

The Moderation of Income and Environmental Concern and Organic Food of Millennials in Vietnam

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Doctoral Thesis Summary

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The Moderation of Income and Environmental Concern and Organic Food of Millennials in Vietnam

Změny v příjmech a přístupu k problematice životního prostředí a biopotravin u generace mileniálů ve Vietnamu

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ABSTRACT

The study follows the positivism paradigm and has used primary data to examine the theory of planned behavior extension and organic food of millennials in Vietnam. The main aim of this research is to investigate millennials' income and environmental concern for organic food purchase intention by applying the theory of planned behavior. The cluster and snowball technique were applied to collect data from southern, central, and northern Vietnam. Data were analyzed with the help of structural equation modeling (SEM) from the Smart-PLS tool and moderation analysis with the SPSS tool. The results show the positive effect of attitude, subjective norms, and perceived behavioral control on Vietnamese millennials' purchase intention toward organic food. Moreover, income was found to be the moderator of the relationship between subjective norms and purchase intention, attitude and purchase intention. Income did not moderate the relationship between perceived behavioral control and purchase intention. Environmental concern was the moderator of the relationship between perceived behavioral control and purchase intention, subjective norms and purchase intention, attitude and purchase intention. Last but not least, there was a three-way interactive effect of environmental concern, income, and attitude on purchase intention. The three strongest influences of attitude on purchase intention toward organic food are the condition of the high value of environmental concern and income level from 10 million to 20 million VND (the strongest influence); income level of more than 40 million VND (the second strongest influence); income level from 20 to 30 million VND (the third strongest influence). Under the condition of income of less than 30 million VND and low value of environmental concern, attitude did not predict purchase intention.

ABSTRAKT

Studie vychází z pozitivistického paradigmatu a využívá primární data k rozšířenému zkoumání teorie plánovaného chování a biopotraviny u mileniálů ve Vietnamu. Hlavním cílem tohoto výzkumu je prozkoumat a ověřit záměr mileniálů nakupovat biopotraviny z hlediska jejich příjmů a zájmu o životní prostředí s využitím teorie plánovaného chování. Ke sběru dat z jižního, středního a severního Vietnamu byla použita technika shluku a sněhové koule. Data byla analyzována pomocí modelování strukturálních rovnic (SEM) s využitím nástroje Smart-PLS a analýzy moderace pomocí nástroje SPSS. Výsledky poukazují na pozitivní vliv postoje, subjektivních norem a kontroly chování na záměr vietnamských mileniálů nakupovat biopotraviny. Navíc bylo zjištěno, že příjem funguje jako moderátor vztahu mezi subjektivními normami a záměrem nakupovat, postojem a záměrem nakupovat. Příjem však nebyl moderátorem ve vztahu mezi kontrolou chování a nákupním záměrem. Zájem o životní prostředí byl shledán jako moderátor vztahu mezi kontrolou chování a záměrem nakupovat, subjektivními normami a záměrem nakupovat, postojem a záměrem nakupovat. V neposlední řadě byl zjištěn trojstranný interaktivní efekt zájmu o životní prostředí, příjmu a záměru nakupovat. Tři nejsilnější aspekty ovlivňující záměr nakupovat biopotraviny jsou vysoký zájem o životní prostředí a výše příjmu od 10 do 20 milionů VND (nejsilnější faktor); výše příjmu nad 40 milionů VND (druhý nejsilnější faktor); výše příjmu od 20 do 30 milionů VND (třetí nejsilnější faktor). V případě příjmu nižšího než 30 milionů VND a nízkého zájmu o životní prostředí se záměr nakupovat nepředpokládal.

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ABBREBIATIONS

TPB: Theory of Planned Behavior

ATT: Attitude

SN: Subjective Norms

PBC: Perceived Behavioral Control

IC: Income

EC: Environmental Concern

PI: Purchase Intention

PLS-SEM: Partial Least Squares Structural Equation Modeling

GDP: Gross Domestic Product

GMO: Genetically Modified Organism

1. INTRODUCTION

1.1 Study background

Economic reforms since 1986, combined with favorable global trends, have rapidly helped Vietnam grow from one of the poorest countries in the world to a lower middle-income country within a short period. The economy not only grows in size, but the quality of growth is also improved, and the people's living standards and spiritual life are significantly improved. Economic growth reached a high speed. After the first period from 1986 to 1990, the average annual GDP growth rate was only 4.4%. From 2002 to 2020, GDP per capita increased 3.6 times, reaching nearly USD 3,700. The poverty rate (according to the standard of 1.9 USD/day) dropped sharply from more than 32% in 2011 to less than 2%. In 2022, GDP growth is estimated to increase by 6 to 6.5%, GDP per capita reaching USD 3,900 (The World Bank, 2022a).

Along with the development of the economy and people's income, the demand for health care has also increased, especially for food products. In recent years, much unfavorable media coverage of dangerous food has impacted customers' health, either directly or indirectly. According to the report, food safety has become a significant consumer issue (Minh & Nhan, 2020). Furthermore, pesticide exposure has been linked to various illnesses. With pesticide, there are many harmful chemicals in food, including ones that affect the reproductive and nervous systems and can cause cancer (Willer & Lernoud, 2019). For long-term sustainability, it is important to encourage people to eat more sustainable food, especially organic food.

The organic food community has grown all over the world as organic food has become more popular. Organic farming is done in 187 countries, covering an area of about 72.3 million hectares (Mha) (Willer et al., 2021). Australia (35.7 million hectares), Argentina (3.7 million hectares), and Spain (2.4 million hectares) are the three countries with the most land dedicated to organic agriculture. At the end of 2019, it was estimated that the total market for organic food was worth EUR 106,4 billion, with the United States, Germany, and France being the top three markets in terms of value. In 2019, it was thought that more than 5.9 million hectares of land in Asia would be used for organic farming. According to the International Organic Agriculture Research Institute, the amount of organic farmland in Asia grew by 23.5% from 2015 to 2016, and by a total of 41,228 hectares over the last ten years (Willer & Lernoud, 2019). Vietnam's organic market is still in its early stages. It could soon make USD 270 million in retail sales in the United States and USD 335 million in international sales (Hoanangorganic, 2019; M. Nguyen, 2021).

In addition, the investigation chose the millennials for examination because this generation is the most important in the workforce as well as the significant consumer group, and they make up a big part of the market. In Vietnam, millennials were born between 1980 and 2000 and constitute 35% of Vietnam's

population (Prudential Viet Nam, 2020). Understand the need to research millennials regarding organic food in the Vietnamese market context, therefore, this thesis will pay attention to influences of income and environmental concern on millennials' intention to purchase organic food in Vietnam.

1.2 Research gaps

Different income and the intention to purchase organic food of millennials in Vietnam

As is the case with organic food, a customer's income is a crucial component in determining their purchasing decisions. In the theory of planned behaviour (TPB), the effect of income has been demonstrated by a number of experiments. In particular, a study that was conducted by Kuran and Mihic (2014) investigated the purchase of organic food purchasing with the application of the TPB in the Republic of Croatia. The findings of the investigation revealed that household income is found to be a significant factor that affects the intention to purchase organic food. In addition, the TPB was utilized in the research conducted by Gundala and Singh (2021), Hansmann et al. (2020), Singh and Verma (2017) to investigate consumers' behaviors in regard to buying organic food. Income is positively related to organic purchase (Hansmann et al., 2020). Moreover, age, education, and income are demographic factors that also impact consumers' buying behavior (Singh & Verma, 2017). Furthermore, there is a study has shown that socio-demographic factors such as age, education, and income were also found to have an impact on actual buying behavior (Gundala & Singh, 2021).

In addition, there are other researches employing alternative theories that reveal a substantial positive link between income and the purchase intention of organic products. These studies support the hypothesis that higher income levels are associated with more organic product consumption. In particular, the research conducted by Irandoust (2016) in Sweden used the proportional odds model and willingness to pay theory to investigate the purchasing behavior of organic food consumers. According to findings of the study, the likelihood that a person will purchase organic food increases with both their willingness to pay and their income level. In addition, Slamet et al. (2016) looked at customers' purchasing patterns and found that those who have a higher income and a smaller family size tend to buy organic vegetables more. In Vietnam, according to research carried out by Trinh (2021), it was discovered that the level of income possessed by customers has a strong and beneficial impact on their decisions about the purchase of organic agricultural goods.

The research that was just provided makes use of income as a predictor variable in order to analyze their purchase behavior in relation to organic food. Another study was conducted with income functioning as the control variable. According to Chen et al. (2014), the use of three theories—the consumer decision-making process, the TPB, and the 'hierarchy of effects' model—to study the drivers of organic food purchase intention in mainland China. The research used income as

a control variable, and the results showed that income had weak significant correlations with people's intention to purchase organic food.

