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Estimating the impact of the Corona pandemic on changing consumer behavior towards healthy food products and green products, an applied study in Majmaah City 2022

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Abstract

This study aimed to find out the impact of the Corona pandemic on changing consumer behavior toward healthy food products and the extent of their preference for green products, as well as understand the relative importance of achieving this effect considering the demographic factors of consumers. And its connection to the change in the consumer's purchasing behavior in light of the Corona pandemic. The most important finding of the study is that there is a statistically significant relationship between the Corona pandemic and the consumer's purchase decision for healthy food products and for green products. The study also demonstrated the effect of the main variables, except for the social status variable, on the purchase of healthy food products and green products.

Keywords

green products, healthy products, consumer behavior, corona pandemic.

1. Introduction

From late 2019 to early 2020, the outbreak of the emerging coronavirus disease (COVID-19) - an infectious disease caused by a newly discovered coronavirus - spread rapidly around the world, recording huge losses in human lives and health. Attention began to be given to developing measures to reduce Among its effects on food security and nutrition, with special attention to the most vulnerable groups of society (Food Security Committee, 2020), the Kingdom of Saudi Arabia is one of the countries in the world has been affected by this epidemic and even the most affected country in the Arab world and it was ranked (35) at the level of The world resorted to putting in place measures of social divergence, imposing strict restrictions on the movement of individuals, curfews, and in some cases complete closure. So, like other countries, it resorted to closing commercial establishments, banks, markets, public services, and schools partially or completely, which disrupted economic life. There were huge losses in revenues. And jobs, especially in some small and medium enterprises, and this has resulted in a lot of psychological and physical damage and risks to individuals and societies, represented in economic and social risks. Social, political, and cultural, and despite the strict precautionary measures and their effects, the Kingdom managed to "flatten the epidemiological curve." The infection rate in the Kingdom reached 9 injuries per thousand people, the expansion of testing reached a rate of 13 thousand examinations per 100 thousand people, and the fatality rate among the infected reached 1%. Compared to the global average of 3.47% as of August 23, 2020. (Saudi Ministry of Health, 2020), some reports indicated that the Corona pandemic does not only represent an emergency in the field of public health worldwide but has also become an international economic crisis, so the pandemic has become a negative shock on both sides of supply and demand at the same time, as described by the bank's experts.

International Bank for Reconstruction and Development, 2020, this in turn made environmental organizations focus on health and seize the opportunity to get out of the crisis by using measures that contribute to Providing an environment that allows humanity to deal better with the current epidemic, future epidemics, and other crises, and to make the environmental reality that crystallized during the pandemic free from consumer practices that are destructive to the environment and public health. Although there is a difference in the behavior of individuals due to the different influences and factors, which are due to the difference in experiences, goals, and perceived values. Leaders, groups, economic potential, and all the problems that impede the achievement of the goals and desires of individuals (Fatima Al-Zahraa, 2017).

Therefore, marketing scholars view behavior as a response to human and material attempts to influence the external environment and as a reflection of its

actions and actions in order to satisfy the changing and evolving needs and desires in daily life. As confirmed by (Katona 1951) in his study of economic psychology, the study of behavior is a necessity that requires knowing the personal determinants of the individual because it is the basis of economic operations, as he sees (Skinner 1953 et Wastondvn) the need to monitor the behavior and pay attention to it in order to reach the main reasons leading to this behavior (Misbah Emad Al-Din, 2018), and this matter is considered necessary in the current situation in various societies in order to promote and direct behaviors towards healthy dietary patterns during and after the pandemic period, as this behavior represents the first line of defense to prevent disease. For example, people with obesity, diabetes, and other non-communicable diseases, studies have shown that they are at high risk of contracting the emerging coronavirus disease (Covid-19).

This confirms the importance of focusing on studying the behavior of individuals during the pandemic period to know their purchasing habits. According to (Wang, 2015), the flow of information related to a particular change in the environment affects consumer behavior on a large scale, on the other hand, (Voinea, 2011 and Filip) indicated that the abundance and scarcity of goods and services in markets affects the way he behaves. The customer suffers from different situations, for example, he may tend to store the product to avoid the problem of searching for it. As (Czarniewski, 2014) pointed out to the rest of the other marketing activities, such as prices and payment methods, that may push customers to adopt new behavior when appropriate to their financial conditions (Tariq Hashim, 2021). Knowing the truth about consumer behavior and attitudes requires identifying their behavior and studying their habits, preferences, income, culture, and other economic determinants. The greater the awareness of them, the greater the awareness of their actions and attitudes towards different goods and services, especially if accurate information about products is available. Individuals (Seddik Bilal et al., 2016) to reflect positively on their actions and behavior towards different attitudes by directing them towards products that benefit the individual with benefit and interest, and this is what the situation of individuals requires in light of the Corona pandemic. Some indicated that fear of the pandemic generated positive and negative aspects for consumers. Some studies also confirmed the necessity of Rethinking the way in which individuals plan to protect themselves healthily and preserve their environments (Xixiang Sun, Weihuan Su, 2021). Thus, it becomes imperative for production companies to abandon traditional marketing methods, and replace them with new ones that keep pace with the continuous changes in consumer purchasing desires and are even more influential. In order to control its purchase decision and direct it in the interest of its products, through the commitment of these companies to provide products that reduce the use of natural resources and toxic materials, and reduce the amount of waste and pollutants that harm the environment and individuals and in turn contribute to improving the quality of life of individuals in the face of crises and epidemics. In addition to its commitment to directing and consolidating concepts that raise

