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# Environmental Concern, Health Consciousness and Purchase Intention of Green Products: An Application of Extended Theory of Planned Behavior

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## Abstract
Human health is crucial for every human being with their right to utilize and opt for safe and healthy products. The main reasons for consumer awareness about the products they use in their daily life are health consciousness and environmental concern. The environment is affected due to several issues such as pollution etc. it has been the most the cause of concern for general public and as a result the concept of green environment and the green product has emerged in many countries. As far as Iraq is a concern this issue is at infancy level especially for new consumers, however, the growth in the demand for environmentally friendly products is an increasing trend. This paper aims to find out the purchase intention of consumers towards green products. For this purpose, the sample was selected from Salahaddin University Iraq. The sample size was 161 students from the university. The hypotheses were tested using Smart PLS 3 and the results for the inner and outer model were presented in the study. The results showed 10 significant hypotheses however it was limited to the sample of university students because it is supposed that university student is more focused towards their health as well as environment. Moreover, theoretically this study is limited to the theory of planned behavior. The study helps policymakers to formulate strategies to aware consumers regarding their health and environmental issues especially the students. The study also discusses the recommendations.

**Keywords:** Environmental concern; Health consciousness; Purchase intention towards green products; The extended theory of planned behavior.

## 1. Introduction
The quality of food is the priority of the consumers' everywhere in the world as it is a basic need for their life. This priority is the resultant of their concern regarding food products which are much responsive to environmental concern, perceived consumers effectiveness, health consciousness, and social norms are extremely growing progressively (Haytko and Matulich, 2008). This concern has brought numerous organization into action for the development of green products. However, it is also necessary that consumers are aware of such products and their benefits towards their health and environment so that they may have a lifestyle with better nutrition. Moreover, there is a consumer who has the right to purchase and consumer quality food. The concern regarding food safety and health consciousness is essential.

Iraq is considered as a developing country having different challenges to develop their economy and infrastructure but the most important challenge they are having is the water pollute sites that are reported 20,702 by the. It comprises manufacturing concern organizations, sewerage transformation plants, and other farms as well. Increasing environmental issue show how consumers behave especially in consuming green products (Eneizan and Obaid, 2016; Eneizan *et al.*, 2016b; Grinstein and Riefler, 2015).

The changing environment of the current word has emerged the concept in the mind of the consumer to experience with the change decision making regarding products or services. It is evident that green products having high perception and necessity because these are healthy and bringing the change in the people life and livelihood. Green products thus can be defined as the goods that have better quality, giving nutritious and produced sustainable development principle (Charter and Tischner, 2017). According to Chan and Lau (2002), consumption of green concept can be recyclable, beneficial to the environment and concern on the natural world. The consumers have to start being responsible and realize seoir consumption will give a huge impact on the environment (Kalafatis *et al.*, 1999). It becomes evident for the consumers to undertake the information and knowledge regarding the green products as well Eneizan *et al.* (2016a). However; once the perception of the consumers will change and towards the green products then it is likely possible that they will change their purchasing intention and style as well towards the green products in future (Biswas and Roy, 2015).

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As Iraq moving towards becoming a developed country; where the population has been increased by the time. Iraq is getting educated and will be concerned with the environment, food safety, and animal welfare. The change to go green was along with the change in consumer preferences, the standard of living, improved quality in agriculture and marketing in order to encourage society to increase the demand for green products. According to Giesbrecht (2016), green products can be categorized wheatgrass and cereal grasses such as barley, oats as well as spinach, celery, and parsley. The green products are having good quality especially in the food area and having established market internationally (Eneizan *et al.*, 2015c). Green products are having a specialist in the food area with good quality because it contains nutrition, naturally nourished and having friends with the environment.

Furthermore, more than 100 nations around the world still have no legislation to implement the policies of international food safety systems. The World Health Organization movement aimed to increases the knowledge regarding the green products and makes the people health conscious so that they will be able to have a balanced diet that is prepared or grow by considering the hygiene factor as well. The phenomenon of food safety and green concept also affect Iraqi consumers. Nowadays they are now looking for foods which have wholesomeness, tastiness, healthier and safer for their lifestyle. Many Iraqi's are beginning to consume green products while care about their health (Eneizan *et al.*, 2015b; Kanchanapibul *et al.*, 2014). At the student level, they should be having enough knowledge regarding the hygienic diet and food so the problem will be having minimum impact on the society. Students are motivated towards fast food because it is quick, easy to access and readily available to eat (Hawkes *et al.*, 2015). This will increase the analysis of statistical on fast food consumption. Lack of exposure to green products causes students to choose and consume fast food. Purchase intention of green products has become a common thing among Iraq especially the students.

Thereafter, fast food has become an important eating consumption among students. However, government legislation is needed to plan and implement the consumption of green products and focus on healthy food choices compared to fast food. The aim of the researcher is to motivate the student towards healthy and balanced food in future prospect. For the students, it is necessary to have a balanced and nutritive diet that enables them to work hard and become efficient in their studies.

## 1.1. Theoretical Framework and Hypotheses

The theoretical framework has been shown in Figure 1. In this theoretical framework, eleven hypotheses are being extracted for the six constructs that include independent variables such as; Environment Concern, Health Consciousness, Attitude Toward Purchasing Green Products, Social Norms and Perceived Behavior Control; these all will be explaining the purchase intention of green products.

