EMPIRICAL INVESTIGATION ON THE DETERMINANTS OF
ORGANIC FOOD PURCHASING BEHAVIOR

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ABSTRACT

EMPIRICAL INVESTIGATION ON THE DETERMINANTS OF ORGANIC FOOD PURCHASING BEHAVIOR

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The main motivation of this thesis is to reveal the determinants of organic food purchasing behavior of individuals by improving a psychological model and try to elicit individuals' willingness to pay estimates for each attribute of organic foods in an experimental setting. In the first essay, we aim to reveal the determinants of organic food purchasing behavior within the Theory of Planned Behavior framework, and the basic model is extended by incorporating food safety concern, health consciousness, trust, and organic knowledge as background factors using Structural Equation Modeling. The utility of the extended model is mainly confirmed in understanding individuals' organic food purchasing behavior. The addition of food safety concern, health consciousness, trust, and organic knowledge is proven to improve the predictive power of the model and increase the proportion of explained variance in behavior. In the second essay, we aim to elicit individuals' willingness to pay estimates for the attributes of organic foods

by conducting an experimental approach. The willingness to pay estimates of individuals are compared with using three elicitation methods, namely, a conventional non-hypothetical choice experiment, a non-hypothetical choice experiment with BDM (Becker-DeGroot-Marschak) treatment, and the BDM mechanism in which individuals' reservation prices are elicited. Willingness to pay estimates are calculated by using Multinomial Logit Model and Tobit Model. The findings indicate that the willingness to pay estimates of the conventional non-hypothetical choice experiment and the non-hypothetical choice experiment with BDM treatment do not significantly differ while the BDM mechanism in which individuals' reservation prices are directly elicited differs from those two methods, and gives more truthful estimations.

Keywords: Organic Food, the Theory of Planned Behavior, Structural Equation Modeling, Choice Experiment, BDM Mechanism.

ÖZ

ORGANİK GIDA SATIN ALMA DAVRANIŞININ BELİRLEYİCİLERİ ÜZERİNE AMPİRİK BİR İNCELEME

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Bu tezin temel motivasyonu, bireylerin organik gıda satın alma davranışlarının belirleyicilerini psikolojik bir model geliştirerek ortaya koymak ve bireylerin, organik gıdaların sahip olduğu her bir özellik için ödemeye razı oldukları fiyatı, deneysel bir yaklaşım kullanarak belirlemektir. Birinci bölümde, bireylerin organik gıda satın alma davranışlarının belirleyicilerinin, Planlanmış Davranış Teorisi yaklaşımı kullanılarak ortaya konması amaçlanmaktadır. Daha belirgin bir biçimde, gıda güvenliği endişesi, sağlık bilinci, güven duygusu ve organik bilgi geri plan faktörler olarak modele dahil edilmiş ve temel model, Yapısal Eşitlik Modellemesi kullanılarak genişletilmiştir. Genişletilmiş modelin, bireylerin organik gıda satın alma davranışlarını yordamada oldukça başarılı olduğu doğrulanmaktadır. Modele, gıda güvenliği ile ilgili endişelerin, sağlık bilincinin, güvenin ve organik bilginin eklenmesi, modelin tahmin gücünü ve davranıştaki açıklanan varyans oranını arttırmaktadır. İkinci bölümde, bireylerin, organik

gıdaların sahip olduğu bir takım özellikler için ödemeye razı oldukları fiyatın, deneysel bir yaklaşım kullanılarak belirlenmesi amaçlanmaktadır. Bu doğrultuda, varsayımsal olmayan bir seçim deneyi, BDM (Becker-DeGroot-Marschak) mekanizmasının kullanıldığı bir seçim deneyi ve bireylerin ödemeye razı oldukları fiyatları kendilerinin belirlediği BDM mekanizması olarak tanımlanan, üç yöntem, Çok Terimli Lojit Model ve Tobit Model kullanılarak, karşılaştırılmış ve gıda ürünleri için daha gerçekçi değerlemeler elde edilmeye çalışılmıştır. Çalışmanın bulguları, bireylerin ödemeye razı oldukları fiyatın, geleneksel seçim deneyi ve BDM mekanizmasının kullanıldığı seçim deneyi için önemli bir farklılık göstermediğini ortaya koymaktadır. Fakat bireylerin ödemeye razı oldukları fiyatları, doğrudan kendilerinin belirlediği BDM mekanizmasının, bu iki yöntemden önemli ölçüde farklılık göstererek, daha gerçekçi tahminler ortaya koyduğu görülmektedir.