The previous studies illustrate that income has the direct effect on purchase intention and actual purchase toward organic food. Moreover, income also plays as a control variable. However, there are no studies that have been conducted that use income as a moderator in accordance with the TPB in order to investigate the intention of millennials to purchase organic food. The association between attitude and purchase intention, subjective norms and purchase intention, perceived behavioral control and purchase intention are not the same for all customers that are millennials. Instead, this relationship will change based on the customer's income. *Therefore, the first gap is that different income leads to the different effects of the relationship between attitude and purchase intention, between subjective norms and purchase intention, between perceived behavioral control and purchase intention toward organic food of millennials in Vietnam*

Different environmental concern and the intention to purchase organic food of millennials in Vietnam

Concern about the environment has increased steadily (Han et al., 2010). It is clear that many unfavorable impacts, including pollution of the air and water as well as threats to public safety, are having an impact on the environment (Carvalho, 2006; Kim & Ikemoto, 2015; Lee, 2014). Excessive exposure to pesticides has been linked to a variety of diseases, including those that damage the reproductive and nervous systems as well as cancer; hence, encouraging more sustainable food consumption is essential to ensuring the planet's continued habitability in the long run (Nguyen et al., 2021). Because the fact that organic food does not contain any traces of pesticides or other chemicals may be too obvious to customers who buy organic food (Lee & Yun, 2015; Lee, 2020). Moreover, organic food is made from healthy, naturally occurring ingredients. The issue of how to best preserve the natural world is becoming increasingly pressing, particularly in less developed nations like Vietnam (Pham et al., 2018). The number of consumers who are concerned about the environment has led to an increase in the demand for environmentally friendly products, and more and more customers are searching for environmentally friendly products to purchase in an effort to better protect the environment and build more sustainable practices (Paul et al., 2016). Because of this condition, there has been a significant increase in interest in organic farming and organic food over the course of the past 15 years (Chekima, 2018). As a result, it is of vital importance to investigate the environmental concern's impact on the intention of customers to make purchases of organic food in developing nations like Vietnam.

The TPB has served as the foundation for a growing body of research that has offered substantial evidences. These evidences illustrate a direct effect of environmental concern on various aspects. For example, Li et al. (2019) conducted a study about "influence of environmental concern and knowledge on households' willingness to purchase energy-efficient appliances: a case study in

Shanxi, China”. According to the findings of the study, people's concern for the environment has a substantial correlation with their readiness to purchase energy-efficient home appliances. Moreover, the investigation of green product consumption predicting utilizes the theory of reasoned action and the TPB (Paul et al., 2016). This study focuses on the consumption of green products. According to the findings of the study, there is a direct influence of environmental concern on attitude, subjective norms, and perceived behavioral control. The findings of the research conducted by Maichum et al. (2016) also yield results that are similar to studies conducted on green products. In addition, Yadav and Pathak (2016b) investigated young people's intention toward the purchase of green products in a developing country. They did this by extending the TPB. According to research, environmental concern is associated not only with a positive attitude effect but also with an intention to purchase.

There have been many researches that indicate environmental concern has direct effects with the application of the TPB for investigating purchasing of organic food. There is a study on the consumption behavior of people in Italy and Pakistan who consume organic foods. According to findings of the research, environmental concern has a positive impact on attitude, subjective norms, and perceived behavioral control (Ishaq et al., 2021). The findings are consistent with the findings of the study by Nguyen et al. (2021). In this study, the primary factors that influence a consumer's decision to purchase organic meat in a developing market such as Vietnam were analyzed. The findings demonstrate that environmental concern has a positive effect on customers' attitude.

In terms of the study component of the direct effect, many previous researches show that environmental concern has a direct effect on purchase intention of organic food. The research conducted by Asif et al. (2018) demonstrates the direct effect which the environmental concern has on consumers' intention to purchase organic food. A comparative examination of Iran, Pakistan, and Turkey was used in the research to highlight the factors that influence intention to purchase organic food. Regarding the research findings conducted by Nguyen and Truong (2021), environmental concern has a direct influence on a consumer's intention to purchase organic food in Vietnam. In addition, environmental concern is researched as a mediator in accordance with the TPB in order to investigate organic food's purchase behavior. For instance, in a study about purchase intention towards organic food among young consumers using the TPB with role of environmental concern (Ahmed et al., 2021), the researchers found that environmental concern had a significant influence. The findings of this research indicate that environmental concern not only has a direct effect by attitude but also acts as a mediator of interaction between attitude and purchase intention.

Previous studies show the direct effects of environmental concern on purchase intention and actual purchase toward organic food. Moreover, environmental concern also is a mediator of a relationship between attitude and purchase

intention. However, there are relatively few studies that use environmental concern as a moderator with the application of the TPB. The association between attitude and purchase intention, subjective norms and purchase intention, perceived behavioral control and purchase intention are not the same for all customers that are millennials. Instead, these relationships will change based on the environmental concern of millennial customers. *Therefore, the second gap is that different environmental concern leads to the different effects of the relationship between attitude and purchase intention, between subjective norms and purchase intention, between perceived behavioral control and purchase intention toward organic food of millennials in Vietnam.*

The three- way interactive effect of income, environmental concern, and attitude

So far, there is no research that combines income and environmental concern as moderators with an application of the theory of planned behavior. The gaps presented above describe the moderation effects of income and environmental concern based on the TPB. Specifically, the rise in environmental concern and income leads to increased positive effects of relationships between attitude and purchase intention, subjective norms and purchase intention, perceived behavioral control and purchase intention related to organic food. This study will combine environmental concern and income as moderators to investigate the effect of attitude on purchase intention toward organic food of millennials in Vietnam. In other words, the three-way interactive effect of income, environmental concern, and attitude on purchase intention toward organic food of millennials in Vietnam will be examined. *Hence, the third gap of this thesis is the different combination of income and environmental concern leads to different effects of attitude on purchase intention toward organic food of millennials in Vietnam.*

1.3 Research problems

The average income of Vietnamese citizens is rising in tandem with the nation's overall economic expansion. People are becoming more concerned about maintaining a healthy lifestyle through using safe food products and in the environmentally responsible development of their communities. Because of this, people's interest in organic food has become increasingly important. Moreover, there is a significant population of about 100 million people (Worldometers, 2022), of which millennials make up the majority and significantly contribute to the country's overall economic development. In today's world, businesses selling organic food will find themselves against an increasingly competitive industry. Companies have a greater need to comprehend their customers, particularly millennials, in order to serve the requirements of customers better. The theory of planned behavior can adequately explain customers' purchase intention, which is an applicable theory. However, very little study has been done in Vietnam based on the TPB on the influence of millennials' income and environmental concern on purchase intention regarding organic food. Moreover, there is no research that

combines income and environmental concern as moderators with an application of the theory of planned behavior.

1.4 Research questions

From research gaps and problems, the main research question of this thesis is *"How do millennials' income and environmental concern influence their intention to purchase organic food based on the theory of planned behavior in Vietnam?"*

The sub-research questions were developed as follow:

- **Research question 1:** How to predict and understand the purchase intention of millennials toward organic food in Vietnam based on the theory of planned behavior?
- **Research question 2:** Is there a moderation effect of income on the relationship between attitude and purchase intention, perceived behavioral control and purchase intention, subjective norms and purchase intention of millennials toward organic food based on the theory of planned behavior in Vietnam?
- **Research question 3:** Is there a moderation effect of environmental concern on the relationship between attitude and purchase intention, perceived behavioral control and purchase intention, subjective norms and purchase intention of millennials toward organic food based on the theory of planned behavior in Vietnam?
- **Research question 4:** Is there a three-way interactive effect of income, environmental concern, and attitude on purchase intention toward organic food of millennials in Vietnam based on the theory of planned behavior?

1.5 Research objectives

The main aim of this research is to investigate millennials' income and environmental concern for organic food purchase intention by applying the theory of planned behavior. From this, the research objectives for this thesis are as follows:

- **Research objective 1:** To re-examine the direct effect of attitude, subjective norms, and perceived behavioral control on purchase intention toward organic food of millennials in Vietnam;
- **Research objective 2:** To examine the moderation effects of income based on the TPB toward organic food purchase intention of millennials in Vietnam;
- **Research objective 3:** To examine the moderation effects of environmental concern based on the TPB toward organic food purchase intention of millennials in Vietnam;

- **Research objective 4:** To investigate the three-way interactive effect of income, environmental concern and attitude on purchase intention toward organic food of the millennials in Vietnam;

2. BACKGROUND

2.1 Theory of planned behavior (TPB)

This thesis chooses the theory of planned behavior as a base theory for investigation because this theory can adequately explain customers' purchase intention and this theory shows determinants factors (attitude, subjective norms, and perceived behavioral control). The theory of planned behavior is developed from the theory of reasoned action by (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975). This theory describes the relationship between attitude, subjective norm, perceived behavioral control and behaviour. The purpose of this theory is to predict an individual's intention to engage in a behavior at a specific time and place.