**Figure-1.** Conceptual framework.
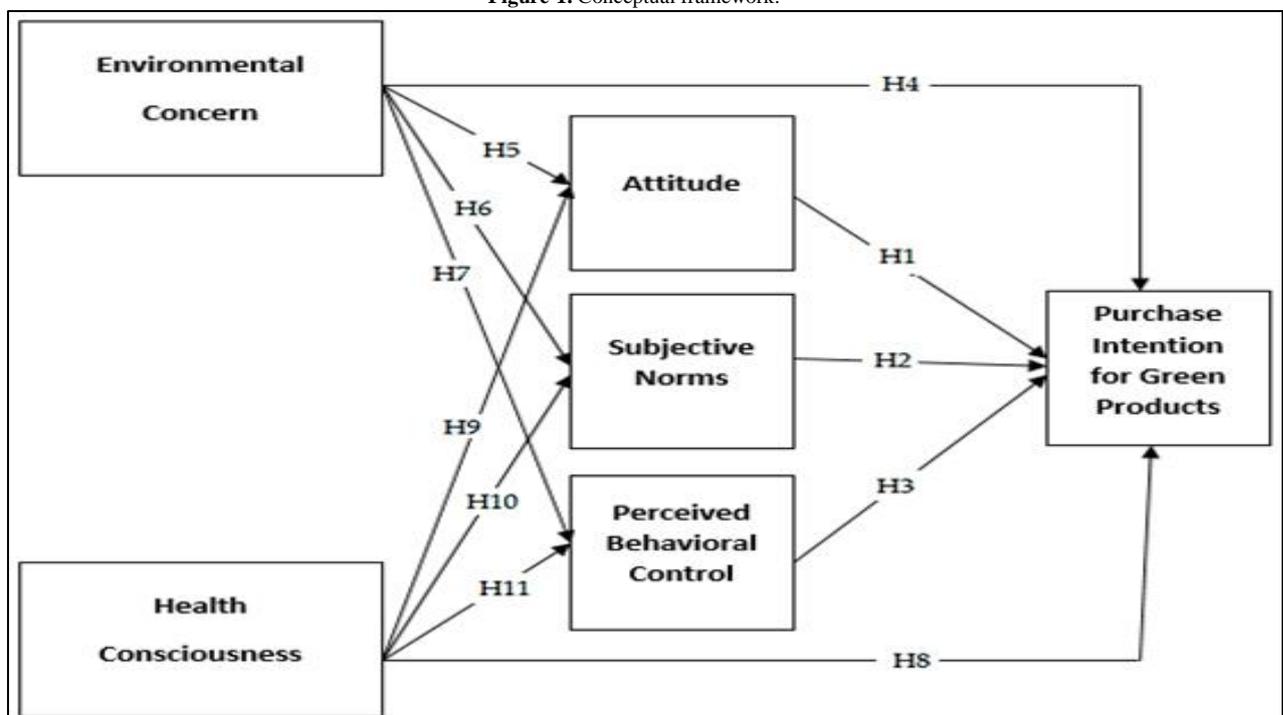


## 1.2. Purchase Intention of Green Products

As far as the consumer consciousness is a concern it is suggested that it is the consumer will to use or consume any product or service which is being available to them in the market. In addition, creating awareness of a consumer is beginning to create their rights and duties on what they consume. This involved the information, choice, safety and the right to be heard (Han and Kim, 2010). Currently, consumers are having developed concern towards the environmental safety and societal development issues (Eneizan and Abd Wahab, 2016; Eneizan *et al.*, 2018). Since the trends of green products are become sustainable consumption, it necessary to stimulate public awareness among Iraqi citizen. Public awareness has become the most significant factor affecting environmental problems (Biswas and

Roy, 2015; Eneizan *et al.*, 2015a; Eneizan and Abd Wahab, 2016). It is highly important to enhance the concern and seriousness towards the awareness and behaviors that are having an impact upon attitude.

The understanding of the green products among the Iraqi people is at the introductory stage where people are having lack of knowledge and information about it. On the contrary; there is a number of movement are being run in order to promote and provide education regarding the green products and its benefits. The information is only a little about the purchase intention of green products in Iraq. The main issue here, whether the Iraqi consumer's familiars with the green concept and being careful of the environment, health, and food safety (Scott and Vigar-Ellis, 2014). The green products consumption has continuously increased the time by the time during the past decade in the world. As mentioned before, the demand for green products is increasing due to awareness of environmental and health conscious. It is considered that people of Iraq will be having knowledge and awareness about the green products in the coming future. As far as China is a concern; they are having a growing concern about the green products among the consumers. Past research by Li (2016), in Beijing, the majority of the household are familiar with the green products and green label. They show great consciousness of health and food safety indeed. They indicate that 60% of the consumers' belief green products are safer than conventional food and at the same time they have efficient and good knowledge of the concept of the green product. So; the feature of developing the understanding of the green products among the people of Iraq is the most concern issue for the researcher and for the current research study as well.

It is evident that attitude and knowledge is the main feature of predicting consumer behavior intention towards green products usage and consumption. Consumption of green products as well as the broad food industry in Iraq to understand the consumer's motives in consuming these products. Consumption of green products is one of an option without damaging the environment and contributes to a better sustainable world ahead. Currently, consumers believe the consumption of green products can provide good quality and better performance in their life. As mentioned earlier, green products are safe for consumption, fine in quality, and provide nutritiously. In Iraq; Green products are having high potential that will lead Iraq towards the developed county in the future (Kanchanapibul *et al.,* 2014).