consumers' awareness towards environmentally friendly products that ensure environmental safety (Lucketal, 2009). In this context, this study came as an attempt to identify the change in Saudi consumer behavior and the high degree of awareness of the importance of healthy products and green products in light of the Corona pandemic.

2. Methodological framework

Based on the foregoing, the question posed, which the study is trying to answer, does the Corona pandemic have an effect on changing consumer behavior towards food products, and does it also have an effect on directing consumer behavior towards green products and knowing the relative importance of that effect in light of demographic factors (gender, marital status, age. Therefore, the study aimed to identify the impact of the Corona pandemic on consumer behavior and measure the consequences of that impact on consumers' tendency to buy healthy food products and green products, as well as know the impact of each of the demographic factors of the buyer and their role in guiding consumer behavior.

The importance of the study: This study derives its importance from the importance of the phenomenon of the Corona pandemic and its implications and results that aroused the curiosity of many researchers and academics and sparked research in all different human fields, including the field of consumer behavior studies because it is one of the basic keys to building strategies and marketing activities in the period of the pandemic. And after that.

2.1. The study hypotheses

The basic hypotheses of the study dictate that there is

1/ a positive effect of Covid 19 on consumer behavior in the orientation towards healthy food products in light of the relative importance of the demographic variables of the consumer represented in (gender / marital status/age / educational level/income level) and the degree of their impact.

2/ Covid-19 has a positive impact on consumer behavior in the orientation towards green products in light of the relative importance of demographic variables (gender / marital status/age / educational level and income level) and the degree of their impact.

2.2. Community and the study sample

The total study population consists of (400) individual respondents who are consumers in the community city, using the Steve Thompson equation

$$n = \frac{\left(\frac{z}{d}\right)^2 \times (0.05)^2}{1 + \frac{1}{133785} \left[\left(\frac{1.96}{0.05}\right)^2 \times (0.05)^2 - 1\right]} = 383$$

A number of (304) responses were obtained, and the analysis was conducted on them.

3. The theoretical framework

3.1. Consumer's behavior

Consumer behavior expresses a set of indirect actions and decisions, and to study it, it is necessary to know the real and personal determinants that interact with various variables in the consumer's external environment to form this behavior to the extent that led to the dynamism and mobility of this behavior and its instability at the same pace, due to the change in the influence of factors Different and related to the individual's environment, and this requires that any change in the strategies for dealing with the consumer become consistent with the change in the direction and path of change in the individual's consumption behavior, (Lewis Ali, 2014) and studies indicated the effects of the Corona pandemic on consumer behavior, and they indicated the difference in levels of anxiety among consumers She attributed this to the disparity in sex and age, and according to studies also indicated that the elderly, according to their views, feel that they are less affected than younger people of working age from a physiological point of view, and therefore the health consequences forced them to change their purchasing habits. It was also noted that women also tend to be more interested in the health effects of the epidemic compared to men, and personal factors such as age and gender are key factors for explaining behavior, and these affect the relationship between influencing factors and the purchase decision. Therefore, we believe that it is necessary to study consumer behavior during the COVID-19 pandemic and to identify on the most important new characteristics of that behavior, so that we can reveal situational details related to your purchase. Therefore, this study aims to understand some of the determinants of purchasing decisions by consumers of healthy products and foods. This, in turn, led to a change in product categories during the pandemic period, given that people make purchase choices based on new and ever-changing global and local conditions (Fazel Hesham, 2020), what the researchers indicated is consistent with what was stated by the behavioral theory, which emphasizes that consumer behavior takes place according to the structure The psychological of the individual, which is formed according to a group of individual and collective influences. Therefore, the definition of (Al-Awadly 2006) confirms behavior as a pattern followed by the consumer in his behavior and the evaluation of his thoughts and method in searching for the product, purchasing it, and using it for the products that achieve his satisfaction. Market research firm Nielsen has identified six key consumer behavior thresholds associated with the COVID-19 pandemic and its market outcomes. It was classified into purchasing patterns, including proactive purchasing, which targets the health mindset (purchasing preventive health and wellness products). Purchasing aims for reactive health management, represented by (purchasing protective equipment such as masks and hand sanitizers) and purchasing for the purpose of storage (grocery products and household necessities). The change in the classification of products And the multiplicity of purchasing patterns from the consumer's point of view

created a kind of disparity and change in product markets, which led to the categories of products most affected in interpreting behavioral relationships during the epidemic period. Research showed that people's reactions to the COVID-19 pandemic differ according to age and gender [31,36]. People have different levels of anxiety about the effects of the pandemic, and this guides their behavior.