Anahtar Kelimeler: Organik Gıda, Planlanmış Davranış Teorisi, Yapısal Eşitlik Modeli, Seçim Deneyi, BDM Mekanizması.

To My Family

ACKNOWLEDGMENTS

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

BDM	Becker-DeGroot-Marschak
CE	Choice Experiment
CFA	Confirmatory Factor Analysis
EQS	Equations
EU	European Union
HBM	Health Belief Model
IFOAM	International Foundation of Organic Agriculture Movement
MNL	Multinomial Logit Model
OMEP	Orthogonal Main Effect Plan
ORSEE	Online Recruitment System for Economic Experiments
SEM	Structural Equation Modelling
TPB	Theory of Planned Behavior
TRA	Theory of Reasoned Action
USDA	United States Department of Agriculture
WTP	Willingness to Pay

CHAPTER 1

**FACTORS AFFECTING ORGANIC FOOD PURCHASING
BEHAVIOR: AN EMPIRICAL EVIDENCE FROM TURKEY**

1.1. Introduction

Due to the rapid increase in the world population, a substantial increase has occurred in food need. Conventional methods in agriculture are generally preferred to meet these needs, and thus, it is aimed to obtain more outputs by increasing productivity. Accordingly, the use of pesticides, agricultural chemicals and hormone have started to be common in agricultural production, which increases outputs. However, several studies have proved that these additives threat human health very seriously. Forget et al. (1993) state that specific control programs are adopted to prevent the fatalities caused by the pesticide usage in the Third World countries such as Sri Lanka, Algeria, Malaysia, and Nigeria, which considerably decreases the deaths (Metcalf, 1970; Ault, 1989). Besides, the number of cancer incidences, chronicle, and vascular diseases have risen as a result of the increase in pesticide use in developing countries (Igbedioh, 1991). Further, these chemicals are proven to cause hormonal disorder, learning and understanding deficiencies, and cancer risk in children (More, 2003). In addition to the damages on human health, the use of pesticides, chemicals and synthetic manure in conventional agriculture causes severe losses in underground waters and soil, and these chemicals cause climate change by increasing greenhouse gas emissions in the atmosphere (Mendelsohn and Williams, 2007). Due to the chemicals and pesticides used in conventional agriculture, ecosystem and biodiversity are also severely affected (Fuller et al., 2005; Firbank et al., 2008).

1

When the potential damages of conventional production are considered, food safety notion has become a challenging topic for both the health of organisms and the environment. Accordingly, alternative sustainable agriculture methods have been developed to overcome some possible threats of conventional methods. These sustainable agriculture methods can be enumerated as organic farming, bio-dynamic farming, no-tillage farming, urban and peri-urban farming, natural farming, eco-farming, permaculture, polyculture, integrated farming system, and floating farming practiced in several areas of the world (Fukuoka, 1985; Sachchidananda and Rajiv, 1999).

Among these agricultural methods, organic farming is one of the most popular sustainable agricultural ways adopted in several parts of the world. Organic agriculture implies that a production system protects health of soil, groundwater, ecosystem, and humans. Several institutions have conducted studies related to meaning, purpose, and principles of organic agriculture. According to the definition of European Commission (2017), organic agriculture is a farming method that provides the control of crop rotation, green manure, and compost; bases on mechanical working in soil productivity; rejects or limits the usage of artificial manure, hormone, pesticide, feed supplement, and genetically modified organisms. It is aimed to prevent the pollution of water, soil, and environment, and to provide a positive contribution to the human, animal and plant health by using clean materials and techniques in organic agriculture. Also, organic farming is defined as an agricultural production system which considers the health of humans, animals, plants as a whole without polluting the air, water, and soil during the production process, and aims to maintain a natural balance by rejecting the usage of chemicals and pesticides in any stages including cultivation, harvesting, classification, packing, labeling, storing and transporting. Organic agriculture is a sustainable ecosystem including the notion of fairness, social justice and human relations for all organisms (Ministry of Food, Agriculture and Livestock, Turkey Organic Agriculture Strategic Plan, 2012-2016). Further, instead of using inputs that cause adverse effects, it is based

on ecological processes, biodiversity, and cycles adapted to local conditions. It integrates traditions, innovation, and science to provide benefit to the shared environment, and aims to support fairness and a high-quality life (International Foundation of Organic Agriculture Movements, IFOAM, 2017).

