Factor Influencing Green Food Purchase Intentions and Health Consciousness During COVID-19 Pandemic in Bangkok, Thailand

Satreerat Katpia [1*] and Chompu Nuangjamnong [2]

Received: March 2022; **Revised:** May 2022; **Accepted:** May 2022

Abstract

The study examines the variables that influence attitude, subjective norm, perceived behavioral control, and the impact of COVID-19 on green food purchase intention and health consciousness during COVID-19 in Bangkok, Thailand. The study proposed exploring the factors that affect green food purchase intention and health consciousness by using the secondary data method of archival research. This study initiated a unique conceptual framework by combining four frameworks from previous studies. The researcher uses the non-probability sampling method by applying convenience sampling, snowball sampling, and purposive methods with a sample size of 447 as the target respondents. The statistical software in social science was used to analyze and collect data. Moreover, the findings of this research indicate that independent variables of health consciousness, attitude, subjective norm, perceived behavioral control, and impact of COVID-19, only perceived behavioral control was not statistically significant to influence green food purchase intention. After the descriptive analysis and linear regression analysis, the results showed that attitude, subjective norm, health consciousness, and impact of COVID-19 positively influenced green food purchase intention. Thus, the perceived behavioral control negatively toward green food purchase intention, which means all variables accepted perceived behavioral control significantly influenced green food purchase intention.

Keywords: Green food, COVID-19, Purchase intention, Health consciousness, Thailand

JEL Classification Code: I10, I12, I18, M30, M31, M38

1. Introduction[12]

This paper investigates what factors influence green food purchase intentions and health consciousness during the COVID-19 pandemic in Bangkok, Thailand. Starting on December 31, 2019, the WHO China Country Office was notified about an unknown cause of pneumonia discovered in the Chinese city of Wuhan in Hubei. Authorities claim that several patients worked as traders or sellers in the Huanan Seafood market. On January 11–12, 2020, China shared the new coronavirus's genomic sequence, which will be critical for other countries developing particular diagnostic tools. On January

[1] Master of Business Administration, Graduate school of Business and Advanced Technology Management, Assumption University of Thailand, Bangkok, 10240, Thailand
* Corresponding author. Email: satreeratkatpia@gmail.com
[2] Lecturer, Innovative Technology Management Program, Graduate School of Business and Advanced Technology Management, Assumption University of Thailand. Email: chompunng@au.edu

13, 2020, Thailand verified a case of the new coronavirus. The emergence of instances of the new coronavirus outside of China was not predicted, and it underlines WHO is need for diligent observation and preparedness in other countries (World Health Organization, 2020). During this period, the COVID-19 pandemic significantly changed the way people behaved. Many people are looking for a better way to improve their health and be environmentally friendly. Green food is the consideration of many people and genders in this era. According to some research, Consumers are increasingly worried about their eating habits' health and safety implications. They would like to sustain and recover their immune systems through their nutrition. A methodology of more than 3,000 consumers from 15 nations in Accenture 2021 research indicated that the COVID-19 pandemic had been expected to produce a more sustainable and healthier consuming age over the next ten years. This advancement can permanently alter consumer behavior and cause long-term, massive reforms in markets and industries. As a result, manufacturers and advertisers in the organic and green food fields should accelerate their strategic goals and competencies to meet rising customer expectations for their products and services throughout the current pandemic and post-pandemic periods. (Qi & Ploeger, 2021).

Green Food relates to safe and high-quality edible agricultural products and related processed goods cultivated in an ecologically friendly setting, prepared following the green food production standard, subject to thorough quality control, and entitled to use the green food label. Green Food is graded according to two standards: A and AA. Grade A is a transitional level between conventional and organic food, allowing for the use of a limited number of chemical components. However, Grade AA is equivalent to global requirements, which are tighter than the Grade A standard (Qi & Ploeger, 2021). Furthermore, green food consumption has been linked to sustainability threats such as increasing greenhouse gases and pollution. Especially, COVID-19, the world received many infectious wastes such as facial masks and Antigen test kits (ATK). This is partly motivated by customers' socio-environmental responsibilities and purpose and decisions (Nguyen et al., 2019).

Successfully contributing to the expansion of the green food industry, it is necessary to investigate its users' buying habits, with strong attention to buying intention, which is the basis of conducted buying behavior. As a result, marketers, and researchers should understand the characteristics that influence customers' intentions to purchase green food in the target market (Qi & Ploeger, 2021). Thus, this paper aims to investigate the variables that influenced green food purchasing intentions and health consciousness during COVID-19 of the pandemic. The factors influencing green food purchasing intention are attitude, subjective norm, perceived behavioral control, the impact of COVID-19.

2. Literature Review and Hypotheses Development

2.1 Health consciousness and green food purchase intention

Consumers emphasize health when purchasing food items, and those who are more concerned about their health are increasingly choosing green foods. Furthermore, green food is thought to be stronger and more nutritious than conventional food since it is grown without dangerous chemical fertilizers (Wang et al., 2021). Moreover, health consciousness could be a major influence on food product buying decisions, particularly when it comes to green foods. Some studies have indicated that health consciousness is a motivator for green food purchases, but it also has a major effect on consumers' desire to pay a green food premium. Most health consciousness in green food would be attributed to customers' believing organic food alternatives provide better health advantages (Katt & Meixner, 2020). Regarding Qi et al. (2020) explored numerous participants who mentioned that health concerns were the prime consideration for their green food purchasing intentions. The participants believed that eating green food would make them healthier than eating conventional foodstuffs. Moreover, Aungatichart et al. (2020) explored that green food product involvement influenced the correlation between health consciousness and purchase intention. Therefore, based on the above literature study, the following hypothesis is proposed:

Hypothesis 1: *There is a causal relationship between the impact of COVID-19 and health consciousness during COVID-19 of the pandemic.*

2.2 Attitude and green food purchase intention

Green food attitudes and purchases have been important to green food buying and consumption studies. Consumer attitudes toward purchasing green food reveal their positive or negative judgment of purchasing organic food. Consumers with favorable perceptions of organic food consider that acquiring organic food is essential and a worthy investment (Nguyen et al., 2019). Ashraf et al. (2019) claimed that much of an individual's attitude toward making green food purchases, which is more often than whether they consider themselves green consumers, could be understood in terms of reliability. The study by Boobalan et al. (2021) declared that attitude is the tendency to support or oppose a particular action. Previous research has repeatedly shown that green food customers' attitudes positively impact purchasing intention. The researcher formulated the following hypothesis:

Hypothesis 2: *There is a causal relationship between the impact of COVID-19 and green food purchase intention during COVID-19 of the pandemic.*

2.3 Subjective norm and green food purchase intention

Aungatichart et al. (2020) declared that many academics had investigated the link between subjective norm and purchase intention. However, just a few empirical studies have addressed consumer identity. According to one study, identity is substantially related to social consciousness regarding behavioral intention for organic foods. The ideas of "*characterize certain surrounding environments are more or less common among people of a certain social environment, and that is reinforced in the consciousness of specific individuals by joint suggestion and by the belief that they are conveyed by other people in the same group*" are defined as awareness. As a result, it may be predicted that these notions will pressure customers to identify as environmentally conscious people sensitive about food quality and safety. Vu et al. (2021) stated that subjective norms are perceived societal influences that encourage or discourage people from buying green goods. Moreover, in certain research, green purchasing intention behavior has been related to social norms and values, communities, and cultural influences (Munamba & Nuangjamnong, 2021; Kapoor & Nuangjamnong, 2021). Consumers conform to society's standards to gain social respect in their communities and prevent losses due to poor judgments (Qi et al., 2020). The researcher has therefore formulated this hypothesis as follows:

Hypothesis 3: *There is a causal relationship between health consciousness and green food purchase intention during COVID-19 of the pandemic.*

2.4 Perceived behavioral control and green food purchase intention

The study by Vu et al. (2021) explored that perceived behavior control is a customer's opinion of the complexity and comfort to carry out green purchasing behavior. Saleki et al. (2019) stated that In Asian culture, perceived behavioral control significantly impacts customers' purchasing intentions. The study from Aungatichart et al. (2020) stated that perceived behavioral control is described as a person's impression of the easiness of doing a certain activity — for example, the measure to which a person believes that the behavior in question is within their voluntary control. Thus, it is the level of control that one senses and over behavior's effectiveness. As a result, consumer behavior is influenced by perceived restrictions and abilities, which are influenced by external variables such as availability and awareness. Existing research indicates that perceived behavioral control has a strong influence on the desire to purchase green food. On the other hand, perceived behavioral control has demonstrated conflicting effects on purchase intention, and earlier research has emphasized the absence of influence on purchase intention on green food (Qi et al., 2020). Johe and Bhullar (2016) indicated opposing motives during the decision-making process. Furthermore, in the event of a collectivism-dominant cultural logic, customers may feel less freedom and self-determination in their purchasing decisions, which may cancel out the predicted benefit of perceived behavioral control on intentions (Munamba & Nuangjamnong, 2021; Kapoor & Nuangjamnong, 2021). However, the following theories are suggested based on the preceding:

Hypothesis 4: *There is a casual relationship between attitude and green food purchase intention during COVID-19 of the pandemic*

2.5 Impact of COVID-19 and green food purchase intention

Qi et al. (2020) stated that the study explores the influence of the COVID-19 problem on consumers' intentions to buy green foods. When inquired about the impact of COVID-19, most participants mentioned that the epidemic had a substantial impact on their green food consumption. A probing inquiry was given to investigate the impact of COVID-19 on their green food purchasing intentions. Generally, most participants believed that the pandemic had raised their desire to buy green foods due to their rising health concerns. As an outcome, 46.43 percent of them mentioned they are more aware of the significance of health and food security. Therefore, people are prepared to invest in their health by increasing the proportion of green food purchases in their overall food spending (Munamba & Nuangjamnong, 2021; Nitchote & Nuangjamnong, 2022). A total of 28.58 percent of participants mentioned that the COVID-19 scenario had no influence on their green food purchasing intentions and that they would keep buying green food. However, 25.04 percent of people who participated stated that the pandemic had limited their plans to purchase green food due to economic issues. They would restrict the amount of green food purchased due to overpriced green food supplies. The study by Xie et al. (2020) declared that food safety, which consumers purchase as green food, is becoming more prevalent regarding COVID-19. People prefer to eat more ecologically friendly meals as their food safety considerations grow. Green food satisfies the existing need due to its several advantages (Munamba & Nuangjamnong, 2021). In the context of these data, the following hypotheses are introduced:

Hypothesis 5: *There is a casual relationship between subjective norm and green food purchase intention during COVID-19 of the pandemic.*

2.6 Impact of COVID-19 and health consciousness

Qi et al. (2020) declared that because of their health consciousness, respondents from their research felt that COVID-19 had a favorable influence on transforming their green food purchase intentions into behaviors. Some participants stated that eating green foods was essential to improve their antibodies and overall health, particularly during global health emergencies. Many distributes employed online grocery delivery to get green food when their purchase channels were evaluated. Xie et al. (2020) explored that the COVID-19 pandemic would shift people's behaviors and habits toward healthier and more sustainable. Moreover, the fear of COVID-19 impacted people's health, Campos et al. (2021) defined that a medical emergency occurrence (for example, COVID-19) drives consumers through knowledge of sensitivity and mortality salience behavior toward personal protection. Given that fear of COVID-19 is connected with fatalities and that eating green foods helps minimize the resistance to acquiring the new coronavirus, it is rational to believe that high levels of anxiety can increase the ambition to eat green foods. The following theory is offered on the basis of the foregoing:

Hypothesis 6: *There is a causal relationship between perceived behavioral control and green food purchase intention during COVID-19 of the pandemic.*

2.5 Conceptual Framework

The conceptual framework is assembled based on literature review in the previous research, existing literature, and theoretical concepts representing the influence of variables including health consciousness, attitude, subjective norm, perceived behavioral control, and impact of COVID-19 influence on the green food purchase intention assembled to be the conceptual framework in this study. The first theoretical framework from the article *"Exploring Influential Factors Including COVID-19 on Green Food Purchase Intentions and the Intention–Behaviour Gap: A Qualitative Study among Consumers in a Chinese Context"* by Qi et al. (2020). The second theoretical framework from the article *"Explaining Chinese Consumers' Green Food Purchase Intentions during the COVID-19 Pandemic: An Extended Theory of Planned Behaviour"* by Qi et al. (2020). The third theoretical framework from the article *"How does perceived severity of COVID-19 influence purchase intention of organic food"* by Wang et al. (2021). The fourth theoretical framework from the article *"Consumers'*

anti-consumption behavior toward organic food purchase: an analysis using SEM" by Ashraf et al. (2019). Lastly, the fifth theoretical framework from the article *"Is It All About the Price? An Analysis of the Purchase Intention for Organic Food in a Discount Setting utilizing Structural Equation Modeling"* by Katt and Meixner (2020).