## 1.3. The Extended TPB Model

TPB is considered as one of the top models that can predict the intention of the consumers. It is necessary according to the TPB model; that consumer should be encouraged to do an evident behavior. This consideration is highly difficult in order to conduct the study of consumer behavior (Taylor and Todd, 1995). Therefore, the extended Theory of Planned Behavior is the ideal grand theory for this study. It proposed the behavioral intention as the greatest predictor and is known as a product of these theories. Furthermore, it is also the extension of TPB that had been constructed and developed this theory by ensuring the detailed components. Chan and Lau (2002); Ling-Yee (1997) have extended the TPB to describe the multidimensional. The importance of this theory brings information on specific factors that influence behavioral intention. Besides, it also provides further managerial information that is useful for the decision maker. Extended TPB had been separated into three blocks. Attitudinal belief structure is being discussed in the first block of the model. The other block is associated with the normative belief structure and remaining block is associated with the presentation of the behavior control.

## 1.4. Attitude Towards Purchasing Green Products

The green products bring the change in the attitude of the consumers that they believe in the reduction of pollution from the environment and they are they part of it. The attitude is measured as an element of the personality variables and used in environmental studies. The intention and attitude of a person is the function depend on his/her activity. Hence, the belief is known as attitude towards purchasing green products and tries to take into consideration on the social impact of their consumption; (Han and Kim, 2010).

It is suggested that green products are having importance toward predicting the ecological consumer behavior that contains product recycling and saving energy as well Lee and Holden (1999). The high rate of consumption in the green products ensures that consumers are having trust and confidence towards environmental safety and saving the resources (Chan and Lau, 2002; Kalafatis *et al.*, 1999). They support the intention to engage certain behavior such as consume green products. In contrast, according to Lee *et al.* (2014), people with positive attitude and awareness on green products consumption might have a high tendency in support the nature compared to the people who try to solve an environmental problem.

The purchase of green products represents the individual attitude towards environmental behavior. According to (Lee, 2008), this perception might be true, and it is one of the factors of green consuming among young consumers in Hong Kong. The research explained the perception could make a difference in influencing teenagers to consume green products or not. The consumer attitude towards making the purchase of the green product is directly associated with the perceived behavioral and helping in analyzing the green consumers. The concept described the consumers' intention to consume green products based on their awareness, behavior, and perception of social pressure (Armitage and Conner, 2011).

Attitude toward purchasing green products is one of the changing phenomena. In other words, it can be observed in various situations. If consumers believe an environmental problem can be solved easily, they will change their consumption toward green products. Hence, it can translate their positive attitudes into actual purchase. The consumer attitude of purchasing green products presents and consuming it that shows people are concern towards the solution of water and environmental pollution. That suggests the attitude of consumers are having positive relations with environmental awareness.

**H1:** Attitude towards purchasing green products is significantly related to purchase intention for green products.

## 1.5. Subjective Norm

The social norms are also having an impact upon the other person if the one is doing something different which will urge the individual to do so the same. Social norms enforce the other individuals of society to the consumer the same products as well. This can be relating to high social interaction among us that ability to encourage people to purchase green products. Hence, there is a positive relationship that has been shown from previous studied (Phuah *et al.,* 2011). In addition, social norms also give positive vibes to the attitude (Tarkiainen and Sundqvist, 2005). In the area of green products consumption, the past studies have found that social norms have either enabling effect on eating behavior (Han and Yoon, 2015). It is also being argued that food selection can be persuaded by the particular requirement and social pressure (Herman, 2015).

Social norms can be having an influential role that can enforce consumers to use green products in the daily routine life (Tarkiainen and Sundqvist, 2005). The surrounding plays an important role to encourage people to start and changing new life in consuming green products. Charter (2017), mentioned there are positive relationships between how social norms can attract consumers to purchase green products. Dovidio *et al.* (2017), stated the social norms is a change of a person's attitude and behavior which is influenced by others. Social norms are the motivator that can urge the society members to influence the attitude of the individual of the society to attract towards the green products (Rashotte, 2007). It is evident from the statement that social norms are the key elements that can impact upon the consumer behavior towards the purchasing of green products. Declared the social norms have a powerful relationship to nature-friendly which is able to drive the people to consume green products. The research also concluded the social norms have a direct and significant effect on intention to consume green products. In the corporate sector; organizational culture and the peer association also influence the individual to adopt the green product to be consumed. The individual behavior is being influenced by the family, friends, colleagues and another member of the society (Han and Kim, 2010). In the younger age, people are being influenced by their colleagues most of the time to adopt the purchasing of products that they are using (Webb *et al.*, 2017). The young generation always gets influence from their friends to purchase specific products. Indeed, they tend to purchase green products when their friends do so.

Social norms also include the mass media that bring the attention of the consumers or people towards purchasing green products (Ajzen, 1991). The consumers believe the mass media can give and gather information from a variety of information about green products. The consumers can get news about the environmental issue through mass media such as TV, magazine, radio, and newspapers. Past research by Brown and Duguid (2017), mentioned the young people's purchase decision can be influenced by mass media and gather all information about green products through them. The concept of green products can be more popularized in Iraqif society becomes more alert and aware of an environmental issue. Social norms involved marketers who introduce and generate knowledge about the consumption of green products.