3.2. Green marketing

The concept of green marketing emerged during the seventies of the last century in the context of what emerged from the stage of the social orientation of marketing. Sustainability in light of corporate governance, where green behavior is defined as a group of behaviors that affect access to energy and natural resources and even affect the structure and structure of the ecosystem and environmental space. Institutions should include it in determining their marketing production options and strategies, and translate this into their offering of green products, that is, environmentally friendly products (Tarabash Muhammad, Momani Abdel Qader, 2020). The main factors affecting the green buying behavior of consumers are the perception towards food and the degree of awareness of the consumer as well as knowledge of government procedures and support and beliefs about the safety of the product for use and belief in environmentally friendly products and the availability of information about the product and considered the product is the most influential.

4. Methodology, procedures, and data analysis of the study

4.1. Study population and sample

A number (400) of the research items were selected from the study population by random method, and (304) questionnaires sent to the members of the study community were obtained, and the response rate was (76%).

4.2. The stability and validity of the study tool

4.2.1. Statistical reliability and validity

The researcher used the alpha coefficient method in order to test the stability of the answers to the questionnaire paragraphs. The researcher notes that the stability of the questionnaire is 93.2%, as well as when finding honesty, which represents the square root of stability, we find it equal to 96.5%. The statistical analysis is acceptable. The study relied on the questionnaire as the main tool to obtain the necessary data to measure the change in consumer behavior due to the Corona pandemic. The degree of responses was measured according to the five-point Likert Scale. The researchers treated the data obtained from the field study statistically, using the statistical program. For Social Sciences SPSS, where the frequency distribution of the respondent's answers and the statistical analysis of

the search terms were used, where both the arithmetic mean and the standard deviation was calculated and the chi-square test was used to indicate the differences.

4.3. Personal data analysis

The percentage of females (52%) was higher than the percentage of males, as they constituted only 48% of the respondents. As for marital status, the majority of the respondents are unmarried, constituting 52.6%, while the married ones constituted only 47.4% of the total respondents. The sample members are young, as they constituted 39.5% of the respondents whose age is less than 30 years, followed by the respondents between the ages of (40-50) constituted 30.9%, then followed the respondents between the ages of (40-30) who constituted 20.7% and below, those aged 50 and over, who constituted only 8.9% of the total respondents. It also became clear that the majority of the sample at the university level constituted 54.6%, followed by those at the below-university level at 28.3%, while those at the university level reached 17.1% of the total respondents. With regard to income, it is clear that the majority of respondents have average incomes, as they constituted 59.2%, followed by those with high incomes at 23%, and those with low incomes at 17.8% of the total respondents.

4.4. Calculating the weighted mean

Descriptive statistics for the first hypothesis statements
 Descriptive tests (mean, standard deviation, and chi-square)

4.4.1. The first hypothesis

Table 1. Descriptive statistics for first hypothesis statements

Paragraph	SD	Mean	Chi-square	Significance level	Result
Because of the Corona pandemic, my behavior has become positive when buying and consuming food products	1.292	2.50	69.388	0.00	Accepted
It became better to buy smaller quantities during the Corona pandemic period	1.299	2.90	83.237	0.00	Accepted
The spread of Corona prompted me to buy and store the necessary products	1.398	2.91	38.270	0.00	Accepted
The Corona pandemic caused me to visit e-marketing sites	1.421	2.72	67.612	0.00	Accepted
In light of the Corona pandemic, my decisions were related to buying healthy food products	1.377	2.77	41.855	0.00	Accepted
Get the product in innovative ways other than the traditional methods before the spread of the Corona pandemic	1.350	2.91	56.822	0.00	Accepted

Paragraph	SD	Mean	Chi-square	Significance level	Result
The best food products that increase my health immunity in light of the pandemic	1.321	2.57	68.204	0.00	Accepted
Before buying food products, I became keener to collect information about them, and I don't care about advertising and promotion	1.337	2.88	51.263	0.00	Accepted
In light of the Corona pandemic, I buy products. My decisions were related to buying high-quality products	1.322	2.80	44.980	0.00	Accepted
I discovered that there are more useful and affordable alternatives that can be easily accessed to obtain the product	1.361	2.80	48.664	0.00	Accepted
The spread of the Corona pandemic caused me to postpone my purchase of some durable goods such as cars and others	1.479	2.90	93.632	0.00	Accepted
The spread of Corona prompted me to purchase products by subscribing to social media groups	1.260	3.17	83.039	0.00	Accepted
My decision when buying food products has become unrelated to the brands I previously preferred	1.309	3.04	60.737	0.00	Accepted
I have become acquiring the product in innovative ways other than the traditional methods that I used before the spread of the Corona pandemic	1.307	2.79	67.053	0.00	Accepted