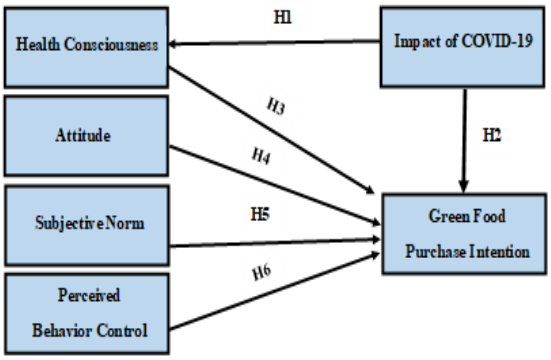

Figure 1. The Conceptual Framework
Source. Authors.

3. Methods and Materials

The researcher used a non-probability sampling strategy in this research, which is a method that involves non-random selection based on convenience and ease of data collection. The methods selected for use are convenience sampling, snowball sampling, and purposive sampling to collect information. In this research, the target population is people in Bangkok, Thailand, who purchase green food products. According to PopulationU.com (the recent United Nations statistic), the population in Bangkok, Thailand, is 5,513,223 (as of Saturday, January 29, 2022). Thus, researchers could not determine how many people in Bangkok, Thailand was interested in purchasing green food products and being health conscious. Therefore, the research will classify the target audience as unknown by using Cochran to calculate the sample size of respondents. Therefore, the researcher used 447 respondents to determine and modify the appropriate sample size from Thais living in Bangkok, Thailand. The questionnaire is divided into three sections, a total of 38 items that relate to six variables of the research model, two items related to screening questions, 29 items are related to measuring variables, and seven items are related to demographic information. This study utilized a five-point Likert Scale to measure respondents' attitudes and level of agreement with each variable. The following statistical level has been established 1 represents "Strongly Disagree," 2 represents "Disagree," 3 represents "Neutral," 4 represents "Agree," and 5 represents "Strongly Agree."

The research intends to perform a pilot test with 50 respondents to identify any inconsistencies or mistakes in the questionnaire variables using the Cronbach's Alpha test. Cronbach's alpha is one technique to measure consistency and is used to analyze the reliability of any given measurement variable. Following the Cronbach's Alpha and Internal Consistency's Rules $\alpha > 0.9$ means excellent, $0.8 < \alpha < 0.9$ means good, $0.7 < \alpha < 0.8$ means acceptable, $0.6 < \alpha < 0.7$ means questionable, $0.5 < \alpha < 0.6$ means poor, and $\alpha < 0.5$ means unacceptable (Cronbach,1951).

Table 1. The value of Reliability Analysis of Each Item and Variable in this Study *(n = 50)*

Variables/Measurement Items	Cronbach's Alpha	Strength of Association
Green Food Purchase Intention	0.821	Good
Health Consciousness	0.807	Good
Attitude	0.936	Excellent
Subjective norm	0.873	Good
Perceived Behavioral Control	0.890	Good
Impact of COVID-19	0.947	Excellent

Source. Authors

4. Results

4.1 Descriptive Analysis of Demographic Data

The questionnaires that provide demographic data include gender, age, education level, marital status, income per month, purchasing green food products regularly, and spending on green food per time (approximately). The descriptive analysis,

which comes from SPSS, is the researcher's program to explain the respondent's characteristics. The details demonstrate the frequency distribution and percentage of the sample size of 447 respondents as below.

Gender; the majority of all 447 respondents from analysis in the questionnaire, the highest percentage by 60.0% comes from female, followed by a male that provided percentage is 34, and LGBTQ+ is 5.4% which is the lowest gender respondents. The respondents for female, male, and LGBTQ+ are 271, 152, and 24 people.

Age; the majority of the respondent with a total of 447. The most respondent in this research is between 36 – 45 years old with 27.5 %, followed by respondents 26-35 years old with a total of 109 people or 24.4%, after that the age of respondents between 46 – 55 years old, with a total of 101 people, or 22.6%, is the third-highest number of respondents, 90 respondents who are the age between 18 – 25 years old or the percentage by 20.1%, and the lowest respondent is the age over 55 years old with the percentage by 5.4%.

Education level; a Bachelor's Degree is the highest respondent education level with a total of 297 respondents or 66.4%, followed by a respondent education level of master's degree with 88 respondents or 19.7%, and 57 respondents, which comes from a high school education level of 12.8%, lower than high school with a total of 5 people or a percentage of 1.1. There is no education level of Ph.D. among all respondents.

Marital status; from 477 respondents, 236 respondents are single with 52.8%, followed by married with 193 respondents or 43.2%. The lowest marital status is divorced, with 18 respondents or 4%.

Income per month; among all 447 respondents, the distribution shows that the highest average income per month percentage of 20,001 – 50,000 baht is 46.3% or 207 respondents. The second income per month from respondents is less than 20,000 baht with 107 respondents or 23.9%, followed by 86 respondents or 19.2% from the range of income per month is 50,001 – 100,000 Baht. The lowest number of respondents is 47 people who stay in the range of income per month is over 100,000 Baht with 10.5%.

Purchasing Green Food Products regularly; the most frequent respondent in this survey of green food purchasing is 189 respondents, with 42.3%, who have 1–3 times per month to purchase, followed by 118 respondents with 26.4% for buying green food 4–6 times per month, 69 respondents are less than once a month for green food purchasing or 15.4%, 38 respondents who have more than 9 times per month for green food purchasing or 8.5%, and lastly, 33 respondents who have 7 - 9 times per month for purchasing green food products, with a percentage of 7.4.

Spending on Green Food Per Time (approximately); most respondents participate in the questionnaire by spending on green food per time approximately between 100-500 Baht, followed by 56.4% or 90 respondents who spend money on purchasing green products per time between 501 - 800 Baht and calculated with the percentage of 20.1, 56 respondents who spend less than 100 Baht, with the total percentage of 15.4, 44 respondents who spent between 801- 2,000 Baht or 9.8%, and lastly, with five respondents who spent more than 2,000 Baht or 1.1%.