There have been a great number of research done regarding organic food aspect that uses the TPB to investigate the behavior of customers. The study has been expanded to encompass a great deal of new conceptualizations and elaborations on the theory of planned behavior. For example, Arvola et al. (2008) explored the anticipated intention to purchase organic food with the importance of effective and moral attitude in the TPB. The findings indicate that attitude, subjective norms, and moral attitude all contributed to a significant degree in explaining differences in intention. Furthermore, a study of Turkey, Pakistan, and Iran was investigated with the purpose of highlighting the influence factors on consumers' purchase intention of organic food (Asif et al., 2018). Moreover, the gap between intention and behavior, between perceived behavioral control and behavior were examined by Sultan et al. (2020) with the moderation effects of communication, satisfaction and trust based on the TPB toward organic food. Nuttavuthisit and Thøgersen (2017) studied consumer trust in developing a market based on the TPB regarding organic food. Additionally, a study of evidence from a developing nation about young customers' intention to purchase organic food is investigated by Yadav and Pathak (2016). Yazdanpanah and Forouzani (2015) utilized the TPB to predict if students in Iran will go out of their way to purchase organic food or not. Boobalan et al. (2021) presented empirical research shows that it is possible to understand the psychological benefits of eating organic food. This research expands on the theory of planned behavior by proposing two additional constructs: warm glow and self-expressive benefits, which could further drive consumer attitude and purchase intention in the context of organic food consumption. According to Sadiq et al. (2021), the originality of the research suggests in its application of individuals' exploratory buying behavior features and food eating values as an extension of the TPB in predicting attitude and intention regarding the consumption of organic food. The study conducted by

Koklic et al. (2019) investigates the role of past behavior in determining several consequences in the context of organic food consumption. With the interplay of past consumption, attitude, and subjective norms in the purchasing of organic food, this study investigates the role of past behavior in determining organic food consumption. In this study, the links between past consumption of organic food, attitude, environmental concern, subjective norms, and future intention to purchase organic food are investigated. The findings indicate that the intake of organic food in the past had a beneficial influence on attitude about the purchase of organic food, subjective norms, and purchasing intention. Intention to purchase organic food is significantly influenced by a person's attitude as well as their subjective norms, in addition to past consumption. When compared to the effects of other antecedents, the effect of past behavior on an intention is the most significant.

The TPB has been the subject of a large number of studies in Vietnam, which have been conducted to investigate consumer behavior around the purchase of organic food. In Ho Chi Minh City of Vietnam, an investigation of Minh and Nhan (2020) presented the factors that customers in that city considered when deciding whether or not to make purchases of organic goods. According to the study's findings, customer attitude, subjective norms, and perceived behavioral control significantly influence consumers' purchasing intention. The study also discovered that health consciousness and food safety, environmental consciousness and consumer knowledge, and the availability of products significantly impact consumers' attitude toward organic food purchasing. Moreover, the investigation of Nguyen et al. (2021) looked at the consumption of organic meat produced sustainably by Vietnamese customers. According to the findings, environmental concern of customers is linked to attitude toward organic food purchases and minimize the importance of financial barriers connected with those purchases. Furthermore, whereas attitude and guilt associated with purchasing conventional meat had a beneficial effect on the intention to purchase organic meat, perceived financial barriers have a significant negative effect on this intention. Nguyen et al. (2019) studied the association of organic food purchasing and the personal aspects of consumers and the green marketing tactics of food retailers. According to the findings, consumers' worries about the environment, health, and food safety, as well as their knowledge of organic food, all had a significant impact on their attitude toward the purchase behavior of organic meat.

2.2 Definition of constructs in this thesis

2.2.1 Attitude

According to Ajzen (1991), the definition of attitude (ATT) is “favorable or unfavorable idea towards conducting certain behavior”. The assumption is that when the attitude is more positive, the behavior will more possibly happen. In this study, it can be assumed that when the attitude toward organic food consumption

is more positive, the purchase intention will more possibly happen. It leads to the positive effect of attitude on purchase intention regarding organic food.

2.2.2 Subjective norms

Subjective norms (SN) is defined as “perceived social pressure to perform or not perform the behavior” (Ajzen, 1991). This refers to the belief about whether most people approve or disapprove of the behavior. It relates to a person's beliefs about whether peers and people of importance to the person think he or she should engage in the behavior. In particular, if a person believes that significant people such as parents, spouse, and friends think he/she should buy organic food, a person will be more likely to have the intention to purchase organic food. It leads to the positive effect of subjective norms on purchase intention regarding organic food.

2.2.3 Perceived behavioral control

Perceived behavioral control (PBC) is defined as “an individual perceived ease or difficulty of performing the particular behavior” (Ajzen, 1991). Perceived behavioral control varies across situations and actions, which results in a person having varying perceptions of behavioral control depending on the situation. In particular, if a person believes that he/she feel easy to purchase organic food based on his/her available resources, a person will be more likely to have the intention to purchase organic food. It leads to the positive effect of perceived behavioral control on purchase intention regarding organic food.

2.2.4 Intention

The definition of intention is what people say they do, plan to do, or would do under certain circumstances (Ajzen, 1991). In other words, an indication of an individual's readiness to perform a given behavior. The intention is based on attitude toward the behavior, subjective norms, and perceived behavioral control. This thesis investigates purchase intention toward organic food of millennials in Vietnam.

2.2.5 Income

According to Cambridge Business English Dictionary (2022), the definition of income is that money that is earned from doing work or received from investments.

2.2.6 Environmental concern

Environmental concern refers to the degree to which people are aware of problems regarding the environment, their support of efforts to solve such problems, and a willingness to contribute personally to their solution (Dunlap & Jones, 2002, p. 485). The term environmental concern refers to “the affect associated with beliefs about environmental problems” (Schultz et al., 2005, p. 458)

2.3 Hypotheses development

2.3.1 Attitude, subjective norms, perceived behavioral control and purchase intention toward organic food

Based on the TPB, in the aspect of organic food research, numerous studies have shown that there are positive effects of attitude, subjective norms, and perceived behavioral control on purchase intention. According to Sadiq et al. (2021), the study predicts organic food choice as a consumption behavior. The extended TPB with food eating values and individuals exploratory buying behavioral traits. The study indicated that an individual's attitude toward consuming organic foods is the predictor of behavioral intention, followed by subjective norms, and then perceived behavioral control. Investigation of Ahmed et al. (2021) is about organic food purchase intention among young Chinese consumers applying the TPB. The findings indicated that attitude, subjective norms, and perceived behavioral control have positive effects on the purchase intention of young consumers for organic food. Moreover, in the study of Sultan et al. (2020), an attitude has a positive and significant effect on behavioral intention toward organic food consumption. According to (Nuttavuthisit & Thøgersen, 2017), the study is about the importance of consumer trust for the emergence of a market for organic food. With the TPB, the positive effect of the relationship between attitude and buying intention toward organic food is presented. Furthermore, Paul et al. (2016) use the extended TPB to predict green product consumption. The results show that consumer attitude and perceived behavioral control significantly predict purchase intention. Yazdanpanah and Forouzani (2015) studied organic food purchase intention of Iranian students with an application of the TPB. Results indicated that attitude was the main predictor of their intention to purchase organic foods. Arvola et al. (2008) predict the intention to purchase organic food with the application of the TPB in Italy, Finland and the United Kingdom. The finding illustrates that attitude and subjective norms have positive effects on the intention to purchase organic food.

In the Vietnamese organic food research aspect, the positive effects of the relationship between attitude, subjective norms, perceived behavioral control and purchase intention are described in many studies. Nguyen et al. (2021) conducted a study to examine the purchase intention of organic meat. The finding indicates that attitude has a positive effect on purchase intention toward organic meat. Minh and Nhan (2020) investigate determinants of consumers' purchasing intention toward organic food in HCM City, Vietnam. The results show that customer attitude, subjective norms, and perceived behavioral control have significant influences on purchasing intention. Moreover, in the study of Pham et al. (2018), the authors investigated young customers' purchase behavior toward organic food. According to the finding, there is a positive effect of attitude on purchase intention. According to the above literature review, to answer the research question 1 and to conduct the research objective 1, the hypotheses are as follows:

H1: Attitude positively affects purchase intention toward organic food of millennials in Vietnam.

H2: Subjective norms positively affect purchase intention toward organic food of millennials in Vietnam.

H3: Perceived behavioral control positively affects purchase intention toward organic food of millennials in Vietnam.