From the above table, it is clear that:

1. The average value of the study sample for the first statement was (2.5) with a standard deviation of (1.292) and the chi-square value was (69.388) at the significance level (.000), which is less than the significance level of 0.05. This value indicates that most of the sample agrees with the first statement.
2. The mean value of the study sample for the second statement was (2.9), with a standard deviation (1.299) and the chi-square value (83.237) at the level of significance (0.00), which is less than the level of significance 0.05. This value indicates that most of the respondents agree with the second statement.
3. The mean of the study sample for the third statement was (2.91) with a standard deviation (of 1.398), and the chi-square value was (38.270) at the significance level (.000), which is less than the significance level of 0.05. This value indicates that most of the sample agrees with the third statement.
4. The mean of the study sample for the fourth statement was (2.72) with a standard deviation of (1.421)) and the chi-square value was (67.612) at the significance level (.000), which is less than the significance level of 0.05. This value indicates that most of the sample agree with the fourth statement.

5. The average value of the study sample for the fifth statement was (2.77) with a standard deviation (1.377) and the chi-square value was (41.855) at the significance level (.000), which is less than the significance level of 0.05. This value indicates that most of the sample agree with the fifth statement.

6. The mean of the study sample for the sixth statement was (2.91) with a standard deviation of (1.35) and the chi-square value was (56.822) at the significance level (.000), which is less than the significance level of 0.05, and this value indicates that most of the sample strongly agree with the sixth statement

7. The mean of the study sample for the seventh statement was (2.57) with a standard deviation of (1.321) and the chi-square value was (68.204) at the significance level (.000), which is less than the significance level of 0.05. This value indicates that most of the sample members agree strongly on the seventh statement. .

8. The mean of the study sample for the eighth statement was (2.88) with a standard deviation of (1.337) and the chi-square value was (51.263) at the significance level (.000), which is less than the significance level of 0.05. This value indicates that most of the sample members agree strongly on the eighth statement. .

9. The mean of the study sample for the ninth statement was (2.8) with a standard deviation (1.322) and the chi-square value was (44.980) with a significance level (.000), which is less than the significance level of 0.05. This value indicates that most of the sample members strongly agree with the ninth statement.

10. The average value of the study sample for the ninth statement was (2.8) with a standard deviation (1.361) and the chi-square value was (48.664) at the significance level (.000), which is less than the significance level of 0.05. This value indicates that most of the sample members agree strongly on the ninth statement.

11. The mean of the study sample for the eleventh statement was (2.9) with a standard deviation of (1.479) and the chi-square value was (93.632) at the significance level (.000), which is less than the significance level of 0.05. This value indicates that most of the sample strongly agree with the statement. Eleventh.

12. The mean of the study sample for the twelfth statement was (3.17) with a standard deviation of 1.260), and the chi-square value was (83.039) at the level of significance (.000), which is less than the level of significance. This value indicates that most of the respondents strongly agree with the twelfth statement. .

13. The mean of the study sample for the thirteenth statement was (3.04) with a standard deviation of (1.309) and the chi-square value was (60.737) at the level of significance (.000), which is less than the level of significance. This value indicates that most of the respondents strongly agree with the thirteenth statement.

14. The mean of the study sample for the fourteenth statement was (2.79) with a standard deviation of 1.307), and the chi-square value was (67.053) at the level of significance (.000), which is less than the level of significance. This value indicates that most of the respondents strongly agree with the fourteenth statement.

4.4.2. The second hypothesis

Table 2. Descriptive statistics for second hypothesis statements.

Paragraph	SD	Mean	Chi-square	Significance level	Result
The best environmentally friendly food packaging has become biodegradable	1.353	2.85	66.362	0.00	Accepted
Become keener on the information on food products in the statement card	1.364	2.87	49.454	0.00	Accepted
Better buy products made from natural materials	1.406	2.78	59.092	0.00	Accepted
Increased awareness of environmentally friendly products (green products)	1.313	2.89	33.993	0.00	Accepted
She became more concerned about the environment and how to preserve it	1.347	2.73	74.059	0.00	Accepted
My interest in green products pages increased through social media	1.322	3.10	41.329	0.00	Accepted
I am more interested in getting to know the companies that support environmental protection organizations and their associations	1.300	3.17	46.757	0.00	Accepted
I prefer dealing with companies that use raw materials that are less harmful to the environment	1.349	3.00	40.770	0.00	Accepted
The decision to buy food products was linked to my knowledge and understanding of environmental conservation laws and regulations	1.345	2.99	44.520	0.00	Accepted
I seek to instill the values of preserving the environment in my purchasing behavior and to continue it in the future	1.404	2.92	42.809	0.00	Accepted