4.2 Descriptive Analysis with Mean and Standard Deviation

This section summarizes the Mean and Standard Deviation of each group variable, including green food purchase intention, health consciousness, attitude, perceived behavioral control, subjective norm, and impact on COVID-19. The following are the criteria for evaluating the mean scores, which were adopted from Moidunny (2009) as mentioned the range between 4.21 – 5.00 indicated as "Very high," 3.21 – 4.20 indicated as "high," 2.61 – 3.20 indicated as "medium," 1.81 – 2.60 indicated as "low," and 1.00 – 1.80 indicated as very low.

Table 2. Results of Mean and Standard Deviation

Item No.	Variables/Measurement Items	Mean	Std. Deviation	Interpreted
Green Food Purchase Intention				
GPI1	My desire to purchase green food products is really strong.	3.50	0.692	High
GPI2	I intend to purchase green food products because they are environmentally friendly and healthy.	3.93*	1.023	High

GPI3	Despite the increased pricing during COVID-19, I am willing to purchase organic food.	3.63	1.059	High
GPI4	In the near future, I will prefer to buy green food rather than conventional food.	3.75	1.087	High
Health Consciousness				
HC1	I would consume more green foods to improve my health during the COVID-19 pandemic.	3.53	0.701	High
HC2	To maintain my health, I carefully selected my food.	4.06*	0.953	High
HC3	I frequently consider health-related concerns.	3.98	0.931	High
HC4	I perceive myself to be a wellness consumer.	3.70	1.044	High
HC5	I always join a health check-up program every year.	3.71	1.131	High
Attitude				
A1	I like green food products because they are prepared without using chemicals.	3.90	0.997	High
A2	I like green food products because they cause fewer illnesses than conventional food.	3.82	1.025	High
A3	Green food products are beneficial to me.	4.03*	0.988	High
A4	I think many people are looking for health benefits from green food products.	4.03*	0.973	High
A5	It is a good idea to buy green food products.	3.98	0.975	High
Subjective norm				
SN1	My conversations with others about green products have influenced my decision to buy green food.	3.53	1.064	High
SN2	My family and friends would welcome it if I purchased green food.	3.70	1.048	High
SN3	People around me generally believe that eating green food is beneficial for our health.	3.86*	1.027	High
SN4	Many people around me have conversations about how chemicals from food have affected their health in the long term.	3.64	1.116	High
SN5	My family, friends, or colleagues always consider products that help the environment.	3.61	1.076	High
Perceived Behavioral Control				
PBC1	I am certain that if I choose, I can purchase organic food.	3.74	0.996	High
PBC2	It is totally up to me to purchase green food.	3.78	1.023	High
PBC3	I am always confident when I purchase green food products by myself.	3.85*	0.982	High
PBC4	When other people are convinced to purchase more conventional food, I have the ability to deny them.	3.78	1.034	High
Impact of COVID-19				
IOC1	During COVID-19 make me turn to purchase more green food product	3.56	1.080	High
IOC2	The COVID-19 outbreak, in my opinion, will change society to buy more healthy food.	3.54	1.126	High
IOC3	The COVID-19 of a pandemic makes me more concerned about environmental issues when purchasing green food products.	3.56	1.094	High

IOC4	The COVID-19 changed my habit of purchasing green food in the long term.	3.51	1.130	High
IOC5	The COVID-19 changed my habit to preserve my health.	3.81*	1.074	High
IOC6	During COVID 19, when I shop in the marketplace, I consider looking at green products first.	3.59	1.080	High

***Note:** * The highest mean*

Table 2 shows the means from the question in each variable, including green good purchase intention, health consciousness, attitude, subjective norm, perceived behavioral control, and impact of COVID-19. The highest mean of green food purchase intention's question was "I intend to purchase green food products because they are environmentally friendly and healthy," which equals 3.93. For the health consciousness, the highest mean was "To maintain my health, I carefully selected my food." which equals 4.06. Moreover, the highest mean of attitude was "Green food products are beneficial to me." and "I think many people are looking for health benefits from green food products, "equaling 4.03. The question with the highest mean of the subjective norm was "People around me generally believe that eating green food is beneficial for our health." which equals 3.86. Then, the highest means of perceived behavioral control question was "I am always confident when I purchase green food products by myself." which equals 3.85. Lastly, the highest mean of Impact of COVID-19 was "The COVID-19 changed my habit to preserve my health." which equals 3.81.

4.3 Hypothesis Testing Results

4.3.1 Summary of Simple Linear Regression

Table 3 indicated that the significant level was at 0.000, less than 0.05. The null hypothesis was rejected. Therefore, the variable can be concluded that health consciousness is affected by the impact of COVID-19. In addition, the impact of COVID-19 has a standardized coefficient of 0.708. The variable can be used that if the impact of COVID-19 increases by 1%, the health consciousness will be raised by 70.8%.

Hypothesis 1

$H1_0$: Impact of COVID-19 has no significant influence on health consciousness

$H1_a$: Impact of COVID-19 has a significant influence on health consciousness

Table 3. Summary of Simple Linear Regression Analysis for Hypotheses 1

Variables	B	SE B	β	t	Sig.	VIF
Impact of COVID-19	0.580	0.027	0.708	21.138	0.000*	1.000

***Note.** $R^2 = 0.501$, Adjusted $R^2 = 0.500$, *p < 0.05. Dependent Variable = Health Consciousness*

Table 4 revealed that the significant level was at 0.000, less than 0.05. The null hypothesis was rejected. Therefore, the variable can be concluded that green food purchase intention is affected by the impact of COVID-19. In addition, the impact of COVID-19 has a standardized coefficient of 0.730. The variable can be used that if the impact of COVID-19 grows by 1%, the green food purchase intention will be raised by 73%.

Hypothesis 2

$H2_0$: Impact of COVID-19 has no significant influence on green food purchase intention during COVID-19.

$H2_a$: Impact of COVID-19 has a significant influence on green food purchase intention during COVID-19.