2.3.2 Income

As is the case with organic food, a customer's income is a crucial component in determining their purchasing decisions. In the theory of planned behavior, the effect of income has been demonstrated by several experiments. Previous studies presented the relationship between income and purchase intention. Regarding organic food research, income has a direct positive effect on purchase intention (Kuran & Mihic, 2014; Omar, Nazri, Osman, & Ahmad, 2016; Trinh, 2021). In particular, a study that was conducted by Kuran and Mihic (2014) used the TPB to investigate organic food purchasing behavior in the Republic of Croatia. The findings of the investigation revealed that household income is found to be a significant factor that affects the intention to purchase organic food. According to research carried out in Vietnam (Trinh, 2021), it was discovered that the level of income possessed by customers has a strong and beneficial impact on their decisions about the purchase of organic agricultural goods. Moreover, the organic products research of Omar et al. (2016) investigated effect of a relationship between demographic factors and purchase intention in Malaysia. According to the finding, the author showed the positive effect of income on purchase intention.

Additionally, income is studied in descriptive analysis. The finding in the study of Oliveira Martins et al. (2021) shows more often buying organic food at higher income more than lower income. Or, consumers with fewer family members and have a higher income, and are price tolerant, are more likely to purchase organic vegetables (Slamet et al., 2016).

The direct effect between income and actual buying behavior (Gundala & Singh, 2021; Hansmann et al., 2020; Singh & Verma, 2017). In particular, income is positively related to organic purchases (Hansmann et al., 2020). Singh and Verma (2017) present the impact of demographic factors, including age, and income, on the buying behavior of consumers. Moreover, there is a study has shown that socio-demographic factors such as age, education, and income were also found to have an impact on actual buying behavior (Gundala & Singh, 2021).

Moreover, the research use income as a control variable control variable (Chen et al., 2014). According to Chen, Lobo, and Rajendran (2014), the use of three theories—the consumer decision-making process, the TPB, and the 'hierarchy of effects' model—to study the drivers of purchase intention regarding organic food in mainland China. This investigation used income as a control variable, and the results showed that income had weak significant to purchase intention.

From the literature review above, it can be seen that when customers are aware of the benefits of organic food, it will increase their intention to buy organic food. Based on the TPB, the association between attitude and purchase intention, subjective norms and purchase intention, perceived behavioral control and purchase intention are not the same for all customers that are millennials in Vietnam. Instead, these relationships will change based on the customer's income. Therefore, it is supposed that an increase in customers' income will increase their intention to purchase organic food based on the theory of planned behavior. In particular, when millennials are aware of the benefits of organic food, an increase in customers' income will increase their positive effects of attitude, subjective norms, and perceived behavioral control that lead to increase their intention to purchase organic food. Hence, according to the above literature review, to answer the research question 2 and to conduct the research objective 2, it is to suppose the hypotheses as follows:

H4: The higher income, the higher positive effect of attitude on purchase intention toward organic food of millennials in Vietnam.

H5: The higher income, the higher positive effect of subjective norms on purchase intention toward organic food of millennials in Vietnam.

H6: The higher income, the higher positive effect of perceived behavioral control on purchase intention toward organic food of millennials in Vietnam.

2.3.3 Environmental concern

Based on the TPB, there are many studies showing that environmental concern has positive effects on attitude, subjective norms, perceived behavioral control, and purchase involvement. In particular, with an extended TPB model, in the area of green product consumption, Maichum et al. (2016) conducted research on Thai customers' purchase intention. According to the findings, there is significant effect of environmental concern on attitude, perceived behavioral control, and purchase intention. Another study by Yadav and Pathak (2016), also in the field of green product consumption, investigated the purchase intention of young customers toward green products in India. Findings suggest that TPB can be effective in predicting young consumers' purchasing intention for green products. The results show that attitude, and purchase intention are positively affected by environmental concern. One prominent study in green product consumption based on the theory of planned behavior is the study of Paul et al. (2016), this study predicted green product consumption. According to the result of this study, environmental concern positively affects attitude, subjective norms, perceived behavioral control, and purchase intention.

In the field of organic food, many previous studies show the positive effects of environmental concern on attitude, subjective norms, perceived behavioral control, and purchase intention based on the theory of planned behavior. Ishaq et al. (2021) investigated people's motives in Italy and Pakistan regarding organic food purchasing. Positive effects of environmental concern on attitude, subjective norms, and perceived behavioral control are demonstrated in findings of this

study. Studies by Imani et al., (2021), Nguyen et al. (2021), Pham et al. (2018) show the positive effect of environmental concern on attitude toward organic food purchasing intention. Imani et al. (2021) show that environmental concern has positive effects on attitude toward purchasing intention of organic food. Moreover, Nguyen et al. (2021) and Pham et al. (2018) present results for the positive effect of environmental concern on attitude in Vietnam. In particular, regarding organic food intention to purchase, Nguyen et al. (2021) investigated Ho Chi Minh City, Vietnam while Pham et al. (2018) evaluated the purchase behavior of young consumers in Vietnam.

Moreover, previous studies show the positive effect of environmental concern on purchase intention toward organic food based on the TPB. The research conducted by Asif et al. (2018) demonstrates direct effect of environmental concern on the purchase intention of consumers regarding organic food. According to the research findings by Nguyen and Truong (2021), environmental concern has a direct influence on a consumer's intention to purchase organic food in Vietnam. Environmental concern not only effects directly to attitude, subjective norms, perceived behavioral control but also mediates a relationship between attitude and purchase intention based on the TPB. Ahmed et al. (2021) examined young customers' organic food purchase intention using the theory of planned behavior. The findings of this research illustrate that environmental concern not only effects directly to attitude but also acts as a mediator in the interaction between attitude toward consumption and purchase intention for organic food in China.

From the literature of previous studies above, engagement in environmentally friendly behavior, including organic food consumption, is more likely to happen to consumers with greater environmental concern. Previous studies show the positive effect between environmental concern and attitude, subjective norms, perceived behavioral control. It can be seen that when people are aware of environmental concern, their attitude toward the behavior of intention of buying organic food will increase. Moreover, their subjective norms, perceived behavioral control toward organic food purchasing intention will increase. Moreover, environmental concern has a positive effect on purchase intention. This illustrates that when the increase of environmental concern, people is more likely to rise the intention to purchase organic food. The association between attitude and purchase intention, subjective norms and purchase intention, perceived behavioral control and purchase intention are not the same for all customers that are millennials. Instead, these relationships will change based on the environmental concern of millennial customers. Therefore, it is supposed that a rise in customers' environmental concern will rise their intention to purchase organic food based on the theory of planned behavior. In particular, when millennials are aware of the benefits of organic food, an increase in customers' environmental concern will increase their positive effects of attitude, subjective norms, perceived behavioral control that lead to increase their intention to

purchase organic food. Therefore, according to the above literature review, to answer the research question 3 and to conduct the research objective 3, it is to suppose the hypotheses as follows:

H7: The higher environmental concern, the higher positive effect of attitude on purchase intention toward organic food of millennials in Vietnam.

H8: The higher environmental concern, the higher positive effect of subjective norms on purchase intention toward organic food of millennials in Vietnam.

H9: The higher environmental concern, the higher positive effect of perceived behavioral control on purchase intention toward organic food of millennials in Vietnam.

This study supposed that the rise in income and environmental concern will lead to the increase positive effect of the relationship between attitude and purchase intention toward organic food. Thus, to answer the research question 4 and to conduct the research objective 4, the hypothesis is as follows:

H10: There is a three-way interactive effect of income, environmental concern, attitude on purchase intention toward organic food of millennials in Vietnam.

2.4 Hypotheses and model

2.4.1 Study model

Proposed model 1 for this thesis is illustrating in the following figure:

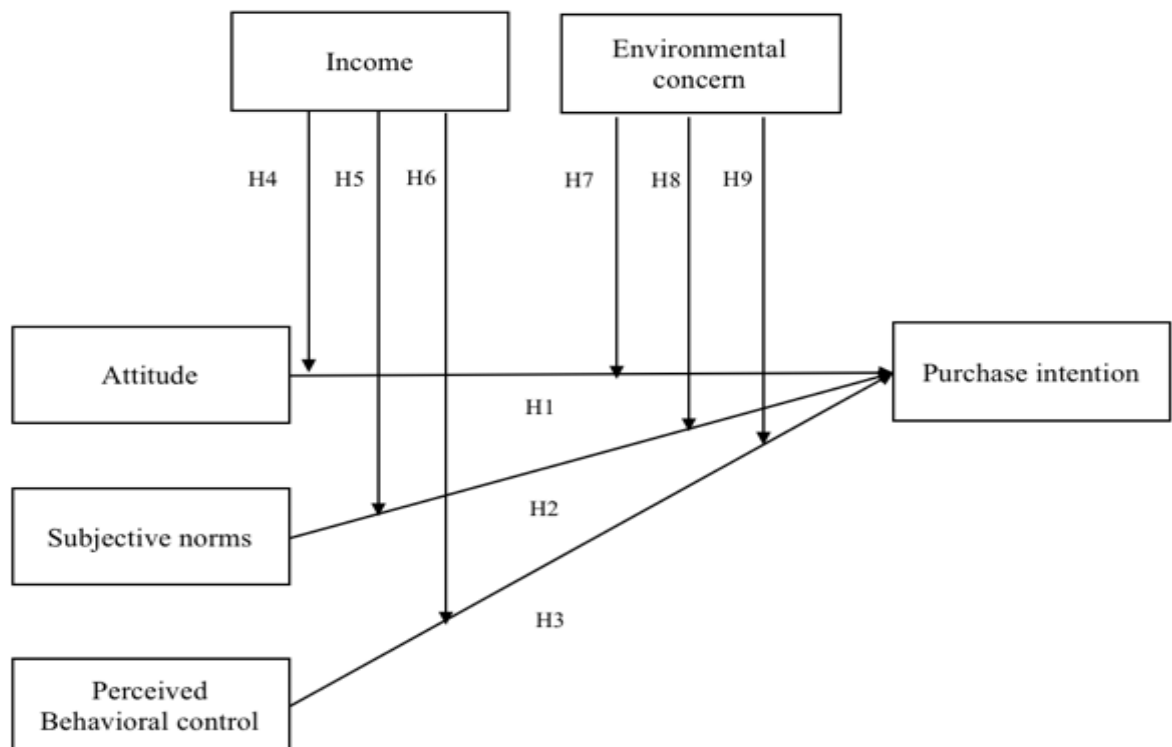


Fig. 2.1: Proposed model 1

Source: Author

Based on the theory of planned behaviour (TPB), this thesis uses 4 constructs of the TPB named: attitude, subjective norms, perceived behavior control and purchase intention. Based on this, three hypotheses (H1, H2, H3) are illustrated in the figure 3.1. The two constructs of income and environmental concern are developed from the literature review to add to the theory of planned behavior to test the moderation effects. In particular, the moderation effects of income on the relationship between attitude and purchase intention, between subjective norms and purchase intention, between perceived behavior control and purchase intention are described. Thus, the three hypotheses (H4, H5, H6) are presented in figure 3.1. Similarity, the figure 3.1 also presented the moderation effects of environmental concern on the relationship between attitude and purchase intention, between subjective norms and purchase intention, between perceived behavior control and purchase intention (H7, H8, H9)

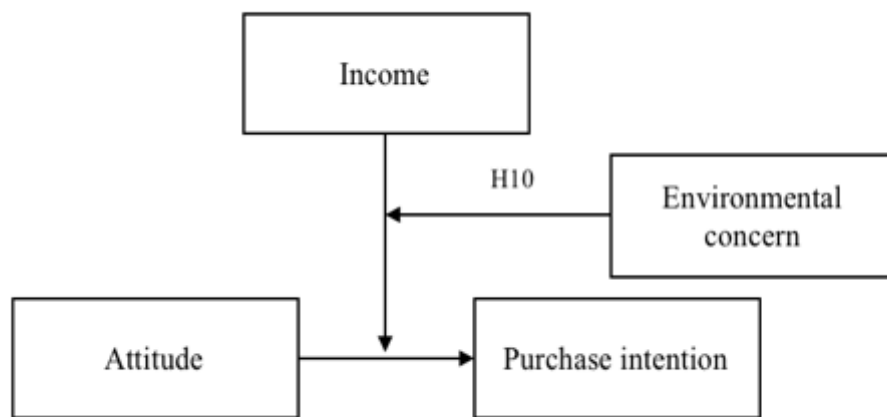


Fig. 2.2: Proposed model 2

Source: Author

The proposed model 2 is presented in figure 3.2. The figure 3.2 illustrates the three-way interactive effect of income, environmental concern, attitude on purchase intention. Thus, the hypothesis H10 is presented in the figure 3.2.

2.4.2 Hypotheses for this thesis

From the literature review, the summary of hypotheses for this thesis are presented as follows:

H1: Attitude positively affects purchase intention toward organic food of millennials in Vietnam.

H2: Subjective norms positively affect purchase intention toward organic food of millennials in Vietnam.

H3: Perceived behavioral control positively affects purchase intention toward organic food of millennials in Vietnam.

H4: The higher income, the higher positive effect of attitude on purchase intention toward organic food of millennials in Vietnam.

H5: The higher income, the higher positive effect of subjective norms on purchase intention toward organic food of millennials in Vietnam.

H6: The higher income, the higher positive effect of perceived behavioral control on purchase intention toward organic food of millennials in Vietnam.

H7: The higher environmental concern, the higher positive effect of attitude on purchase intention toward organic food of millennials in Vietnam.

H8: The higher environmental concern, the higher positive effect of subjective norms on purchase intention toward organic food of millennials in Vietnam.

H9: The higher environmental concern, the higher positive effect of perceived behavioral control on purchase intention toward organic food of millennials in Vietnam.

H10: There is a three-way interactive effect of income, environmental concern, attitude on purchase intention toward organic food of millennials in Vietnam.

3. METHODOLOGY

3.1 Research design

This thesis uses positivism paradigms for the investigation. Positivism relies on the deductive method to verify a priori hypotheses that are often stated quantitatively, where functional relationships can be derived between causal and explanatory factors (independent variables) and outcomes (dependent variables) (Park, Konge, & Artino, 2020).

The research procedure can be divided into five stages. In stage 1, after the research problems, research gaps, research questions and research objectives identification, a literature review of based theory and previous study will be illustrated. The literature review supports building research model and hypotheses development. Then, in stage 2, a draft questionnaire is developed for a pilot study. The reliability test will be applied for the pilot test. After that, in stage 3, a full questionnaire is established for data collection. In the 4th stage, the data is analyzed for measurement model assessment, structural model assessment, and moderation relationships. The last stage is results, discussions and conclusion.

3.2 Data collection method

3.2.1 Sampling

The population is Vietnamese millennials (born from 1980 to 2000) who have intention to purchase organic food. The data were collected from the three largest cities in Vietnam: Ho Chi Minh City, Da Nang City, and Hanoi City. The three most populous cities were chosen for this study not just for the sheer number of people living there, but also for the abundance of healthy food options available in their organic markets. In major urban centers, consumers have easy access to a

wide variety of eco-friendly goods, including organic produce. In addition, both the availability of organic food and the tendency toward its use are substantially higher than in rural areas and smaller cities.

This research is empirical quantitative-based research. To investigate this study, a survey questionnaire was selected as a research instrument. Specifically, the cluster and snowball sampling technique are applied to collect data from respondents. At the first step, the population is divided into three groups based on the three main geographical regions of Vietnam: Northern, Central and Southern Vietnam. Then, the number of respondents will be selected based on the percentage of that group representing the population. The data is collected from April to August 2022 by the online form. Table 3.1 shows the percentage of population of three big cities and the sample.

Table 3.1: Share of population in three main cities, regions in Vietnam and sample

City	Sample	% Population Region (Vietnam)	% Population City (Vietnam)
Ho Chi Minh- Southern Vietnam	150 (39.1%)	39%	9.1 %
Da Nang- Central Vietnam	103 (26.8%)	27%	1.2%
Ha Noi- Northern Vietnam	131 (34.1%)	34%	8.6%
Total	384 (100%)	100%	19%

Source: General Statistics Office of Vietnam

3.2.2 Sample size

The online platform was used to collect data randomly from millennials with the sample framework. With the cluster and snowball sampling technique, the data was collected from appropriate millennials. The sample size is identified with a standard of 95 percent confidence level and error of 5 percent. According to Krejcie and Morgan (1970) and Hair et al. (2010), to identify the sample size, the sample size (n) should be between 300 and 384 respondents when the population is higher than one million or/and the population is unknown.

3.2.3 Questionnaire design

The original version of the questionnaire was written in English. Then, for the Vietnamese respondents, it was translated into Vietnamese. There are two main parts in the questionnaire named demographic part and the construct part. All items from the construct part are applied the scale of 5-point Likert for response options. The scale is 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), 5 (strongly agree)

3.3 Measurement scale of variables

3.3.1 Attitude (ATT)

Attitude is constructed from six items adopted from Asif et al. (2018), and Yadav and Pathak (2016a). These items for measuring attitude are: “I think that organic food purchasing is interesting; I think that organic food purchasing is a good idea; I think that organic food purchasing is important; I think that organic food purchasing is beneficial; I think that organic food purchasing is wise choice; I think that organic food purchasing is favorable”. These six items of attitude variable are coded ATT1, ATT2, ATT3, ATT4, ATT5, ATT6.

3.3.2 Subjective norms (SN)

Scales for evaluating subjective norms were adopted from Asif et al. (2018) and Yadav and Pathak (2016a). The following statements serve as measurement of subjective norms: “My family thinks that I should buy organic food; Most people I value would buy organic food; Most people important to me think that I should buy organic food; My close friends think that I should buy organic food”. They are coded SN1, SN2, SN3, and SN4.