In this direction, IFOAM determines organic agriculture principles to carry one step further of agriculture practices on a global scale. These principles are defined as a set of values that specify how should be approached soil, water, animals, and plants in the production process, and these values determine the relationships of the human being with the environment in which they are interacting. These are defined as principles of health, principles of ecology, principles of fairness and principles of care. Principles of health emphasize that the health of humans cannot be thought separately from the health of the ecosystem since healthy soils generate healthy crops, which affects the health of animals and humans directly. Health is considered as wholeness and integrity of living systems with creating a physical, mental, social, and ecological well-being. Organic agriculture aims to sustain and improve the health of ecosystems and organisms in farming, processing, distribution, or consumption stages by providing high quality and nutritious food. In this context, it keeps away from to use fertilizers, pesticides, animal drugs and food additives that may have unfavorable health impacts. Principles of ecology state an agricultural production system based on living ecological systems and cycles by contributing their sustainability. According to this, there has been a need for a specific production environment based on ecological processes and recycling. In organic agriculture, pastoral and wild harvest systems should conform to the cycles and ecological balances in nature.

Although these cycles have universe qualifications, organic practices should be adapted to local conditions, ecology, culture, and scale due to the site-specific conditions. Inputs should be maintained in low level to improve environmental quality resources by providing recycling of materials and efficient use of resources. Also, the parties who produce, process, trade, and

consume organic products should protect and benefit the shared environment including landscapes, climate, habitats, biodiversity, air, and water. Principles of fairness mean an agricultural production system considering fair relationships regarding the shared environment. This principle adopts an understanding that proposes relationships based on equity, respect, justice, and stewardship of the shared environment, both among people and in their relations to other living beings. This principle points out that the parties (farmers, workers, processors, distributors, traders, and consumers) involved in organic agriculture should behave in a manner that ensures fairness at all levels and to all parties. Also, organic agriculture should be able to present a good quality of life, provide food security, and contribute to a reduction in poverty. In the direction of this principle, future generations should be considered during the use of natural and environmental resources in production and consumption. Principles of care state that organic agriculture should be managed with a responsible and precautionary approach to protect both existing and future generations' health. According to this, practitioners of organic agriculture may aim to improve efficiency and increase productivity by internal and external demands, but they should behave very carefully, and should not make a concession from health principle in an application process. When new approaches and technologies are discussed regarding organic agriculture, scientific data are used to be able to sustain the production healthily and safely. In addition to science, practical experiences, accumulated wisdom, and local information offer valid solutions.

When these principles of organic practices are considered, potential benefits of these practices are salient for humans, other organisms, and the environment. Several studies have been conducted to demonstrate the potential benefits of practicing organic consumption. Consumption of organic food is found to provide a high incidence of vitamin C, magnesium, iron and phosphor (Crinnion, 2010). Also, organic food consumption is confirmed to decrease the risks of non-Hodgkin lymphoma (Bradbury et al., 2014), obesity and cardiovascular diseases (Forman and Silverstein, 2012). Since organic foods

contain a low degree of nitrate, organic food consumption reduces cancer risks related to digestive system (Williams, 2002), and due to the high containing degree of phenol, they are found to have an antioxidant effect (Asami et al., 2003). Since genetically modified organisms are not used during the organic food production, foodborne diseases are less observed.

Also, organic practices are observed to prevent climate change by decreasing the greenhouse gas emission in the atmosphere and contribute the environment protection (United Nations Food and Agriculture Organization, 2017). The practices including crop rotation, intercropping, cover crops, compost and plow consist of the basis of organic farming, protect the animals and plants in soil improve soil formation and structure, and generate a more stable system. At the same time, organic agriculture increases the power of nutrition emission of soil, and this plays an essential role in soil erosion management. Thus, the productivity of soil is considerably enhanced by providing bio-diversity of soil and by decreasing losses of nutrition (United Nations Food and Agriculture Organization, 2017). Pollution of underground water has become an essential problem in areas that are engaged in conventional agricultural practices due to the usage of synthetic manures and pesticides. In contrast with, thanks to the utilization of compost, animal manure and green manure in organic agriculture, bio-diversity is provided and thus, water can be effectively absorbed by the soil, which decreases the pollution risk of underground water (United Nations Food and Agriculture Organization, 2017).