Paragraph	SD	Mean	Chi-square	Significance level	Result
The decision to buy products has become associated with environmentally friendly brands and labels that do not cause pollution	1.304	2.99	72.941	0.00	Accepted
I do not care about the price when buying food products that do not harm the environment	1.337	3.24	62.480	0.00	Accepted
My decisions in buying food products and my interest in preserving the environment ends with the end of the Corona pandemic	1.299	3.54	91.625	0.00	Accepted
Valid N (listwise)				0.00	Accepted

From the above table, it is clear that:

1. The mean of the study sample for the first statement was (2.85) with a standard deviation (of 1.353) and a chi-square value (of 66.362) at the level of significance (.000), which is less than the level of significance (0.05). This value indicates that most of the sample members strongly agree with the statement The first.
2. The mean of the study sample for the second statement was (2.87) with a standard deviation (of 1.364) and a chi-square value (of 49.454) at the significance level (.000), which is less than the level of significance (0.05). This value indicates that most of the sample strongly agree with the statement. the second
3. The meanof the study sample for the third statement was (2.78) with a standard deviation of (1.406) and the chi-square value was (59.092) at the level of significance (.000), which is less than the level of significance (0.05). This value indicates that most of the sample strongly agree with the statement. Third
4. The mean of the study sample for the fourth statement was (2.89) with a standard deviation of (1.313) and the chi-square value was (33.993) at the level of significance (.000), which is less than the level of significance (0.05). This value indicates that most of the sample strongly agree with the statement. fourth.
5. The mean of the study sample for the fifth statement was (2.73) with a standard deviation of (1.347) and the chi-square value was (74.059) at the level of significance (.000), which is less than the level of significance (0.05). This value indicates that most of the sample members strongly agree with the statement Fifth.
6. The mean of the study sample for the sixth statement was (3.10) with a standard deviation of (1.322) and the chi-square value was (41.329) at the level of significance (.005), which is less than the level of significance (0.05), and this value indicates that most of the sample members strongly agree with the statement sixth.
7. The mean of the study sample for the seventh statement was (3.17) with a

standard deviation of (1.300) and the chi-square value was (46.757) at the level of significance (.000), which is less than the level of significance (0.05). This value indicates that most of the sample members strongly agree with the statement seventh.

8. The mean of the study sample for the eighth statement was (3.00) with a standard deviation (1.349) and a chi-square value (40.770a) at the level of significance (.000), which is less than the level of significance (0.05). This value indicates that most of the sample agrees strongly with The eighth phrase.

9. The mean of the study sample for the ninth statement was (2.99) with a standard deviation (1.345) and the chi-square value was (44.520) at the level of significance (.000), which is less than the level of significance (0.05). This value indicates that most of the sample members agree strongly on the statement ninth.

10. The average value of the study sample for the tenth statement was (2.92) with a standard deviation of (1.404) and the chi-square value was (42.809) at the level of significance (.000), which is less than the level of significance (0.05). This value indicates that most of the sample strongly agree with the statement tenth.

11. The mean of the study sample for the eleventh statement was (2.99) with a standard deviation of (1.304) and the chi-square value was (72.941) at the level of significance (.000), which is less than the level of significance (0.05). This value indicates that most of the sample agree strongly on the Eleventh phrase.

12. The mean of the study sample for the eleventh statement was (3.24) with a standard deviation of (1.337) and the chi-square value was (62.480) at the level of significance (.000), which is less than the level of significance (0.05). This value indicates that most of the sample agree strongly on the Eleventh phrase.

13. The mean of the study sample for the eleventh statement was (3.54) with a standard deviation of (1.299) and the chi-square value was (91.625) at the level of significance (.000), which is less than the level of significance (0.05). This value indicates that most of the sample agree strongly on the Eleventh phrase.

4.5. Data analysis of the third hypothesis

There is a statistically significant relationship between the Corona pandemic and the impact of the consumer's personal factors (gender, marital status, age, level of education, income) when buying healthy food products and buying green products

4.5.1. Testing the association between type and the purchase of healthy food products

The table below shows the association between the type and purchase of healthy food products, assuming that:

There is no statistically significant relationship between type and purchase of healthy food products: H_0

There is a statistically significant relationship between type and purchase of healthy food products: H_1

Table 3. The association between type and purchase of healthy food products.

		Because of the Corona pandemic, my behavior has become positive when buying and consuming food products					Total
		Strongly agree	Agree	Neutral	Disagree	Strongly disagree	
Gender	Male	47	41	9	33	16	146
	Female	31	65	26	26	10	158
Total		78	106	35	59	26	304

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	18.744 ^a	4	.001
Likelihood Ratio	19.160	4	.001
Linear-by-Linear Association	.050	1	.823
N of Valid Cases	304		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 12.49.