3.3.3 Perceived behavioral control (PBC)

Perceived behavioral control scales were adopted from Asif et al. (2018) and Yadav and Pathak (2016a). There is a correlation between the extent to which people believe they can control their actions and the veracity of each of the following statements: “If I wanted to, I could buy organic food; I think it is easy for me to buy organic food; It is mostly up to me whether or not to buy organic food”. Three items are labeled PBC1, PBC2, and PBC3.

3.3.4 Income (IC)

The monthly income of people who living in Ho Chi Minh City is 8.9 million VND and 8.7 million VND in Ha Noi City (Tuoi Tre, 2022). In Da Nang City the monthly income of people is 5.23 million VND (Mai Que, 2022). The people who have experience working will have the monthly income range from 10 million VND to higher 40 million VND. The income will be depended on the number of years of working experience, city of living and education. For this thesis income variable is divided into 5 gourps: less than 10 million VND, from 10 to 20 million VND, from 20 to 30 million VND, from 30 to 40 million VND, and more than 40 million VND. They are coded IC1, IC2, IC3, IC4, IC5.

3.3.5 Environmental concern (EC)

To measure environmental concern, four items were adopted from Lee (2008), H. V. Nguyen et al. (2021), and Pham et al. (2018). These items were intended to capture how respondents’ concern about Vietnam’s environment and also how they were emotionally involved in environmental preservation. Environmental concern is constructed of four items: “Vietnam’s environment is my major

concern; I am worried about the worsening of the quality of Vietnam’s environment; I am emotionally involved in environmental protection issues in Vietnam; I often think about how the environmental quality in Vietnam can be improved”. They are coded EC1, EC2, EC3, and EC4.

3.3.6 Purchase intention (PI)

Four items measuring purchase intention were adopted using measurement scale from Asif et al. (2018) and Yadav and Pathak (2016a). These items were designed to capture respondents’ intention to purchase organic food: “I am willing to purchase organic food while shopping; I intend to purchase organic food; I will consider purchasing organic food; I will make an effort to buy organic food in the near future”. They are labelled PI1, PI2, PI3, and PI4.

The research methodology can be summarized in the following table:

Table 3.2: Summary of research methodology

Paradigm	Positivism	
Method	Quantitative: Pilot study (n=50); Full study (n=384)	
Sampling technique	Cluster and snowball sampling	
Sample objects	Millennials: Age from 22 to 42 (from 1980 to 2000)	
Questionnaire	Demographics and Constructs (Likert scale 1-5)	
Sample size	$\frac{z^2(p.q)}{E^2}$	The sample size for this study, with 95% confidence, error 5 %, is 384
Data analysis tool	SPSS version 23, and Smart-PLS 3.3	
Data analysis	<ul style="list-style-type: none"> - Measurement model assessment - Structural model assessment - Moderation analysis 	

Source: Author

4. RESULTS

4.1 Descriptive statistic

The data collected from online is 384 samples. This is how the men and women compare: 51.8 percent of the people who answered the survey are men, and 48.2 percent are women. The survey shows the balance between men and women. The millennials range in age from 22 to 42 years old. In which most respondents are between the ages of 29 and 35, with 43% (165 respondents). 41.1 percent of respondents (158 people) are between the ages of 36 and 42, and 15.9 percent are between the ages of 22 and 28. (61 respondents). Marital statuses are married shows the most percentage (71.9%), followed by single (27.3 percent with 105 respondents). Most of the respondents who answered had families with 4–5

members (38.8% or 149 respondents). The percentage of respondents who has families with 2–3 members is 38.0% (146 respondents), and then families with higher 5 members is 23.2% (89 respondents). Regarding employment status, the most common jobs are having a full-time job (77.6%, 298 respondents) and business (13.3%, 51 respondents). Followed by part-time job (6.8 percent with 26 respondents), housewife (1.8 percent with 7 respondents), student (0.5 percent with 2 respondents). The majority of respondents that have an education with bachelor degree is 77.3 percent (with 297 respondents). Followed by the percentage of respondents with postgraduate degree (17.4 percent with 67 respondents), and diploma (5.2 percent with 20 respondents). Regarding monthly income, respondents with a monthly income from 30 to 40 million VND account for the most (37.5 percent with 144 respondents), followed by monthly income from 20 to 30 million VND (28.4 percent with 109 respondents), and respondents with monthly income more than 40 million VND (16.9 percent with 65 respondents). The respondents have a monthly income from 10 to 20 million VND (11.2 percent with 43 respondents), and less than 10 million (6.0 percent with 23 respondents). In terms of city of living, the respondents from Ho Chi Minh City are 150 respondents (with 39.1 percent), followed by the respondents from Ha Noi (34.1 percent with 131 respondents), and Da Nang City (26.8 percent with 103 respondents).

4.2 Assessment of measurement model

4.2.1 Internal consistency reliability

Cronbach's alpha is an index of internal consistency used to assess the consistency of results when there is some degree of autocorrelation among the variables of interest. The significance of all variables is taken into account by Cronbach's alpha. Hair et al. (2017) states that when assessing the reliability of a research scale, both the composite reliability (CR) and the total variance extracted AVE (average variance extracted) of the variables in the observed variable are considered. For a scale's reliability to be considered adequate, it needs to have an AVE of at least 0.5 and a CR coefficient of at least 0.7 (Hulland, 1999). The results of the overall reliability of the scale are presented in Table 4.1.

Table 4.1: Internal consistency reliability for this study

Construct	Cronbach's Alpha	Rho_A	Composite Reliability	Average Variance Extracted (AVE)
ATT	0.907	0.910	0.928	0.683
SN	0.865	0.881	0.907	0.710
PBC	0.813	0.818	0.889	0.727
EC	0.731	0.740	0.830	0.550
PI	0.855	0.855	0.902	0.696

Source: The results from SmartPLS

The findings demonstrate that across all constructs, there is a high value for the composite reliability (CR), with values ranging from 0.830 to 0.928. Cronbach's alpha is found in the range of 0.731 to 0.907, while the RhoA can be found in the interval of 0.740 to 0.910. This finding demonstrates the reliability of the scale is high.

4.2.2 Convergent validity

The observed variable factor loadings and the average extracted variance are used to calculate a convergence value. Research by Hair et al. describes a systematic procedure for analyzing data that conforms to the steps of reflective model analysis (Hair et al., 2017). Any observable variables with an outer loading of less than 0.4 will be eliminated, and any with a loading factor of between 0.4 and 0.7 may also be eliminated if doing so improves the statistical criteria to the required level (Hair et al., 2017). All of the observed variables had an factor loading greater than 0.4, ranging from 0.696 to 0.877. Therefore, it can be argued that there is convergence among the values of the observed variables in the elements of the study model.

4.2.3 Discriminant validity

To assess discriminant validity, this study uses Fornell-Lacker criterion (Fornell & Larcker, 1981). This method compares the square root of the average variance extracted (AVE) with the correlation of latent constructs (Hair et al., 2017). Accordingly, the AVE square root for each latent construct ought to be larger than the value of the correlations among the different latent constructs.

Table 4.2: Discriminant validity (Fornell - Larcker criterion)

	ATT	EC	PBC	PI	SN
ATT	0.827				
EC	0.068	0.847			
PBC	0.059	0.221	0.613		
PI	0.405	0.073	0.233	0.842	
SN	0.071	0.509	0.218	0.061	0.839

Source: The results from SmartPLS

Table 4.2 shows that all square roots of AVE with coefficients greater than 0.5 (from 0.613 to 0.847) meet the criteria established by Fornell and Larcker. When comparing components in the same column, the square root of AVE always has a greater value than the correlation coefficient. Since this is the case, it follows that all factors have discriminant validity.

4.3 Structural model assessment

4.3.1 Path coefficients

The PLS algorithm looked at how independent and dependent variables were related to each other. The PLS bootstrapping function was used to test the significance level and t-statistics for all paths. Based on the results of the t-tests, the level of significance of each relationship was found. According to Hair et al. (2017), bootstrapping is an iterative sampling technique to estimate standard error without forwarding distributional assumptions. The bootstrap results approximate the normality of the data. It is used to calculate the significance of the t-statistic related to the path coefficients.

The path coefficient in Table 4.3 show supported and not supported hypotheses. The study showed that the supported hypotheses had path coefficient values (β) ranging from 0.115 to 0.289, was significant at the 0.05 level, and pointed in the positive direction.