Table 4. Summary of Simple Linear Regression Analysis for Hypotheses 2

Variables	B	SE B	β	t	Sig.	VIF
(Constant)	1.383	0.107		12.953	0.000	
Impact of COVID-19	0.645	0.029	0.730	22.526	0.000*	1.000

***Note.** $R^2 = 0.533$, Adjusted $R^2 = 0.532$, *p < 0.05. Dependent Variable = Green Food Purchase Intention*

4.3.2 Summary of Simple Linear Regression

Table 5 indicated that the significant level was 0.000, less than 0.05. The null hypothesis was rejected. Therefore, it can be established that green food purchase intention has been affected by health consciousness. In addition, health consciousness has a standardized coefficient of 0.443 which means if health consciousness increases by 1%, the green food purchase intention raises by 44.3%.

Hypothesis 3

$H3_0$: Health consciousness has no significant influence on green food purchase intention during COVID-19.

$H3_a$: Health consciousness has a significant influence on green food purchase intention during COVID-19.

Table 5 indicated that the significant level was 0.000, less than 0.05. The null hypothesis was rejected. Therefore, it can be established that green food purchase intention has been affected by attitude. Moreover, an attitude has a standardized coefficient of 0.201 which means if attitude increases by 1%, the green food purchase intention raises by 20.1%.

Hypothesis 4

$H4_0$: Attitude has no significant influence on green food purchase intention during COVID-19.

$H4_a$: Attitude has a significant influence on green food purchase intention during COVID-19.

Table 5 indicated that the significant level was 0.00, less than 0.05; the null hypothesis was rejected. Therefore, the variable can be established that green food purchase intention has been affected by subjective norms. Furthermore, the subjective norm has a standardized coefficient of 0.232 which means if the subjective norm increases by 1%, the green food purchase intention raises by 23.2%.

Hypothesis 5

$H5_0$: Subjective norm has no significant influence on green food purchase intention during COVID-19.

$H5_a$: Subjective norm significantly influences green food purchase intention during COVID-19.

Table 5 indicated that significant level was 0.590, which is more than 0.05; the alternative hypothesis was rejected. Therefore, the variable can be concluded that perceived behavioral control has not affected green food purchase intention. However, perceived behavioral control has a standardized coefficient of 0.026 which means if perceived behavioral control increases by 1%, the green food purchase intention raises by 2.6%.

Hypothesis 6

$H6_0$: Perceived behavioral control has no significant influence on green food purchase intention during COVID-19.

$H6_a$: Perceived behavioral control has a significant influence on green food purchase intention during COVID-19

Table 5. Summary of Multiple Linear Regression Analysis for Hypotheses 3,4,5, and 6

Variables	B	SE B	β	t	p-value	VIF
Health Consciousness	0.478	0.046	0.443	10.442	0.000*	2.429
Attitude	0.193	0.047	0.201	4.069	0.000*	3.290
Subjective norm	0.214	0.047	0.232	4.513	0.000*	3.571
Perceived behavioral control	0.025	0.047	0.026	0.539	0.590	3.228

Note. *$R^2 = 0.672$, Adjusted $R^2 = 0.669$, *p-value < 0.05 Dependent Variable = Green Food Purchase Intention*

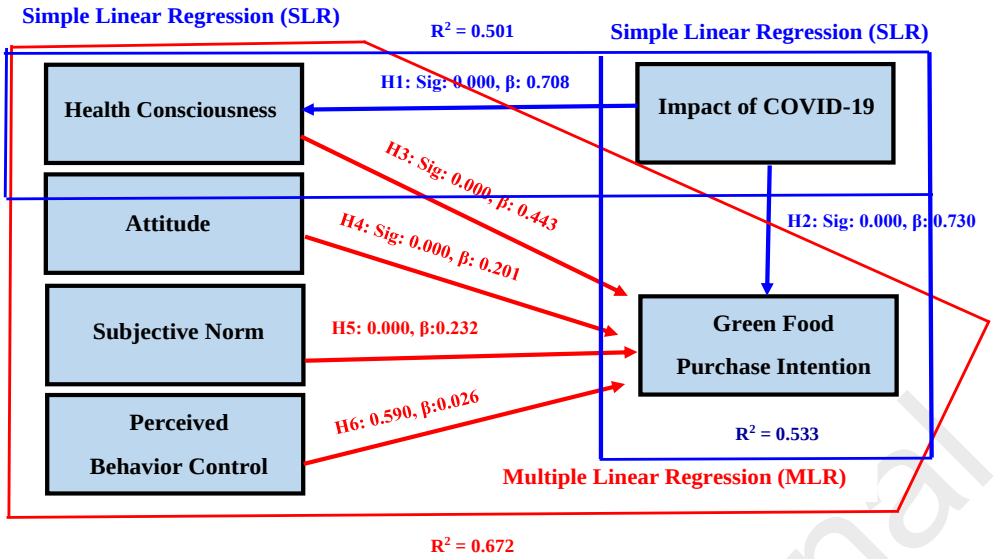

Figure 2. The results of the structural model
Source. Authors.

5. Discussion and Conclusion

Overall 447 respondents in the part of demographic found that the majority of respondents in this research was female (271, 60.6%), age group between 36-45 years old (123, 27.5%), education level is bachelor's degree (297, 66.4%), marital status is single (236, 52.8%), earned as income per month is between 20,001 – 50,000 Baht (207, 46.3%), the regular that they purchase green food purchase intention is between 1-3 times per month (189, 42.3%), the spending on green food per time (approximately) is between 100 – 500 baht (252, 56.4%). There is a significant positive impact of COVID-19, health consciousness, attitude, and subjective norm toward green food purchase intention. Thus, perceived behavioral control does not significantly influence green food purchase intention, as provided in table 6.

Table 6. Summary results from hypothesis testing

Hypothesis	p-value	Standardized Coefficient	Result
$H1_0$ Impact of COVID-19 has no significant influence on health consciousness.	.000*	0.708	Rejected
$H2_0$ Impact of COVID-19 has no significant influence on green food purchase intention during COVID-19.	.000*	0.730	Rejected
$H3_0$ Health consciousness has no significant influence on green food purchase intention during COVID-19.	.000*	0.443	Rejected
$H4_0$ Attitude has no significant influence green food purchase intention during COVID-19.	.000*	0.201	Rejected
$H5_0$ Subjective norm has no significant influence on green food purchase intention during COVID-19.	.000*	0.232	Rejected
$H6_0$ Perceived behavioral control has a significant influence on green food purchase intention during COVID-19.	.590	0.026	Failed to reject

Note. p-value <0.05*

5.1 Health consciousness and green food purchase intention

This research reflexed that health consciousness had a positive and significant relationship with green food purchase intention. The significant value of

health consciousness and green food purchase intention is .000. This indicates that the consistency of the consumer to initiate the way to get health consciousness had a significant contribution to green food purchase intention. This result agrees with Katt and Meixner (2020) that health consciousness could significantly influence food product buying decisions, particularly when it comes to green foods. Numerous studies have indicated that health consciousness is a motivator for green food purchases. Furthermore, health consciousness refers to how health issues are integrated into a person's daily activities (Wang et al., 2021). Aungatichart et al. (2020) also investigated that organic engagement affected the relationship between health consciousness and purchasing intention.