Social norms and knowledge are the necessary elements in the study of consumer attitude towards the purchasing intention of green products. A study in Thailand, many kinds of media announce the benefit and advantage of consuming green products and it increases consumer knowledge and information about the product (Ellison *et al.*, 2016). Individuals in collectivist culture more likely to engage any activities with family members and friends. But, individualist prefers to work or have any activities alone. Understand the purchase intention of green products in Iraq is extremely necessary and social norms could be the main scopes or dimensions to a measure the concept of consuming green products. Moreover, according to Fukuyama (2017), social norms also can be related to direct important role in individual itself for example father, mother or teachers that have a great impact on gaining knowledge especially among the young consumers regarding the consumption of green products. Celebrities and role models can change the perception of the individual of society towards costly and luxury products. That is the reason; the subjective norm is the important factor in purchase intention for green products therefore; it is being suggested that:

**H2:** Subjective norm is significantly related to purchase intention for green products.

## 1.6. Perceived Behavioral Control

Perceived behavioral control is associated with the concept of inner locus of control (Paul *et al.*, 2016). That suggests the behavior of the individual that how they are going to use the products. Author by Han and Yoon (2015) suggested that consumers should continually consume green products as the products can increase the perceived behavioral control in themselves to maintain good health. In addition, the concept of perceived behavioral control can refer to self- evaluation in terms of the environmental issue which is contributing to pollution matter. Research by Sudiyanti (2009) found that perceived behavioral control is the most significant especially among women to consume green products. In addition, it can be related to outward variables such as race, age, education level and income that have sufficient relationship toward awareness of green products among consumers (Phuah *et al.,* 2011). The supportive statement suggests that education and race are having an impact on the perceived behavioral control in purchasing green products.

**H3:** Perceived behavioral control is significantly related to purchase intention for green products.

## 1.7. Environmental Concern

The environment is the most important factor that pursues the consumers that makes the consumption of green products as well. Previous researches suggest that using green products can decrease the damage of the natural hazardousness. Nowadays, the consumer becomes more concern to protect the environment. They believe

consuming green products could help to solve environmental problems; (Aman *et al.*, 2012; Hartmann and Apaolaza-Ibáñez, 2012).

The majority of the consumers are concern and awareness toward the environment. They believe consuming green products will help and overcome the problem of environmental conscious (Laroche, 2001). It is required that consumers should be having enough knowledge and awareness regarding the environmental issues that suggest it is also associated with the purchase of green products. In the previous studies, it is being suggested that consumers have the knowledge and awareness about environmental issues and having a positive opinion towards the consumption of green products. In addition, those consumers who have a positive thought about environment concern, they tend to consume a friendly product which is green products. However, there are some previous research mentioned, huge price difference and inconveniences may deter consumers from buying green products. Not all the consumers are willing to spend the high price for green products. As long as the products are quality and able to meet the desire, it will be their choice rather than purchase environmental products. However, if the consumers are pro-environment, they tend to pay high of the green products and the price is not the main factor in preventing consumers to do so (Moser, 2015).

It is being suggested that green products are not used by the consumers for the cause of environmental safety but they are having other perception such as; cost, easy to access and quality of the products (Johri and Sahasakmontri, 1998). The consumers consider food quality and freshness also free from any toxic in any products (Bibi *et al.*, 2017). According to Roberts (1997), environmentally consciousness can be detailed to the human thought, feeling, and behavior toward the environment. The New Environment Paradigm (NEP) used the scale to measure environmentally conscious with environmentally responsible if attitude and behavior are measured at the same level. Therefore, the following hypotheses are recommended:

**H4:** Environmental concern is significantly related to purchase intention for green products.

Green products consumptions are the main feature that urges the consumers to buy and use the products that are causing less harm to the environment and society as well. External influence, for instance, the price and quality of consumers' beliefs about environmental performance were investigated to identify the relationship with green consumption (Groening and Zhu, 2018). Past research mentioned the consumer's purchase and consumes green products due to having low environmental impact issue ahead (Kumar *et al.*, 2017). According to Ahmad *et al.* (2015), stated that the consumers who care about environments friendly have a desire to eat as many green products.

**H5:** Environmental concern is significantly related to attitude towards purchasing green products.

The study suggests that there are five dimensions that can illustrate the environment awareness. These dimensions are environment knowledge, environmental values, environmental attitudes, willingness to act and actual action. These also related to the behavior of human being on how they react towards the natural. The consumers who believe in self-improvement and put the effort on environment concern consciousness will protect the environment in their society (Sulaiman *et al.*, 2017).

**H6:** Environmental concern is significantly related to the subjective norm.

The purchase and the use of green products are not used for the health purpose but also meant to save the environment but also for maintaining the environment for the upcoming generations. They are happy to use those products that are environmentally friendly and by this act, they will be contributing towards the betterment of the environment and less pollution in the environment (Fraj and Martinez, 2007). Another researcher by Mostafa (2007) said the consumers who believe in environmental concern are well educated and have more money to spend. They expect green products or other products can satisfy their needs and desires. It was mentioned before, the consumers ready to pay a premium price for green products or other products since it can verify the environmental issue and could help nature for a better life.