According to the two tables above, we find that the level of significance for the tabular P value is (0.001), i.e. less than 0.05, and this makes us reject the null hypothesis and accept the alternative hypothesis, i.e. there is a statistically significant relationship between the type and the purchase of healthy food products, that is, the type affects the purchase of healthy food products, as We find that women, for example, are more likely to buy these products than men.

4.5.2. Testing the association between marital status and purchasing healthy food products

The table below shows the association between marital status and the purchase of healthy food products, assuming that:

There is no statistically significant relationship between marital status and the purchase of healthy food products: H_0

There is a statistically significant relationship between marital status and the purchase of healthy food products: H_1

Table 4. The association between marital status and the purchase of healthy food products.

		Because of the Corona pandemic, my behavior has become positive when buying and consuming food products					Total
		Strongly agree	Agree	Neutral	Disagree	Strongly disagree	
Marital status	Married	45	52	12	23	12	144
	Un Married	33	54	23	36	14	160
Total		78	106	35	59	26	304

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.538 ^a	4	.110
Likelihood Ratio	7.607	4	.107
Linear-by-Linear Association	4.354	1	.037
N of Valid Cases	304		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 12.32.

By looking at the two tables above, we find that the level of significance of the tabular P value is (0.110), i.e. greater than 0.05, and this makes us accept the null hypothesis, meaning there is no statistically significant relationship between the marital status and the purchase of healthy food products, meaning that the marital status does not affect the purchase of food products health.

4.5.3. Testing the association between age and the purchase of healthy food products

The table below shows the association between age and the purchase of healthy food products, assuming that:

There is no statistically significant relationship between age and the purchase of healthy food products: H₀

There is a statistically significant relationship between age and the purchase of healthy food products: H₁

Table 5. The association between age and purchase of healthy food products.

		Because of the Corona pandemic, my behavior has become positive when buying and consuming food products					Total
		Strongly agree	Agree	Neutral	Disagree	Strongly disagree	
Age	Less than 30	20	45	21	25	9	120
	30-40	19	22	5	11	6	63
	40-50	30	34	3	20	7	94
	Above 50	9	5	6	3	4	27
Total		78	106	35	59	26	304

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	24.439 ^a	12	.018
Likelihood Ratio	26.457	12	.009
Linear-by-Linear Association	1.479	1	.224
N of Valid Cases	304		

a. 2 cells (10.0%) have an expected count of less than 5. The minimum expected count is 2.31.

According to the two tables above, we find that the level of significance for the tabular P value is (0.018), i.e. less than 0.05, and this makes us reject the null hypothesis and accept the alternative hypothesis, i.e. there is a statistically significant relationship between age and the purchase of healthy food products, meaning that age affects the purchase of healthy food products.

4.5.4. Testing the correlation between the educational level and the purchase of healthy food products

The table below shows the correlation between the educational level and the purchase of healthy food products, assuming that:

There is no statistically significant relationship between the educational level and the purchase of healthy food products: H_0

There is a statistically significant relationship between the educational level and the purchase of healthy food products: H_1

Table 6. The association between the educational level and the purchase of healthy food products.

		Because of the Corona pandemic, my behavior has become positive when buying and consuming food products					Total
		Strongly agree	Agree	Neutral	Disagree	Strongly disagree	
Education level	without undergraduate	21	22	16	21	6	86
	Undergraduate	30	71	19	33	13	166
	Graduated	27	13	0	5	7	52
Total		78	106	35	59	26	304

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	39.569 ^a	8	.000
Likelihood Ratio	42.645	8	.000
Linear-by-Linear Association	5.124	1	.024
N of Valid Cases	304		

a. 1 cells (6.7%) have expected count less than 5. The minimum expected count is 4.45.

According to the two tables above, we find that the significance level of the tabular P value is (0.00), i.e. less than 0.05, and this makes us reject the null hypothesis and accept the alternative hypothesis, i.e. there is a statistical significant relationship between the educational level and the purchase of healthy food products, meaning that the educational level affects the purchase of food products health.

4.5.5. Test the association between income and the purchase of healthy food products

The table below shows the correlation between income and the purchase of healthy food products, assuming that:

There is no statistically significant relationship between income and the purchase of healthy food products: H_0

There is a statistically significant relationship between income and the purchase of healthy food products: H_1

Table 7. The association between income and the purchase of healthy food products.