5.2 Attitude and green food purchase intention

This study indicated that attitude had a positive and highly strong correlation with green food purchase intention. The significant value of attitude and green food purchase intention is .000. This result indicated that the consumer's consistency maintains and increases attitude, and green food purchase intention is the key to increasing green food purchase intention. This study was conducted in connection with the study by Nguyen et al. (2019), which mentioned that consumers' favorable perceptions about organic food consider that acquiring organic food is essential and a worthy investment. Furthermore, Boobalan et al. (2021) declared that attitude is the tendency to support or oppose a particular action. Previous research has repeatedly shown that green food customers' attitudes positively impact purchasing intention.

5.3 Subjective norm and green food purchase intention

This study showed that subjective norm had a positive and highly significant relationship with green food purchase intention. The significant value of subjective norm and green food purchase intention is .000. The reflexed that the consistency of the consumers to maintain and increase subjective norm of the consumers. Additionally, the result of this study correlates with Vu et al. (2021) stated that subjective norms are perceived societal influences that encourage or discourage people from buying green goods. Moreover, Qi et al. (2020) stated that green purchasing intention behavior had been related to social norms and values, communities, and cultural influences in certain research.

5.4 Perceived behavioral control and green food purchase intention

This study showed that perceived behavioral control had a negative and not significant relationship with green food purchase intention. The significant value of perceived behavioral control and green food purchase intention is .590, which means this factor was insignificant toward green food purchase intention. Therefore, this research related to Qi et al. (2020) indicated that perceived behavioral control had conflicting effects on purchase intention. Earlier research has emphasized the absence of influence on purchase intention on green food. Moreover, Johe and Bhullar (2016) mentioned opposing motives during the decision-making process. Furthermore, in the event of a collectivism-dominant cultural logic, customers might feel less freedom and self-determination in their purchasing decisions, which may cancel out the predicted benefit of perceived behavioral control on intentions. Moreover, one possible explanation, for this reason, is derived from the questionnaire. As seen in the bar chart of perceived behavioral control below, the overall respondents' answers in neutral more than agree and strongly agree with question three, which is "I am always confident when I purchase green food products by myself.". This bar chart shows that the respondent hesitates to answer with a "strongly agree." As a result, they have the option of selecting other food products from a variety of alternatives or among the respondents who came from their society.

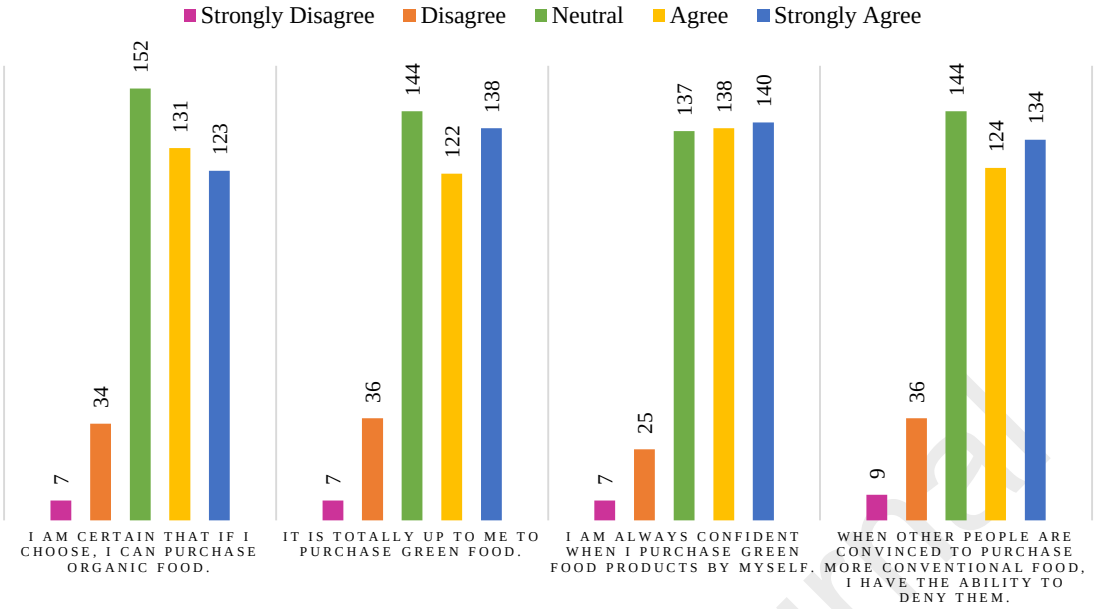

Figure 3. Bar Chart of Perceived Behavioral Control variables toward Green Food Purchase Intention and Health Consciousness During COVID-19 in Bangkok, Thailand

5.5 Impact of COVID-19 and green food purchase intention, Impact of COVID-19 and health consciousness

This study showed that the impact of COVID-19 had a positive and highly significant relationship with green food purchase intention and health consciousness. The significant value of the impact of COVID-19 and green food purchase intention and health consciousness is .000. The reflexed that the consistency of the consumers to maintain and increase the impact of COVID-19 of the consumers. Furthermore, the result of this research correlates with Xie et al. (2020) declared that food safety, which consumers purchase as green food, is becoming more prevalent regarding COVID-19. People prefer to eat more ecologically friendly meals as their food safety considerations grow. Green food satisfies the existing need due to its several advantages. Moreover, for the health consciousness, respondents from their research felt that COVID-19 had a favorable influence on transforming their green food buy intentions into behaviors. Some participants stated that eating green foods was essential to improving their immunity and health, particularly during global health emergencies (Qi et al., 2020). Xie et al. (2020) explored that the COVID-19 pandemic would shift people's behaviors and habits toward healthier and more sustainable.