**H7:** Environmental concern is significantly related to perceived behavioral control.

# 2. Health Consciousness

Green products quality is much greater than the other available products. These products contain original vitamins and minerals along with this they are free from chemical induction to preserve it. According to Rahim (2009), the consumers who are concerned about green products displayed a positive attitude towards consumption. They tend to change their daily life to a new way of consuming green products. Lockie (2002), explained green products is natural content and nutritious. It is the main reason why consumers should purchase this kind of food instead of normal foods. The natural content also can give a right impact on consumer purchasing behavior (Katz *et al.*, 2017).

As discussed earlier; that green product includes pure vitamins that are having high percentage than the other ordinary products that are being made artificially such as Vitamin C is the most required element for the human body that contains in the green products. It develops the immune system in the human body to fight against the disease such as cancer. Past research by Armin *et al.* (2013) showed the green products can reduce the growth of cancer cell in the patient body. By introducing natural technique, the milk was produced more valuable with a high percentage that required in the human body (Aman *et al.,* 2012). In addition, green products have low fat and more carbohydrate which is different from conventional food (Armin *et al.,* 2013).

Consuming green products daily could stand for a diet and a healthy meal. Among the consumers, health issues are high concern that urges them to use green products to stay healthy. It is also evident that consumers are free to select any product for the usage but they are also affected by other factors as well. One of them is related to the health concern. However, the consumers choose green products not only because of health factor, but the taste too. In addition, according to Phuah *et al.* (2011) found that education level and high income will influence consumers

and more intent to consume green products s due to the concern of health consciousness. However, they need the confidence among the consumers especially the loyal one to consume green products from their country (Chakrabarti, 2010). As a result, we hypothesize that:

**H8:** Health Consciousness is significantly related to purchase intention for green products.

The effectiveness of green products urges the consumers in maintaining their healthy life which motivates them towards the green products and uses them adequately. The consciousness to consume any products will be changed and growing well with the increase in age. The survey on Nigerian consumers believe and agree with the statement of green products is healthier, tastier and have better quality in terms of no harmful effect compared to conventional food (Dipeolu *et al.,* 2009). Hence, based on the above discussion, this study hypothesizes that:

**H9:** Health Consciousness is significantly related to attitude towards purchasing green products.

The survey of European Union suggests that those consumers that are highly concerned towards the food nutrition they will be using the green products and making a decision of purchasing in the favor of green products (Lee and Yun, 2015). It is evident that consumers are likely to use green products because it is convenient, easy to access, cost-effective and quality are the main features (Ottman, 1992). On the basis of the above illustration following hypotheses developed:

**H10:** Health Consciousness is significantly related to the subjective norm.

There is some author disagree on health factor that leads to consuming green products. The studies by Michaelidou and Hassan (2008) and Tarkiainen and Sundqvist (2005) do not consider it very important. Their thought, health benefit is the least important aspect of consuming green products. The study of McCarthy et al suggested that promotion of green products are meant to motivate the people of China and for the welfare of animals as well. The perception of the Chinese people to promote a healthy environment and consumption should be environmental friendly as well. Therefore, it is hypothesized that:

**H11:** Health Consciousness is significantly related to perceived behavioral control.

# 3. Methodology

The current study is quantitative in nature and for the data collection, it used a structured questionnaire. For making the validity of the questionnaire a pilot study was conducted with a relatively small data set of 51 respondents and EFA was performed. The results of EFA were found to be satisfactory as all the items loaded at above 0.7. In the next step 300 questionnaires were distributed out of the 170 were received back. However, 9 of them were discarded as they were not properly filled. Hence the sample size was 161 which was used for further analysis. The study has total of six construct in the framework and the total number of items is 19. The effect of environmental concern and health consciousness was checked on attitude towards green products, social norms, perceived behavioral control and purchase intention towards green products. Moreover, the impact of attitude towards green products, social norms, and perceived behavioral control was tested on purchase intention towards green products. All the latent variables were measured using multi-items and the responses were taken on five-point Likert type scale. The items used in each construct are tabulated in the table below along with the alpha value of construct reliability. To estimate the measurement model and to test the hypotheses structural equation modeling was used for this purpose Smart PLS version 3 was used.

For the assessment relationships found in the study framework, Structural Equation Modelling was applied. For this SmartPLS 3 was used. However, before running the main data analysis on SPLS a data screening process was performed using Excel and SPSS. The data screening involved. Missing value and outliers detection, the normality of the data and checking for the unengaged responses. Thereafter a measurement model was estimated and based on the result of convergent validity including factor loading, average variance extracted (AVE), Composite reliability (CR) was examined. Furthermore, the discriminant validity was also examined based on the criteria by Hair *et al.* (2011).

**Table-1.** Demographic statistics of the Respondents

| Demographics | Frequency | Percentage (%) |
|---|---|---|
| **Gender** | | |
| Male | 141 | 88 |
| Female | 20 | 12 |
| **Age** | | |
| 18-30 years old | 57 | 36 |
| 31-40 years old | 86 | 53 |
| 41 and above | 18 | 11 |
| **Family members** | | |
| 2-3 | 65 | 40 |
| 3-6 | 55 | 34 |
| Above 6 | 41 | 26 |
| **Education** | | |
| Bachelor | 79 | 49 |
| Master | 56 | 35 |
| PhD | 6 | 16 |

**Note:** n= 161

The respondents' demographic profile is depicted in the above table 1. By looking at the frequency of gender the percentage of the male is 88% and the percentage of the female is 12%. Most of the respondents were between the age of 31-40 years old (53%), while the respondents between the age of 18-30 years old were (36%). The respondents above the age of above 40 were (11%). Most of the family members were 2 to 3 persons (40%) and the percentage of 3 to 6 persons were (34%), and above 6 persons were (26%). As far as the qualification of the respondents is concerned around (49%) were Bachelor, (35%) were Master and remaining (16%) were Ph.D.