		Because of the Corona pandemic, my behavior has become positive when buying and consuming food products					Total
		Strongly agree	Agree	Neutral	Disagree	Strongly disagree	
Income	High income	27	20	7	9	7	70
	Average income	41	74	19	42	4	180
	Poor income	10	12	9	8	15	54
Total		78	106	35	59	26	304

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	48.523 ^a	8	.000
Likelihood Ratio	43.198	8	.000
Linear-by-Linear Association	11.699	1	.001
N of Valid Cases	304		

a. 1 cells (6.7%) have expected count less than 5. The minimum expected count is 4.62.

According to the two tables above, we find that the level of significance of the tabular P value is (0.000), i.e. less than 0.05, and this makes us reject the null hypothesis and accept the alternative hypothesis, i.e. there is a statistically significant relationship between income and the purchase of healthy food products, meaning that income affects the purchase of healthy food products.

4.5.6. Testing the correlation between the type and the purchase of green products

The table below shows the association between the type and purchase of green products, assuming that:

There is no statistically significant relationship between type and purchase of green products: H_0

There is a statistically significant relationship between the type and purchase of green products: H_1

Table 8. The association between type and purchase of green products.

		The best environmentally friendly food packaging has become biodegradable					Total
		Strongly agree	Agree	Neutral	Disagree	Strongly disagree	
Gender	Male	21	36	9	52	28	146
	Female	39	53	16	44	6	158
Total		60	89	25	96	34	304

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	25.075 ^a	4	.000
Likelihood Ratio	26.377	4	.000
Linear-by-Linear Association	19.188	1	.000
N of Valid Cases	304		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 12.01.

According to the two tables above, we find that the level of significance for the tabular P value is (0.00), less than 0.05, and this makes us reject the null hypothesis and accept the alternative hypothesis, i.e. there is a statistically significant relationship between the type and the purchase of healthy food products, that is, the type affects the purchase of green products, where We find that women, for example, may prefer to buy green products more than men, or vice versa.

4.5.7. Testing the association between marital status and purchasing green products

The table below shows the correlation between marital status and the purchase of green products, assuming that:

There is no statistically significant relationship between marital status and purchasing green products: H_0

There is a statistically significant relationship between marital status and the purchase of green products: H_1

Table 9. The association between marital status and the purchase of green products.

		The best environmentally friendly food packaging has become biodegradable					Total
		Strongly agree	Agree	Neutral	Disagree	Strongly disagree	
Marital status	Married	28	45	6	51	14	144
	Un Married	32	44	19	45	20	160
Total		60	89	25	96	34	304

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.651 ^a	4	.105
Likelihood Ratio	7.979	4	.092
Linear-by-Linear Association	.003	1	.954
N of Valid Cases	304		

According to the two tables above, we find that the significance level of the tabular P value is (0.105), i.e. greater than 0.05, and this makes us accept the null hypothesis and reject the alternative hypothesis, i.e. there is no statistical significant relationship between the marital status and the purchase of healthy food products, meaning that the marital status does not affect the purchase green products.

4.5.8. Testing the correlation between age and buying green products

The table below shows the association between age and the purchase of green products, assuming that:

There is no statistically significant relationship between age and purchase of green products: H_0

There is a statistically significant relationship between age and the purchase of green products: H_1

Table 10. Association between age and purchase of green products.

		The best environmentally friendly food packaging has become biodegradable					Total
		Strongly agree	Agree	Neutral	Disagree	Strongly disagree	
Age	Less than 30	27	38	17	24	14	120
	30-40	14	17	2	23	7	63
	40-50	16	27	4	36	11	94
	Above 50	3	7	2	13	2	27
Total		60	89	25	96	34	304

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	21.082 ^a	12	.049
Likelihood Ratio	21.711	12	.041
Linear-by-Linear Association	4.476	1	.034
N of Valid Cases	304		

According to the two tables above, we find that the significance level of the tabular P value is (0.49), i.e. less than 0.05, and this makes us reject the null hypothesis and accept the alternative hypothesis, i.e. there is a statistical significant relationship between age and the purchase of green products, meaning that age affects the purchase of green products.

4.5.9. Testing the association between the educational level and the purchase of green products

The table below shows the association between the educational level and the purchase of green products, assuming that: There is no statistically significant relationship between educational level and purchasing green products: H₀

There is a statistically significant relationship between the educational level and the purchase of green products: H₁

Table 11. The association between the educational level and the purchase of green products.

		The best environmentally friendly food packaging has become biodegradable					Total
		Strongly agree	Agree	Neutral	Disagree	Strongly disagree	
Education level	without undergraduate	19	22	3	31	11	19
	Undergraduate	25	51	20	52	18	25
	Graduated	16	16	2	13	5	16
Total		60	89	25	96	34	60

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	13.946 ^a	8	.083
Likelihood Ratio	14.257	8	.075
Linear-by-Linear Association	2.161	1	.142
N of Valid Cases	304		

According to the above two tables, we find that the level of significance of the tabular P value is (0.083), ie

It is greater than 0.05, and this makes us accept the null hypothesis and reject the alternative hypothesis, that is, there is no statistically significant relationship between the educational level and the purchase of green products, that is, the educational level does not affect the purchase of green products.