The advantages of organic agriculture practices are known by some of the consumers and they believe that organically grown foods are much safer and healthier than their conventional counterparts (Jolly et al., 1989). Further, as well as health and food-safety concern, environmental awareness leads people to question conventional agriculture methods (Saba and Messina, 2003). Thus, individuals, who are aware of those benefits of organic consumption and the drawbacks of conventional methods, have started to change their dietary habits especially due to the health and food safety concern. They shift their

consumption patterns toward more natural, healthy, and environmentally-friendly products, and they mostly prefer to buy the foods or products from places organic farms or shops where they can believe much healthier. Therefore, this study aims to take a closer look at the ongoing discussion.

This changing pattern of consumers causes the adoption of organic practices in several parts of the world, and organic consumption rates start to increase across the globe. When per capita consumption is examined in European Countries, the highest per capita consumption amounts are observed in Switzerland (262.2 Euro), Denmark (190.7 Euro), Sweden (177.1 Euro), Luxembourg (170 Euro), Lichtenstein (142.4 Euro), Austria (127 Euro), Germany (105.9 Euro), France (83.3 Euro), Norway (68.1 Euro) and Netherlands (63.4 Euro), respectively (Willer and Lernoud, 2017). Further, an increasing trend in organic consumption is observed among US consumers. According to the report of the Food Marketing Institute (2006), 44 percent of the US shoppers purchased organic food in 2001 while this rate reached 51 percent in 2006. However, contrary to the increasing trend of organic consumption worldwide, the organic consumption in Turkey remains very limited. The Ecological Agriculture Organization in Turkey releases that per capita consumption of organic products was below 1 Euro for Turkey in 2015 (Willer and Lernoud, 2017). Indeed, Turkey has sufficient production facilities with arable lands and dynamic workforce for organic production, but these practices are mostly for export to several countries, in particular, USA, Canada, Australia, Iraq, Switzerland, and Japan. Between 80-85 percent of the organic production is exported while only 15-20 percent of the organic production remains in the domestic market (USDA Foreign Agricultural Service, 2016). In spite of the available production facilities, the inadequate level of organic consumption becomes a crucial matter for industry, economy, and welfare of the people in the country. Therefore, this thesis mainly aims to increase the organic use of individuals in the domestic market by understanding their consumption behaviors from a psychological perspective.

For this, one of the most known psychological model, the Theory of Planned Behavior (TPB), is used to examine the organic food purchasing behavior of individuals more comprehensively by including additional factors to the model. The model is expanded by including food safety concern, trust, health consciousness, individuals' knowledge about organic foods, and socio-demographic characteristics as background factors. Thus, the elements can be identified in predicting organic food purchasing behavior. Further, the mediating roles of those variables on behavior are reasonably examined as an addition. Since certain variables may have both direct and indirect impacts on behavior, to explore those relationships gives a better understanding of explaining actual behavior.

In this direction, a web-based survey is conducted to the customers of the farm of Ipek Hanim, which is a local farm in Nazilli, Turkey. A structural equation modeling with EQS 6 (Equations; Bentler, 1994-2011) software is performed to validate the measurement model, and the structural model results are reported indicating the causal relationships among variables.

This study mainly aims to develop a more comprehensive psychological model in predicting organic food purchasing behavior, which enables us to get a deeper understanding concerning the motives of individuals in their organic food purchasing decisions. To understand individuals' psychological decision making processes allows policymakers to make the required interventions that may promote organic food consumption in the domestic market. The increase in organic food consumption triggers organic production activities, which creates a social impact throughout the country.

The study also aims to present some implications for policymakers. First, the study can present how individuals perceive organic products. Then, the influences of several personal, situational and environmental factors on this behavior can be deeply understood. Further, motives and barriers to organic product consumption can be considerably understood. Last, the actions that should be taken by governments and marketers can be determined for developing

necessary interventions, and a shift from conventional food to organic counterparts may be provided through presenting the driving factors that motivate individuals to buy organic products. Thus, individuals' organic food purchasing behavior can be understood in greater detail by developing an expanded model. The underlying factors motivating individuals to buy organic food can be revealed as well as possible barriers to prevent them to buy organic foods. In the literature review part, organic food purchasing behavior of individuals are considerably examined by addressing several models, individual, situational, environment-related, and socio-demographic factors. The existing literature is tried to be examined in detail, and the results of several studies are mainly discussed.