## 4. Results

The first stage of the PLS-SEM was performed by estimating the measurement model. Results show that indicator loadings for all items exceeded the recommended value of 0.7 (Hair *et al.,* 2009). The values for AVE ranged between 0.526 and 0.734, hence exceeding the benchmark value of 0.5 and CR values ranged between 0.71 to 0.88 exceeding the benchmark value of 0.7 (Hair *et al.,* 2009) see table 2. The measurement items' discriminant validity was examined following the criteria of Fornell and Larcker (1981) see table 2. The table shows the discriminant validity of the construct used in the model and shows that all values of AVEs present in the diagonal are higher than the off-diagonal values of inter-construct squared correlations.

The second stage of PLS-SEM (Path analysis) was performed to estimate the structural model. For this purpose, $R^2$ and significance values of the path model were examined (Hair *et al.,* 2011). The $R^2$ for Attitude towards purchasing, subjective norm, perceived behavioral control and purchase intention towards green product were 0.549, 0.330, 0.663 and 0.421 respectively (see figure 2).

The hypotheses of the study show the relationship of environmental concern, health consciousness, attitude towards purchasing, subjective norm and perceived behavioral control on purchase intention. Moreover, the impact of environmental control and health consciousness were tested on attitude towards purchasing, subjective norm and perceived behavioral control directly. The results depicted that all the hypotheses were found to be supported except the relationship of Environmental concern and subjective norm which was not found to be supported. The coefficients and p-values are shown for each relationship are shown in table 3 below. The results are also shown in figure 2.

**Table-2.** Reliability and validity of the constructs

| Construct | Items | Loading | AVE | CR | Cronbach's Alpha |
|---|---|---|---|---|---|
| **Attitude towards Purchasing Green Products** | ATPGP1 | 0.891 | 0.734 | 0.825 | 0.801 |
|  | ATPGP2 | 0.834 |  |  |  |
|  | ATPGP3 | 0.872 |  |  |  |
| **Subjective Norm** | SN01 | 0.948 | 0.673 | 0.818 | 0.799 |
|  | SN02 | 0.760 |  |  |  |
|  | SN03 | 0.734 |  |  |  |
| **Perceived Behavioral Control** | PBC01 | 0.845 | 0.545 | 0.826 | 0.811 |
|  | PBC02 | 0.822 |  |  |  |
|  | PBC03 | 0.703 |  |  |  |
|  | PBC04 | 0.845 |  |  |  |
| **Economic Concern** | EC01 | 0.823 | 0.534 | 0.881 | 0.841 |
|  | EC02 | 0.801 |  |  |  |
|  | EC03 | 0.744 |  |  |  |
| **Health Consciousness** | HC01 | 0.826 | 0.598 | 0.712 | 0.706 |
|  | HC02 | 0.805 |  |  |  |
|  | HC03 | 0.767 |  |  |  |
| **Purchase intention for Green products** | PIGP01 | 0.891 | 0.526 | 0.823 | 0.789 |
|  | PIGP02 | 0.854 |  |  |  |
|  | PIGP03 | 0.705 |  |  |  |

