic food:

Through this research, we found that there is relationship between knowledge of organic food and consumers to buy organic food confirmed earlier studies such as study (Chong et al, 2013) held in Kuala Lumpur in Malaysia, study (Yi, 2009) in Hong Kong, in addition to the research (Dickieson and Arkus, 2009) in the United Kingdom.

4. Do the prices of organic food affect consumers' willingness to buy organic food:

One of the important factors that affect the consumer interest in buying organic foods was consumer sensitivity to price. Through the findings of this study we found that there is an effect of the prices of organic foods on the willingness of Saudi consumers for buying such foods. This result is consistent with the results of previous studies such as study (Kai et al, 2013) in Malaysia, a study (Dickieson and Arkus, 2009) and study (Lea and Worsley, 2005) in Australia.

Table (7) summarizes the results compared with previous studies that have been addressed in this research.

Table (7): Comparison of the results with previous research results
(Survey of Literature**)**

Hypotheses	Results	Supported Studies	Unsupported Studies
H01a	Null hypothesis was accepted	(Chen *et al*., 2014), (Yi, 2009), (Ergin and Ozsacmaci, 2011)	(Shi Wee *et al.,* 2014), (Quah and Tan, 2009), (Nasir and Karakaya, 2013), (Chakrabarti and Baisya, 2007)
H0 1b	Null hypothesis was accepted	(Chen *et al*., 2014), (Yi, 2009), (Ergin and Ozsacmaci, 2011)	(Shi Wee *et al*., 2014), (Quah and Tan, 2009), (McClean 2002), (Mekdad *et al.,* 2014), (Yi, 2009)
H0 1c	Null hypothesis was accepted	(Chen *et al*., 2014), (Yi, 2009)	(Shi Wee *et al.,* 2014), (Quah and Tan, 2009), (Bellows *et al*., 2008), (Mekdad *et al.,* 2014), (Paul and Rana, 2012), (Chong *et al.,* 2013), (Ergin and Ozsacmaci, 2011)
H0 1d	Null hypothesis was accepted	(Chen *et al*., 2014), (Yi, 2009)	(Shi Wee *et al.,* 2014), (Quah and Tan, 2009), (Bellows *et al*., 2008), (Mekdad *et al*., 2014), (Ergin and Ozsacmaci, 2011) (Michaelidou and Hassan, 2008)
H0 2	Null hypothesis was rejected	(Shi Wee *et al.,* 2014), (Pino, Peluso and Guido, 2012), (Dumea and Cuza, 2012), (Chakrab Baisya, 2007), (Nasir and Karakaya, 2013), (Kai *et al.,* 2013), (Idda *et al.,* 2008), (Lillywhite *et al.,* 2011), (Chong et al., 2013), (Yi, 2009), (Dickieson and Arkus 2009), (Lea and Worsley, 2005), (Ergin and Ozsacmaci, 2011).	
H0 3	Null hypothesis was rejected	(Chen *et al.,* 2014), (Dumea and Cuza, 2012), (Chakrabarti and Baisya, 2007), (Nasir and Karakaya, 2013), (Yi, 2009), (Chong et al., 2013), (Dickieson and Arkus 2009).	
H0 4	Null hypothesis was rejected	(Quah and Tan, 2009), (Kai *et al.,* 2013), (Lillywhite *et al.,* 2011), (Dickieson and Arkus 2009), (Lea and Worsley, 2005).	

12. RECOMMENDATIONS

The findings of this study give a number of recommendations. The results of this study are new in the sense that it is one of the first studies on this subject in Kingdom Saudi Arabia. The study concluded the following recommendations:

1. Attention should be paid to introduce organic food and raise community awareness of its benefits. The producers and marketers of organic food as well as the relevant authorities such as the Ministry of Agriculture and the Saudi Association for organic agriculture should pay more attention towards its benefits.
2. There should be an increase in the volume of advertisements for organic food products and locations and focus on its health benefits for the consumers.
3. Allocation of prominent places in supermarkets to offer organic food by the producers and marketers should keep in mind. They should focus personal selling and try to identify visitors to the store and explain the difference between them and other foods. They should make available of organic food for the consumers and encourage them to try it.
4. The producers of organic food should be provided moral, material support and should be given some incentives to encourage them to continue their role in providing organic food and permanently competitive prices for other foods.
5. The students from schools and universities should be encourage to have organic foods so that they can transfer their knowledge to their family and in this way all Saudi residents can avail the benefits of organic food products.

This study is one of the first studies that addressed this topic in Saudi Arabia, so the researchers returned this study to other cities of the Kingdom and compare the results. City of Jeddah, Eastern region (cities of Dammam, Dhahran and Khobar) is likely the proposed areas for further study.

The researchers also recommend adding another dimension to the study of other demographic variables such as nationality and place of work. In addition to test the impact of other motives on the willingness of Saudi consumers to purchase organic food as a trusted organic logos stuck on organic food and organic food taste, compared to traditional foods.

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