4.5.10. Testing the association between income and buying green products

The table below shows the correlation between income and the purchase of green products, assuming that:

There is no statistically significant relationship between income and the purchase of green products: H_0

There is a statistically significant relationship between income and the purchase of green products: H_1

Table 12. The coupling between income and the purchase of green products.

		The best environmentally friendly food packaging has become biodegradable					Total
		Strongly agree	Agree	Neutral	Disagree	Strongly disagree	
Income	High income	14	23	4	20	9	70
	Average income	37	61	15	54	13	180
	Poor income	9	5	6	22	12	54
Total		60	89	25	96	34	304

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	20.775 ^a	8	.008
Likelihood Ratio	22.359	8	.004
Linear-by-Linear Association	5.020	1	.025
N of Valid Cases	304		

1 cells (6.7%) have expected count less than 5. The minimum expected count is 4.44

According to the two tables above, we find that the level of significance of the tabulated P value is (0.008), i.e. less than 0.05, and this makes us reject the null hypothesis and accept the alternative hypothesis, that is, there is a statistically significant relationship between income and the purchase of healthy food products, that is, the income affects the purchase of green products.

5. Results

After conducting the applied study, the study reached the following results:
 1/ The percentage of females (52%) is higher than the percentage of males, as they constituted only 48% of the respondents.

- 2/ The majority of the respondents are unmarried, as they constituted 52.6%, while the married persons constituted only 47.4% of the total respondents.
- 3/ The majority of the sample were young, as they constituted 39.5% of the respondents whose age was less than 30 years.
- 4/ The majority of the sample was at the university level, where they constituted 54.6%
- 5/ The majority of the respondents have an average income, making up 59.2%
- 6/ The majority of respondents agree with the statements of the first hypothesis, which states that (there is a statistically significant relationship between the Corona pandemic and the consumer's purchase decision for healthy food products), so this hypothesis was accepted.
- 7/ The majority of respondents agree with the statements of the second hypothesis, which states that (there is a statistically significant relationship between the Corona pandemic and the consumer's decision to buy green products), so this hypothesis was accepted.
- 8/ There is a statistically significant relationship between the type and the purchase of healthy food products, meaning that the type affects the purchase of healthy food products
- 9/ There is no statistically significant relationship between social status and the purchase of healthy food products, meaning that social status does not affect the purchase of healthy food products
- 10/ There is a statistically significant relationship between age and the purchase of healthy food products, meaning that age affects the purchase of healthy food products
- 11/ There is a statistically significant relationship between the educational level and the purchase of healthy food products, meaning that the educational level affects the purchase of healthy food products.
- 12/ There is a statistically significant relationship between income and the purchase of healthy food products, meaning that income affects the purchase of healthy food products
- 13/ There is a statistically significant relationship between type and the purchase of green products, meaning that the type affects the purchase of green products
- 14/ There is no statistically significant relationship between social status and the purchase of green products, meaning that social status does not affect the purchase of green products
- 15/ There is a statistically significant relationship between age and the purchase of green products, meaning that age affects the purchase of green products.
- 16/ There is no statistically significant relationship between the educational level and the purchase of green products, meaning that the educational level does not affect the purchase of green products.
- 17/ There is a statistically significant relationship between income and the purchase of green products, meaning that income affects the purchase of green products.

- 18/ In the first hypothesis, when finding the linear regression equation, it was proven that there is a weak inverse relationship between the dependent variable, which is the purchase of healthy food products, each of the independent variables gender, age, and educational level, and a weak direct correlation between the dependent variable and both marital status and income, and the relationship between the dependent variable Both gender and age are significant.
- 19/ In the first hypothesis, when finding the linear regression equation, it was proven that there is a weak inverse relationship between the dependent variable, which is the purchase of healthy food products, each of the independent variables, type, and educational level, and a weak direct correlation between the dependent variable and both marital status, age and income, and the relationship between the dependent variable and both From the social status and educational level is not significant.
- 20/ Through the spread of the residuals in the first hypothesis, it became clear that all variables are distributed normally.
- 20/ Through the spread of the residuals in the second hypothesis, it also became clear that all variables are distributed normally.

6. Recommendations

In light of the study's findings, we recommend the following:

- 1- Work to increase consumers' awareness of the importance of healthy products and green products.
- 2- Changing the consumer's purchasing behavior to shift towards green products and clarifying their benefits at the level of public health.
- 3- Motivating companies to move towards producing green products as a moral commitment from the company towards society (social responsibility).
- 4- The need to educate all stakeholders about the positive impact of green products on sustainable development efforts.
- 5- Changing consumer behavior towards green products requires concerted efforts between the consumer, the producing companies, and the state.

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