**Figure 2.** The results of the research model
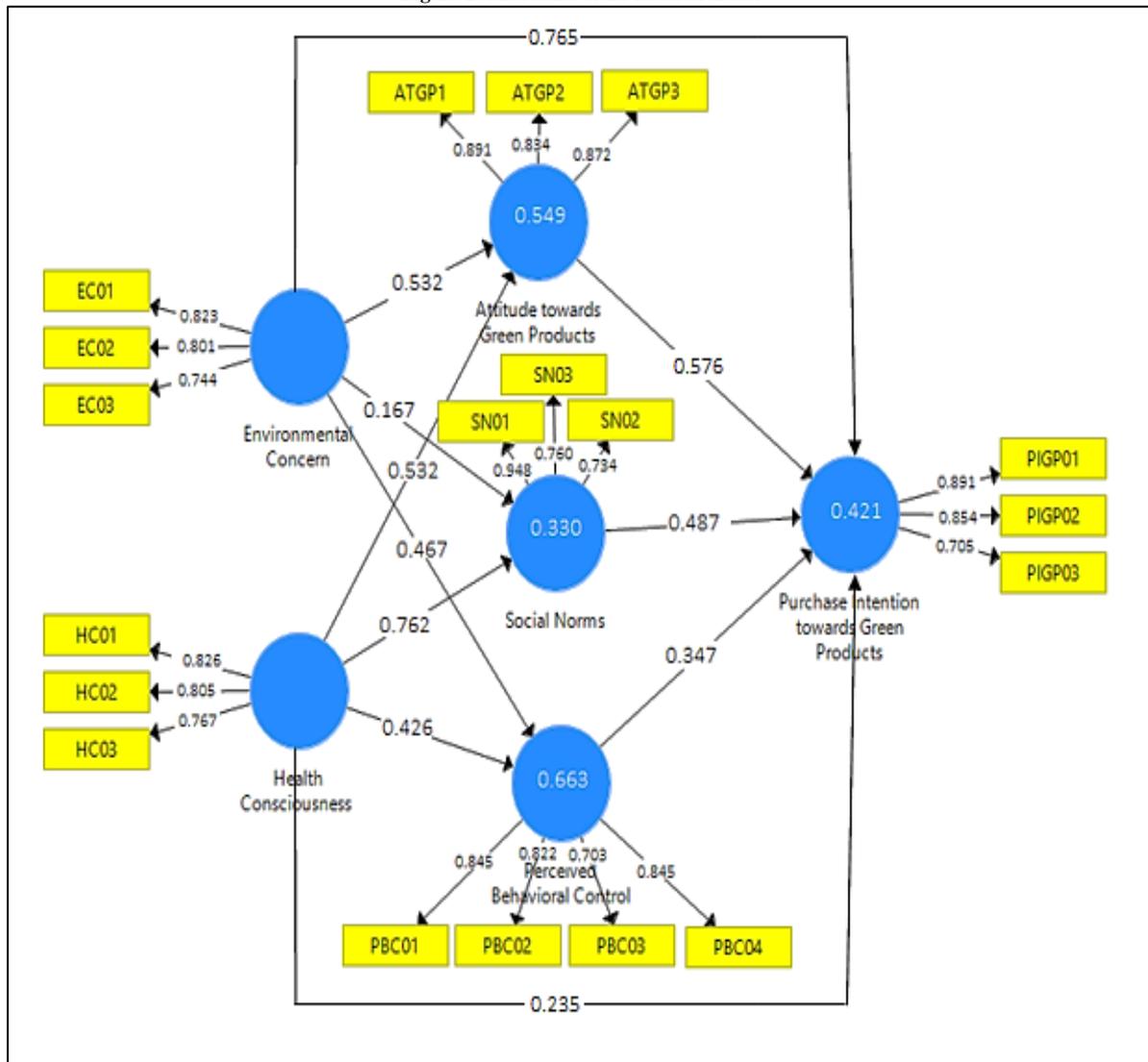


**Table-3.** Results of hypotheses testing

| Hypothesis Description | | Path coefficient | P-value | Result |
|---|---|---|---|---|
| $H_1$ | Attitude towards purchasing green products → purchase intention for green products. | 0.576 | .000 | Supported |
| $H_2$ | Subjective norm → purchase intention for green products. | 0.487 | .002 | Supported |
| $H_3$ | Perceived behavioral control → purchase intention for green products. | 0.347 | .001 | Supported |
| $H_4$ | Environmental concern → purchase intention for green products. | 0.765 | .002 | Supported |
| $H_5$ | Environmental concern → attitude towards purchasing green products. | 0.532 | .000 | Supported |
| $H_6$ | Environmental → subjective norm. | 0.167 | .031 | Not-Supported |
| $H_7$ | Environmental concern → perceived behavioral control. | 0.467 | .000 | Supported |
| $H_8$ | Health Consciousness → purchase intention for green products. | 0.235 | .003 | Supported |
| $H_9$ | Health Consciousness → attitude toward purchasing green products. | 0.532 | .000 | Supported |
| $H_{10}$ | Health Consciousness → subjective norm. | 0.762 | .001 | Supported |
| $H_{11}$ | Health Consciousness → perceived behavioral control. | 0.426 | .001 | Supported |

## 5. Discussions

This study examined the extended TPB model, the study wants to explain the finding of each independent variable to the dependent variable (purchase intention of green products). Based on the studies conducted, the

respondents have a good knowledge of the consumption of green products and aware of the environment and health issue. Questionnaires were distributed to 300 respondents and 161 questionnaires were considered and analyzed in SPSS Version 22 and SmartPLS 3.0. The findings can be used for future research to overcome the problem and enhance the quality of information about the study.

Attitude toward purchasing the green product was the first independent variables tested in this study. There were three items asked in the questionnaire. The result showed an attitude toward purchasing green product influence the purchase intention of green products in Iraq. It could say, the respondents understand the question of asking about the green products. The path coefficient of attitude toward purchasing green product shows 0.576 and Pearson's correlation coefficient (r) of this variable is 0.549 that generally has a good relationship among the variable. In addition, Attitude toward purchasing green product showed the variance is significant where p=0.000 and the result support the hypothesis testing.

Subjective norm was the second independent variables in this study. All three items in this factor determined the significant to purchase intention of green products. The result showed that the path coefficient of the subjective norm is significant with 0.487 and Pearson's correlation coefficient (r) of this variable is 0.330 and consider as the highest value among the variables. The third variable in this study is behavior control and the result of the analysis showed significant with 0.347and Pearson's correlation coefficient (r) of this variable is 0.663. The correlation could say high and strong because the value is more than 0.50.

This finding provides some support on previous studies which indicate the health consciousness could be the main reason why consumers consume green products. In addition, a researcher by Grewal *et al.* (2017) found out health consciousness will influence consumers especially in Iraq to consume green products since the product are free from chemical and hazardous substances. According to Pomsanam and Kim (2014) explained the decision to consume green products because no side effect and the method of agriculture are safe and environmentally friendly. This information and the result could be as the main factor for encouraging consumers to purchase and consume more green products to have a better life later. Previous findings by Dewulf *et al.* (2015) mentioned health consciousness is the most important factor to consume green products since the products are well-being and safe to consume.