Table 4.3: Hypotheses testing

Hy	Path	Original Sample (O)	Sample Mean (M)	Standard Deviation	T Statistics	P Values	Result
H1	ATT → PI	0.289	0.301	0.056	5.119	<0.001	Supported
H2	SN → PI	0.153	0.156	0.042	3.641	<0.001	Supported
H3	PBC → PI	0.149	0.146	0.048	3.081	0.002	Supported
H4	ATT*IC→PI	0.145	0.14	0.063	2.317	0.021	Supported
H5	SN*IC→ PI	0.135	0.134	0.045	2.968	0.003	Supported
H6	PBC*IC→ PI	-0.108	-0.1	0.056	1.927	0.055	Not Supported
H7	ATT*EC →PI	0.142	0.136	0.056	2.546	0.011	Supported
H8	SN *EC → PI	0.156	0.151	0.048	3.271	0.001	Supported
H9	PBC* EC→ PI	0.115	0.111	0.046	2.521	0.012	Supported

Source: The results from SmartPLS

The structural model is applied to test research hypotheses, with the value $t > 1.96$, the test is statistically significant at the 5% level. The results of the table 5.5 of path coefficients and T-values show that with nine hypotheses being tested, eight hypotheses are supported at 5% significance level (because p value < 0.05). Hypothesis H6: Income positively affects the relationship between perceived behavioral control and purchase intention is not supported because the p -value > 0.05 (p -value=0.055).

4.3.2 Moderation effect of income

The results from table 4.3 show the interaction of attitude and income has positive effect on purchase intention. With ($\beta=0.145, t=2.317, p$ value= $0.021 < 0.05$), the result supports the hypothesis H4, which presents that income plays a role as a moderator for the relationship between attitude and purchase intention (see Fig 4.1). Similarly, the interaction of subjective norms and income also has a statistically significant effect on purchase intention ($\beta=0.135, t=2.968, p$ value= $0.003 < 0.01$). The result supports the hypothesis H5 (see Fig 4.1)

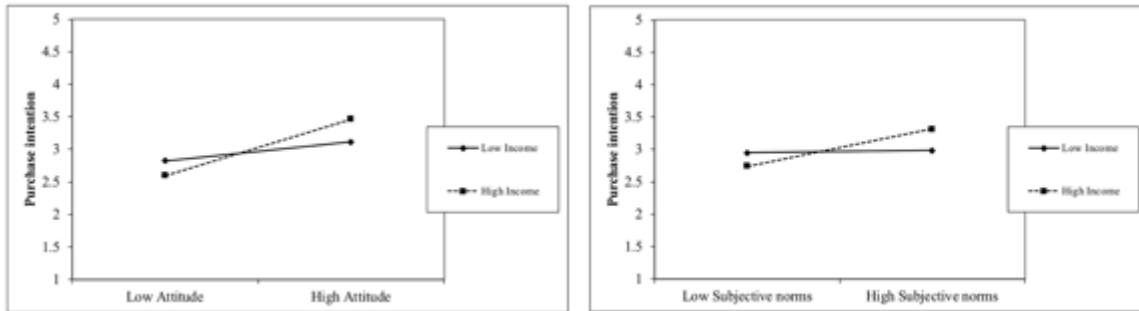
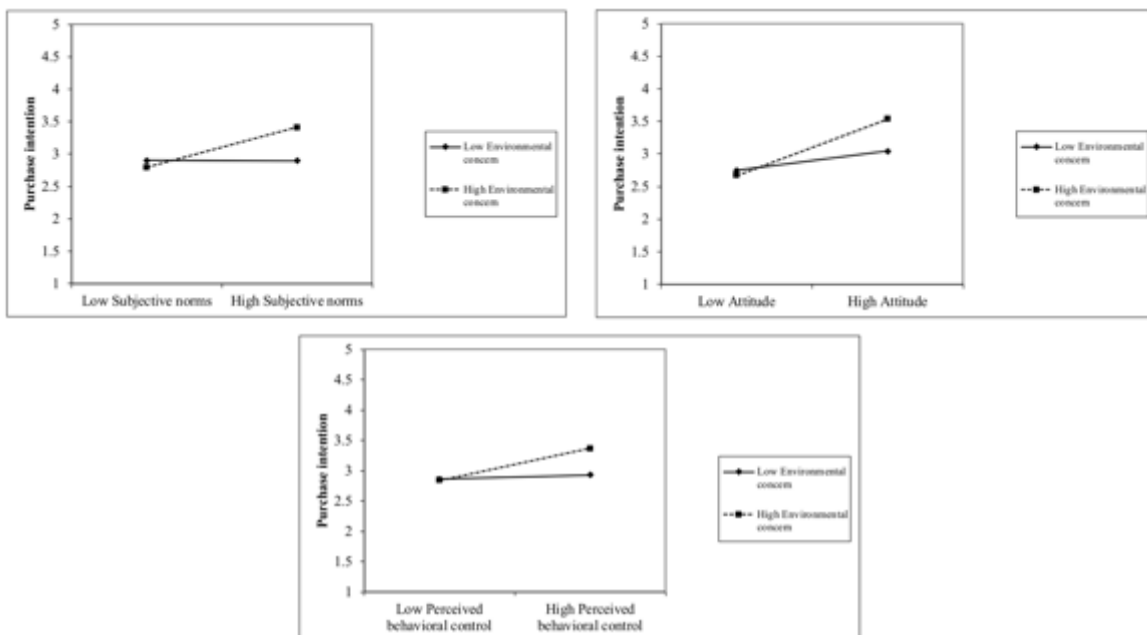


Fig. 4.1: Moderation effects of income

4.3.3 Moderation effect of environmental concern

The result from table 5.6 show the interaction of attitude and environmental concern has positive effect on purchase intention. With ($\beta=0.142, t=2.546, p$ value= $0.011 < 0.05$), the result supports the hypothesis H7, which presents that



environmental concern plays a role as a moderator for the relationship between attitude and purchase intention (see Fig 4.2). Similarly, the interaction of subjective norms and environmental concern also has a statistically significant effect on purchase intention ($\beta=0.156, t=3.271, p$ value= $0.001 < 0.01$). The result supports the hypothesis H8 (see Fig 4.2). In addition, the interaction of perceived behavioral control and environmental concern also has a statistically significant effect on purchase intention ($\beta=0.115, t=2.521, p$ value= $0.012 < 0.05$). The result supports the hypothesis H8 (see Fig 4.2).

Fig. 4.2: Moderation effects of environmental concern

4.3.4 Three-way interactive effect

Macro process in SPSS is applied for three-way interactive effect analysis. The moderation model is model 3 of Andrew (2022). The three-way interactive effect was used to clarify the relationship between environmental concern, income, attitude and purchase intention based on the theory of planned behavior. With $R^2 = 46.16\%$ ($F = 16.4284$, p value < 0.05) and ΔR^2 of 2.01% (p value < 0.05), the model is significant. Moreover, the three-way interactive effect is significant and positive. Thus, the **hypothesis H10** is accepted.

Table 4.4: Conditional effects on the value of the moderators

Moderators		The focal predictors		
Income	EC	Effects (b)	P value	Conclusion
< 10 million VND	Low	-0.7856	0.0000	ATT predicts PI
	Average	-0.1147	0.3366	ATT does not predict PI
	High	0.3885	0.0244	ATT predicts PI
10-20 million VND	Low	-0.0104	0.9418	ATT does not predict PI
	Average	0.4732	0.0055	ATT predicts PI
	High	0.8358	0.0014	ATT predicts PI
20-30 million VND	Low	-0.0088	0.9379	ATT does not predict PI
	Average	0.4482	0.0000	ATT predicts PI
	High	0.7909	0.0000	ATT predicts PI
30-40 million VND	Low	0.2985	0.0003	ATT predicts PI
	Average	0.5362	0.0000	ATT predicts PI
	High	0.7145	0.0000	ATT predicts PI
>40 million VND	Low	0.5469	0.0007	ATT predicts PI
	Average	0.7061	0.0000	ATT predicts PI
	High	0.8255	0.0000	ATT predicts PI

Source: The results from SPSS

As illustrated above, there is the interaction of attitude, income, environmental concern on purchase intention. However, different conditions lead to different effects. To sum up, the three strongest influences of attitude on purchase intention toward organic food are the condition of the high value of environmental concern and income level from 10 million to 20 million VND (the strongest influence); income level of more than 40 million VND (the second strongest influence); income level from 20 to 30 million VND (the third strongest influence). Under the condition of income of less than 30 million VND and low value of environmental concern, attitude did not predict purchase intention (see Table 4.4)

Table 4.5: A summary of tested hypotheses

H1	Attitude positively affects purchase intention toward organic food of millennials in Vietnam.	Supported

H2	Subjective norms positively affect purchase intention toward organic food of millennials in Vietnam.	Supported
H3	Perceived behavioral control positively affects purchase intention toward organic food of millennials in Vietnam.	Supported
H4	The higher income, the higher positive effect of attitude on purchase intention toward organic food of millennials in Vietnam.	Supported
H5	The higher income, the higher positive effect of subjective norms on purchase intention toward organic food of millennials in Vietnam.	Supported
H6	The higher income, the higher positive effect of perceived behavioral control on purchase intention toward organic food of millennials in Vietnam.	Not Supported
H7	The higher environmental concern, the higher positive effect of attitude on purchase intention toward organic food of millennials in Vietnam.	Supported
H8	The higher environmental concern, the higher positive effect of subjective norms on purchase intention toward organic food of millennials in Vietnam.	Supported
H9	The higher environmental concern, the higher positive effect of perceived behavioral control on purchase intention toward organic food of millennials in Vietnam.	Supported
H10	There is a three-way interactive effect of income, environmental concern, attitude on purchase intention toward organic food of millennials in Vietnam.	Supported