6. Recommendations

According to the conclusion, the findings of this study show that there are relationships between variables that subsequently affect green food purchase intention. The influence factors in this study, health consciousness, subjective norm, attitude, and impact of COVID-19, have a positive and strongly significant factor on green food purchase intention. At the same time, the impact of COVID-19 has strongly significant influences on health consciousness. This research shows that the impact of COVID-19 has the most significant influence on green food purchase intention. The results of this study will gain advantages to green food industries and the Thai government to receive this information as provided in other two sections as below:

During this COVID-19 pandemic, the green food industries make the people more concerned about their health and environment by selecting the benefits for them. Therefore, green food companies should consider changing the marketing strategies to let the customers have the perception and decision to purchase green food products. The green food companies are using advertising on social media platforms (e.g., TikTok, Facebook, and Instagram) or digital marketing tools (e.g., Google Analytics) to create a key message that makes consumers turn to consider themselves and ask themselves if they do not consume green food, what is happening to them

during the COVID-19 and after pandemic in the long-term to their health. In this case, it has the potential to make people word of mouth (WOM) by sharing their experience with green food knowledge with others and motivating them to consider a long-term change in attitude and behavior.

According to the findings of this study, the promotion strategies should be considered (such as competitive prices, product qualities, product differentiation, and price discount) to increase consumer awareness and lead to buying decisions and pleasure. These techniques would help to ensure the long-term viability of businesses. Due to the greenest food products is a perfect competition that not much for changing the price if the company does not build product differentiation to make the customer's perception for purchasing. The option to build brand differentiation by significantly increasing the volume and diversity of green food products in community stores and conventional supermarkets is an excellent method for ensuring easy availability and improved choices. Furthermore, in this situation, consumers have a plethora of food alternatives to choose from, some of which can replace green food. Therefore, the company can put the reliability logo to guarantee that the product is safe from chemicals, environmentally friendly, and healthy to consume.

Thai government; governments should introduce laws to secure and encourage green food industries and distributions, also enable more productive use of keywords, labels, and certifications on the products. These measures are critical for increasing the accessibility of green food products and effectively communicating and demonstrating their advantages to better individual health and the social environment. For example, in China, when they need the citizens to understand the meaning of green food more accurately, the Ministry of Agriculture in China has to check the progress and guarantee with the China Green Food Development Center by setting the green food symbol on the product to let the consumer be confident and stay away from the issues (Department of International Trade Promotion, Ministry of Commerce, THAILAND, 2021). This recommendation can make the Thai government control the green food industry for chemical green food product intake and the health of citizens.

As a result, in the attitude section, some citizens do not have much concern about chemicals from green food products. Therefore, the government should provide information or knowledge about the issue when considering the chemical intake of foods. The result shows that they are not very aware of this point. Communication to educate their citizens on the benefits of selecting green food is important. The Thai government can set the campaigns on mobile application to develop their health, which is good affected to the Thai Ministry of Health.

7. Further Study

This study examined the impact of COVID-19 on green food purchase intention and health consciousness in Bangkok, Thailand. To improve the generalizability and reliability of the findings, the researcher should study a larger sample and population. Due to the time limit and COVID-19 pandemic, this study's sample size focused on Bangkok. Because of this, one variable, perceived behavioral control, is insignificant and does not support the influencing factor. If the researcher could visit more provinces, he or she could compare the responses to the questionnaire. Aside from Thailand, other studies may acquire and apply information from other historical backgrounds to add to our knowledge of green food purchase intention. Previous study publications exist, but may not be completely current. Also, the COVID-19 condition is difficult to assess and collect with a target sample. By doing analytical reasoning in a short period of time, respondents focus less on the survey. The researcher can interview in-depth and know why they answer in this point to be more direct in respondent's opinion.

References

Ashraf, M. A., Joarder, M. H. R., & Ratan, S. R. A. (2019). Consumers' anti-consumption behavior toward organic food purchase: an analysis using SEM. *British Food Journal*, *121*(1), 104–122. https://doi.org/10.1108/BFJ-02-2018-0072

Aungatichart, N., Fukushige, A., & Aryupong, M. (2020). *Mediating role of consumer identity between factors influencing purchase intention and actual behavior in organic food consumption in Thailand*.

Bollen, K. A. (1989). *Structural Equations with Latent Variables.* John Wiley & Sons, Inc.

Boobalan, K., Nawaz, N., Harindranath, R. M., & Gajenderan, V. (2021). Influence of altruistic motives on organic food purchase: Theory of planned behavior. *Sustainability (Switzerland)*,

13(11), 1–14. https://doi.org/10.3390/su13116023

Burns, N., & Grove, S. K. (1997). *The practice of nursing research: Conduct, critique and utilization (3rd ed.)*. Saunders.

Campos, P. de O., Mélo, L. B. de, de Souza, J. C. V., Santana, P. N. de, Matte, J., & Costa, M. F. da. (2021). Consumer fear and healthy eating during COVID-19 pandemic. *Marketing Intelligence & Planning*, *ahead-of-p*(ahead-of-print). https://doi.org/10.1108/mip-04-2021-0125

Clark-Carter, D. (2010). Quantitative Psychological Research: The Complete Student's Companion. In *Psychology Press—Taylor & Francis.*

Cochran, W.G. (1977). Sampling Techniques (3rd edition). John Wiley &Sons, New York.

Cooper, D. R., & Schindler, P. S. (2011). *Business Research Methods 11th Edition.* McGraw_Hill Companies, Inc.

Cronbach, J. L. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*,

16(3), 297–334. https://doi.org/10.1007/BF02310555

Department of International Trade Promotion, Ministry of Commerce, THAILAND. (2021). *Trend of Green Food in China Market*. https://ditp.go.th/ditp_web61/article_sub_view.php?filename=contents_attach/712837/712837.pdf&title=712837&cate=414&d=0

Ding, H., Li, H., & Liu, X. (2021). *The Influential Factors on Consumer Purchase Intention for Organic Food in China : 203*(Icemci), 2155–2161.

Drost, E. (2011). Validity and Reliability in Social Science Research. *Education Research and Perspectives, 38*(1), 105 – 123.

Hair, J., Hollingsworth, C., Randolph, A. B., & Chong, A. (2017). An updated and expanded assessment of PLS-SEM in information systems research. *Ind. Manag. Data Syst.*, 117, 442–458.