The environment concern and the social norms were not significant with the path coefficient of 0.167 So, the result rejects the hypothesis six which is an environmental concern is significantly related to the subjective norm. The result is consistent with the previous study by Irawan and Darmayanti (2012) which explained social norms did not have a significant coefficient and no positive relationship with the environmental concerns. Hence, the results of this study still inadequate. For the next research, this variable might and can develop more for getting a conclusive result. Also, it indicates by past research, (Kalafatis *et al.*, 1999), the study has a direct and significant effect on the environment. The community, friends, and families should involve making an effort in promoting good health by consuming green products for our children and it should start at home. They will learn a great deal by using green practices and it will teach us to become more responsible towards the environment. Thus far, various efforts have been taken to create and educate Iraqi people regarding healthy diet and active lifestyle. For example, the events are organized in schools, hospitals, and road shows.

## 5.1. Limitations and Future Directions

The study has some limitations. This study focused and limited only to a small group of students which is in Salahaddin University in Iraq. Therefore, the study failed to generalize of huge population and was not equally distributed. The research only focused on university students and the population only 19,876. So the sample size that involved in this study is 161 (Krejcie and Morgan, 1970). To ensure the study is more accurate and effective, 170 sets of questionnaires were collected. However, only 161 sets of questionnaires were used in the analysis. Hence, it can cause the reliability of research and might be affected due to the small size of the sample and did not represent the entire population that consumes green products. So, for the next research it necessary to cover overall population and use samples which are equally distributed including the academic and non-academic staff in Salahaddin University in Iraq to collect more results and provide the insightful conclusion. Secondly, the limitation of the study is when there are only five independent variables that have been tested in this research paper. However, various variables or other possible factors that can affect the purchase intention of green products among consumers. For example, animal welfare, price consciousness, band loyalty, and quality consciousness. However, it depends on the nature of the research and how it can gather more information for the next study ahead. Researchers should expand the independent variables in order to make the results more accurate. Thirdly, the limitation of the study is difficulty in obtaining the cooperation of the respondents. Mention earlier, the respondents are consisting of students and slightly they refuse to answer the questionnaire given. The respondents might find the easiest way to fill in the questionnaire when they do not understand the question. So, they might choose the answer randomly and it will cause an effect on the accuracy and reliable of the result later. Lastly, time constraint also one of the limitations of this study. The time used to conduct this study is simply short. Due to time constraint, only five variables and small sample size have been used. If there is more time, the results of the data would be better.

## 6. Recommendations

Recommendations are suggested in order to overcome some limitations. This will help to improve the quality and useful for the next studies. Therefore, these are some following suggestion regarding the study. The population and sample size of the study should be extended in future research because a large number of respondents could increase the reliability of research. The data of respondents from different perceptions will result from more reliable

analysis. Furthermore, for the next research, the survey should provide a different method besides questionnaires. As an example, the researcher can conduct an interview toward the purchase intention of green products. This can gain more and complete information about their perception, knowledge, and prior experience of consuming green products. As said before, the limited independent variables used in this research are not enough to capture the entire study. So, there are some signs or factors that have been looked to take into consideration for instance product quality (O'Mahony, 2017), food safety, knowledge factor (Lim *et al.*, 2016), and price attributes. Addition of other variables will help and obtain a broader scope and better understanding of green products. Moreover, the young generation should be exposed to environment function and manage their behavior by increase environment education. Since the issue of the environment is getting worst, the school especially should include environmental education in the syllabus. It will motivate and enhance the children's awareness and concern towards the environment and become green consumers.

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# Appendix

**Questionnaire**

SDA=Strongly Disagree, DA= Disagree, N=Neutral, A= Agree, SA= Strongly Agree

| Constructs/Questionnaire Items | SDA | DA | N | A | SA |
|---|---|---|---|---|---|
| **Purchase intention towards green products** | | | | | |
| PIGP01: I plan to consume these products frequently. | | | | | |
| PIGP02: I will make every effort to consume green food. | | | | | |
| PIGP03: I don't mind paying more for green food. | | | | | |
| **Attitude** | | | | | |
| ATGP1: I like the idea of consuming green products. | | | | | |
| ATGP2: My life will be better if I consume green products in the near future. | | | | | |
| ATGP3: I have an attitude toward consuming a green product. | | | | | |
| **Social Norms** | | | | | |
| SN01: People who are important to me would encourage me to consume green products. | | | | | |
| SN02: My family thinks that I should consume green products. | | | | | |
| SN03: My friends advise me to consume green products. | | | | | |
| **Perceived Behavioral Control** | | | | | |
| PBC01: choose to consume green food because it is consistent with my principles. | | | | | |
| PBC02: I choose to consume green food because I have the moral duty to behave that way. | | | | | |
| PBC03: I feel I can help to solve the natural resource problem by converting water and energy. | | | | | |
| PBC04: I can protect the environment by purchase products that is friendly to the environment. | | | | | |
| **Environmental Concern** | | | | | |
| EC01: It is important to protect the green living. | | | | | |
| EC02: More environmental protection works in my society. | | | | | |
| EC03: It is important to raise environmental awareness among the people. | | | | | |
| **Health Consciousness** | | | | | |
| HC01: I reflect about my health a lot. | | | | | |
| HC02: I am very self-conscious about my health. | | | | | |
| HC03: I am usually aware of my health. | | | | | |