Source: Author

5. CONCLUSION

5.1.1 Discussion

Research Question 1: Results from this study supported the theory of planned behavior. Purchase intention of millennials in Vietnam who are interested in organic food are influenced by their attitude, subjective norms, and perceived behavioral control. The results of the study support the theory of planned behavior as an appropriate theory for forecasting millennials' intention with respect to the purchasing of organic food in Vietnam. Previous study shows the confirmation that attitude, subjective norms, and behavioral control toward organic food purchasing intention of the millennials in Vietnam are positive. The results is consistent with many researches of Arvola et al. (2008), Chen and Lobo (2012), Paul and Rana (2012), Chekima (2018), Xu et al. (2020), and in Vietnam (Pham et al., 2018; Nguyen et al., 2019; Minh & Nhan, 2020). Furthermore, the millennial generation is the most important group in Vietnam's workforce and the main consumer group to target. Because of this, they make a big difference in the

market. Millennials and organic are likely to go together because millennials are an active generation that stays up-to-date with information and has a wide range of knowledge. Before using a product, do some research on it and be flexible to the new. So, organic food is one of the most important choices that Vietnamese millennials can make to make sure they eat healthy meals every day.

Research Question 2: This thesis illustrates the moderation effect of income on the relationship between attitude and purchase intention, subjective norms and purchase intention of millennials toward organic food in Vietnam based on the theory of planned behavior. This means that hypotheses H4 and H5 are supported. The association between attitude and purchase intention, subjective norms and purchase intention are not the same for all customers that are millennials. Instead, these relationships will change based on the income of millennial customers. The findings show that an increase in customers' income will increase the positive effect of the relationship between attitude and purchase intention, between subjective norms and purchase intention. Hypothesis H6 is not supported. There is not moderation effect of income on the relationship between perceived behavioral control and purchase intention. The finding shows that an increase in income will not affect the relationship between perceived behavioral control and purchase intention. According to Ajzen (1985), internal factors (individual differences, information, skills, and abilities, power of will) and external factors (time and opportunity, dependence on others) affect the perceived behavioral control. In this thesis, when income increases, the internal factors and external factors such as availability of organic food, location to buy organic food, ability to pay for organic food will not be affected. Thus, the relationship between perceived behavioral control and purchase intention is not affected when income increases.

Research Question 3: This thesis illustrates the moderation effect of environment concern on the relationship between attitude and purchase intention, subjective norms and purchase intention, perceived behavioral control and purchase intention of millennials toward organic food in Vietnam based on the TPB. This means that hypotheses H7, H8, and H9 are supported. The association between attitude and purchase intention, subjective norms, perceived behavioral control and purchase intention are not the same for all customers that are millennials. Instead, these relationships will change based on the environmental concern of millennial customers. The findings show that an increase in customers' environmental concern will increase the positive effect of the relationship between attitude and purchase intention, between subjective norms and purchase intention, between perceived behavioral control and purchase intention. From this result, it can be seen that Vietnamese millennials concerned about the environment and it will affect the purchase intention. To sum up, when the increase in environmental concern, the positive effects of attitude to purchase

intention, subjective norms to purchase intention, perceived behavioral control will increase.

Research Question 4: This thesis illustrates the three-way interactive effect of income, environmental concern, and attitude on purchase intention toward organic food of millennials in Vietnam based on the theory of planned behavior. However, different conditions lead to different effects. The interactive effects are different with different condition of income and environmental concern. With the condition of income less than 10 million VND and environmental concern is in low value, attitude has a negative effect on purchase intention. When millennial customers have income of less than 10 million and they don't concern much about the environment, they don't have intention to purchase organic food. With condition of income (less than 10 million, from 10 to 20 million VND, from 20 to 30 million VND) and the condition of environmental concern of low value, there is no three-way interactive effect of attitude, income, environmental concern on purchase intention.

With the income from 10 million to 30 million VND, and the environmental concern at average and high value, there is a three-way interactive effect of income, environmental concern, attitude on purchase intention. The interesting finding is that, under the condition of income from 10 to 20 million VND and environmental concern at high value, attitude has the strongest influence on purchase intention. This means when the millennial customer has income from 10 to 20 million VND, and they concern very much about the environment, this significantly encourages them to have intention to purchase organic food.

With the income more than 30 million VND, there is the three-way interactive effect of income, environmental concern, attitude on purchase intention under all levels of environmental concern (low, average, and high). Under the condition of high value of environmental concern, attitude has strong effects on purchase intention toward organic food. This means that when the income of millennial customers increases and they concern very much about the environment, this condition significantly motivates them to purchase organic food in Vietnam.

The three strongest influences of attitude on purchase intention toward organic food are the condition of the high value of environmental concern and income level from 10 million to 20 million VND (the strongest influence); income level of more than 40 million VND (the second strongest influence); income level from 20 to 30 million VND (the third strongest influence). Under the condition of income of less than 30 million VND and low value of environmental concern, attitude did not predict purchase intention. These findings support significantly to the practical contributions.

5.1.2 Theoretical contributions

For the theoretical contribution, firstly, this thesis proved the application of TPB in the context of Vietnam. This theory is appropriate to investigate the

intention to purchase organic food for millennials in Vietnam. The positive effects of attitude, subjective norms, perceived behavioral control on purchase intention regarding organic food has been proved in many researches. And the findings of this thesis show the same results for the context of Vietnamese millennials.

Moreover, this study gives the updating of the moderation effects of income. The findings illustrate the moderation of income on the relationships between attitude and purchase intention, between subjective norms and purchase intention. However, the interesting is that there is no moderation effect of income on the relationship between perceived behavioral control and purchase intention. The finding shows that an increase in income will not affect the relationship between perceived behavioral control and purchase intention.

Additionally, this thesis updates the moderation of environmental concern with the application of the theory of planned behavior. The presented findings show the moderation of environmental concern on the relationships between attitude and purchase intention, between subjective norms and purchase intention, between perceived behavioral control and purchase intention regarding organic food.

Last but not least, the three-way interactive effect of income, environmental concern, and attitude on purchase intention toward organic food of millennials in Vietnam based on the theory of planned behavior will enrich the literature. The interesting is that with the condition of income and environmental concern at a very low value, attitude has a negative effect on purchase intention. When the income and environmental concern increase, the positive effect of attitude on purchase intention will increase. However, the strongest positive effect of attitude on purchase intention is not at the condition of the highest value of income and environmental concern. The strongest positive effect of attitude on purchase intention is at the condition of middle value of income and high value of environmental concern.

5.1.3 Practical contributions

In practice, the amount of money one makes is a significant factor in determining whether or not they have the intention to purchase organic food. Companies that manufacture organic food goods will understand how millennials' income influences their desire to make a purchase. Companies will have a better understanding of which income ranges will have the most impact on purchasing intention and whether or not there is a difference in the intention of different income groups to purchase organic food goods. The selling pricing strategy for each segment will be decided based on the results of this step. In light of this, the business will devise marketing techniques such as advertising products and finding new means to introduce products to consumers in order to fulfil the objective of achieving a dominant position in the market for millennials. When market research reveals that consumers are becoming more concerned about the environment, a business must have a plan in place to develop products that have the least possible negative effect on the natural environment. In addition, plans to

improve the public's perception of the company, such as corporate social responsibility (CSR), environmental protection (such as waste treatment), and ecological environment protection around the enterprise. In particular, organic food suppliers will pay attention to the group of customers with income from 10 to 30 million VND, especially from 10 to 20 million VND. With a marketing strategy that aims to protect the environment, design environmentally friendly products, the company will gain a lot of benefit in expanding the market with this millennial customer group. A group of customers with an income of 10 to 20 million VND can bring many benefits to the company providing organic food products. The price strategy with the link to the cost management of the companies which want to provide organic food to the market segment of millennials with income from 10 to 20 million VND.

5.1.4 Limitations of the study and future research suggestions

This study only looks at organic food in a certain area, but this investigation could be extended to examine to many countries in Asian for the comparison. Moreover, the second limitation is that this study only investigates organic food. Thus, this model can be used to studied another product.

Practitioners can use this study as a model for future research on a variety of topics, such as eco-friendly products. This model can also be used for a wide range of other food products, such as traditional foods, safe foods, and foods sold in restaurants or grocery stores. For academics, the model can be used to develop and add more personality-related constructs. Moreover, this study will be better if the comparison between Vietnam and another country is investigated. Moreover, the comparison between generations in Vietnam (for example, between Gen Z and millennials) could be the better examination toward organic food purchase intention.

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