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2013). Partial least squares structural equation modeling: rigorous applications, better results and higher acceptance. *Long Range Planning*, *46*(1/2), 1–12.

Hair, Joseph F., Black, W., Babin, B. J., & Anderson, R. E. (2010). *Multivariate Data Analysis: A Global Perspective* (Seventh Ed). Pearson.

Hambleton, R. K. (1978). On the use of cut-off scores with criterion-referenced tests in instructional settings. *Journal of Educational Measurement, 15*, 177–290.

Hong Wang, B. M. and R. B. (2019). How Does Green Product Knowledge Effectively Promote Green Purchase Intention? *Sustainability*, *11*(4), 1193. https://doi.org/10.3390/su11041193

Johe, M.H.; Bhullar, N. To buy or not to buy: The roles of self-identity, attitudes, perceived behavioral control and norms in organic consumerism. *Ecol. Econ.* 2016, 128, 99–105.

Kapoor, A., & Nuangjamnong, C. (2021). Factors Affecting Purchase Intention of Air Purifier as Green Product among Consumers during the Air Pollution Crisis. AU-GSB e-Journal, 14(2), 3–14. https://doi.org/10.14456/augsbejr.2021.10

Katt, F., & Meixner, O. (2020). Is it all about the price? An analysis of the purchase intention for organic food in a discount setting by means of structural equation modeling. *Foods*, *9*(4), 1–13. https://doi.org/10.3390/foods9040458

Kervin, J. B. (1992). *Methods for Business Research*. Harper Collins Publishers.

Lavrakas, P. J. (2008). *Encyclopedia of survey research methods*. Sage Publications. https://doi.org/10.4135/9781412963947

Liu, M. (2022). *The Effects of Organic Certification on Shoppers ' Purchase Intention Formation in Taiwan : A Multi-Group Analysis of Structural Invariance*.

Moidunny, K. (2009). The effectiveness of the National Professional Qualifications For Educational Leaders (NPQEL) (Unpublished doctoral dissertation), Bangi: The National University of Malaysia.

Munamba, R., & Nuangjamnong, C. (2021). The Impact of Green Marketing Mix and Attitude towards the Green Purchase Intention among Generation y Consumers in Bangkok. *SSRN Electronic Journal*, 1–20. https://doi.org/10.2139/ssrn.3968444

Nguyen, H. V., Nguyen, N., Nguyen, B. K., Lobo, A., & Vu, P. A. (2019). Organic food purchases in an emerging market: The influence of consumers' personal factors and green marketing practices of food stores. *International Journal of Environmental Research and Public Health*, *16*(6). https://doi.org/10.3390/ijerph16061037

Nitchote, T., & Nuangjamnong, C. (2022). The New Normal Service Quality and Behaviour Food Purchase Intention During COVID-19. *AU-HIU International Multidisciplinary Journal*, *2*(1), 9–20. http://www.assumptionjournal.au.edu/index.php/auhiu/article/view/5859

Polonsky, M. J., & Waller, D. S. (2015). *Designing and managing a research project: a business student's guide.* Sage Publications.

PopulationU.com. (2022). *Bangkok Population*. Populationu.Com.

Qi, X., & Ploeger, A. (2021). Explaining chinese consumers' green food purchase intentions during the covid-19 pandemic: An extended theory of planned behaviour. *Foods*, *10*(6). https://doi.org/10.3390/foods10061200

Qi, X., Yu, H., & Ploeger, A. (2020). Exploring influential factors including COVID-19 on green food purchase intentions and the intention–behaviour gap: A qualitative study among consumers in a Chinese context. *International Journal of Environmental Research and Public Health*, *17*(19), 1–22. https://doi.org/10.3390/ijerph17197106

Saleki, R., Quoquab, F., & Mohammad, J. (2019). What drives Malaysian consumers' organic food purchase intention? The role of moral norm, self-identity, environmental concern and price consciousness. *Journal of Agribusiness in Developing and Emerging Economies*, *9*(5), 584–603. https://doi.org/10.1108/JADEE-02-2019-0018

Teixeira, S. F., Barbosa, B., Cunha, H., & Oliveira, Z. (2022). *Exploring the Antecedents of Organic Food Purchase Intention : An Extension of the Theory of Planned Behavior*.

Troudi, H., & Bouyoucef, D. (2020). Predicting purchasing behavior of green food in Algerian context. *EuroMed Journal of Business*, *15*(1), 1–21. https://doi.org/10.1108/EMJB-03-2019-0046

Vu, D. M., Ha, N. T., Ngo, T. V. N., Pham, H. T., & Duong, C. D. (2021). Environmental corporate social responsibility initiatives and green purchase intention: an application of the extended theory of planned behavior. *Social Responsibility Journal*. https://doi.org/10.1108/SRJ-06-2021-0220

Wang, H., Ma, B., Cudjoe, D., Bai, R., & Farrukh, M. (2021). How does perceived severity of COVID-19 influence purchase intention of organic food? *British Food Journal*, *ahead-of-p*(ahead-of-print). https://doi.org/10.1108/bfj-06-2021-0701

Wang, X., Pacho, F., Liu, J., & Kajungiro, R. (2019). Factors Influencing Organic Food Purchase Intention in Developing Countries and the Moderating Role of Knowledge. *Sustainability (Switzerland)*, *11*(1). https://doi.org/10.3390/su11010209

Woo, E., & Kim, Y. G. (2019). Consumer attitudes and buying behavior for green food products: From the aspect of green perceived value (GPV). *British Food Journal*, *121*(2), 320–332. https://doi.org/10.1108/BFJ-01-2018-0027

Xie, X., Huang, L., Li, J., & Zhu, H. (2020). Generational differences in perceptions of food health/risk and attitudes toward organic food and game meat: The case of the COVID-19 crisis in China. *International Journal of Environmental Research and Public Health*, *17*(9). https://doi.org/10.3390/ijerph17093148

World Health Organization (2020). *Rolling updates on coronavirus disease (COVID-19).* https://www.who.int/emergencies/diseases/novel-coronavirus-2019/events-as-they-happen

Zikmund, W. G., Babin, B. J., Carr, J. C., & Griffin, M. (2013). Business Research, Methods 9th Edition. South-Western: Cengage Learning.