1.2. Literature Review

Wide literature exists examining the determinants of organic food purchasing behavior of individuals, and several models and theories have been proposed to explain the behavior. Some studies consider the determinants of organic food consumption by reviewing the literature comprehensively from the perspective of several models and factors (Verhoef, 2005; Aertens et al., 2009; Joshi and Rahman, 2015). This dissertation attempts to examine the existing literature comprehensively by incorporating these review studies with other empirical studies, and it discusses several models and factors explaining organic food purchasing behavior of individuals.

1.2.1. Theories and Models

1.2.1.1. Theory of Planned Behavior

The Theory of Planned Behavior (TPB) developed by Ajzen (1991) is a mostly used psychological model in predicting individuals' behavior by predicting behavioral intention driven by attitudes, subjective norms and perceived behavioral control. The TPB can predict the behavior of individuals

when that particular behavior is intentional. The actual behavior is driven by the behavioral intention which is a function of attitudes, subjective norms and perceived behavioral control. In this context; behavior is referred to the act that individuals have a choice at will to perform or not perform (Ajzen, 1991). Intention is not the same concept as the behavior, however, intention can be used as a proxy for estimating behavior. Attitudes towards the behavior (behavioral beliefs & outcome evaluations) is a broad individual evaluation regarding the behavior, and it consists of behavioral beliefs which are the beliefs concerning the consequences of the behavior and outcome evaluations which are the negative or positive evaluations about the characteristics of the behavior. Subjective norms (normative beliefs & motivation to comply) are defined as the social pressure created by performing the behavior entailing how other people want the individual to behave. Perceived behavioral control (control beliefs & influence of control beliefs) has two characteristics: Individuals' ability to control the behavior and individual's confidence to be able to perform or not to perform the behavior. The TPB model mostly used in health-related behaviors, pro-environmental behaviors, and green food purchasing behavior is also comprehensively examined by several researchers in predicting organic food choice behavior. Saba and Messina (2003) conduct a survey study to examine the beliefs, attitudes, and intention of individuals towards organic fruits, and vegetable consumption from the TPB perspective. They draw a causal path showing the relationships between beliefs, attitudes, intention, and behavior. The findings of the study reveal that beliefs have significant impacts on attitudes, and attitudes are found to be significant determinants of intention, which implies that beliefs play an important role on organic fruits and vegetable consumption in a considerable extent. Individuals with positive attitudes towards the consumption of organic fruits and vegetables are also observed to find these products healthier, environmentally friendly, and tastier. Gracia and de Magistris (2007) aim to examine the factors affecting organic food purchases of urban consumers in Southern Italy. For a better understanding of consumers' organic food choices,

they use simultaneous models within the TPB framework, and the findings suggest that attitudes and organic product knowledge are the main determinants of organic purchasing intention of individuals. Besides, health attitude and environmental benefits of organic foods are effective both on organic purchasing intention and behavior. Gotschi et al. (2010) show that social norms are highly correlated with attitudes, and also with organic products buying behavior. Zia et al. (2010) aim to find the relationships between a set of variables in predicting organic food purchasing intention, and positive attitudes are found to have a vital contribution to predicting organic food purchasing intention, and most importantly, their findings reveal that friends, family and environmental groups have no impacts on organic food buying intention among the UK organic food buyers. Zagata (2012) examines organic product purchasing behavior from the TPB perspective and shows that attitude towards the behavior and subjective norms are the most important determinants of organic purchasing behavior. He reveals that individuals prefer consuming organic products due to positive health impacts, environmentally friendly production and better taste of organic products. Han and Stoel (2016) explore the impact of social norms on consumers' organic cotton purchasing and fair-trade apparel by classifying them as injunctive and descriptive. Injunctive norms defined the acts approved by a certain culture are more influential in encouraging positive attitudes while descriptive norms shaped according to others' actions have more influential on increasing purchase intentions of organic cotton and fair-trade apparel. Scalco et al. (2017) conduct a review study within the TPB framework by using a meta-analytic structural equation model. Their results support that attitudes have a major role in explaining buying intention followed by subjective norms and perceived behavioral control. In another review study, Han and Stoel (2017) examine the relationships among the TPB constructs using a meta-analytical approach to explain socially responsible consumer behavior. Their findings confirm that attitudes are the strongest determinants of buying intention followed by social norms and perceived behavioral control, respectively. Also,

they include additional predictor variables to the model, and the findings reveal that moral norms, self-identity, and environmental consciousness are found to be significant factors in explaining buying intention.

Several studies have investigated the organic purchasing intention within the TPB framework by including additional factors to the model that are believed to have a significant role in the behavior. For example, Thogersen (2007) examines organic purchasing behavior by modifying the TPB. In addition to the TPB constructs (attitudes, social norms, and perceived behavioral control), he includes beliefs of individuals about the consequences of purchasing organic food, and he also considers consumers' values such as desirable goals and varying importance which will determine the individuals' preferences. Last, consumer experience and subjective knowledge about organic food are included in the model as additional predictors for a better understanding of consumer decision-making process. Dean et al. (2008) examine the organic purchasing behavior within the TPB framework specific to organic apples and organic pizza. Different from the previous studies, they examine the predictive power of both positive and negative moral norms on purchasing intention. The results demonstrate that while the positive moral component has a significant role in the prediction of intention, no evidence can be found regarding negative moral components for both types of food. Also, affective attitude and subjective norms are found to have significant impacts on the intention for both foods. Although perceived behavioral control is found as a significant predictor for the fresh organic product, it cannot be found as a significant predictor for the organic processed product. Honkanen et al. (2006) use a modified version of the TPB which examines the relation between ethical values and attitudes, and the effect of attitudes on intention of organic food consumption. In their model, they investigate the impacts of ecological motives, political motives and religious motives on attitudes toward organic consumption. Their findings suggest that while ecological and political motives have significant and positive impacts on attitudes, religious motives have only minor effects on attitudes. Also,

individuals with higher positive attitudes towards organic food consumption are more tend to consume organic food as expected. Arvola et al. (2008) investigate the effects of integrated measures of affective and moral attitudes within the TPB in explaining the purchasing intention of organic foods. As well as subjective norms, both affective and moral norms are found to explain a considerable amount of variation in intention. They assert that incorporating the attitude measure as affective and moral into the TPB framework is partially supported. Ruiz de Maya et al. (2011) conduct a comprehensive survey study in eight European countries to analyze organic products market from the TPB perspective. In this version of the model, cultural values have a mediating role in attitudes, social norms and perceived behavioral control. The results suggest that social norms are the main drivers of intention for organic product consumption. The effects of social norms are found to be higher for individuals whose value scores are higher, so these people are more affected by what others think, which may present a profitable opportunity for companies. Aertens et al. (2011) investigate the impact of objective and subjective knowledge regarding organic food on organic consumption. Besides, they focus on the relationship between knowledge and consumers' attitudes. Their findings indicate that as the levels of objective and subjective knowledge regarding organic food increase, individuals have a more positive attitude towards organic food, and these two types of knowledge have positive impacts on organic consumption behavior. Aertens et al. (2011) investigate the impact of objective and subjective knowledge regarding organic food on organic consumption. Besides, they focus on the relationship between knowledge and consumers' attitudes. Their findings indicate that as the levels of objective and subjective knowledge regarding organic food increase, individuals have more positive attitude towards organic food, and these two types of knowledge have positive impacts on organic consumption behavior. Dean et al. (2012) specifically analyze the effect of moral norms, self-identity, and past behavior on buying intention for organic tomatoes and organic tomato sauce within the TPB framework. As their results

propose, the intention is predicted by attitude, subjective norm, and perceived behavioral control for fresh tomatoes while only attitude and subjective norm are found to have a significant impact in predicting intention to buy for tomato sauce. They further indicate that moral norms and self-identity positively affect purchasing intention, and past behavior is partially found to have a moderating effect between self-identity and intention. Urban et al. (2012) examine the intention to buy organic foods of Czech consumers within the context of the TPB. They further extend the model by incorporating descriptive norms as an addition to explain behavioral intention. Attitudes and norms are found as main driving factors of behavioral intention while the impact of perceived behavioral control is low. As a further finding, they state that descriptive norms increased the explained variation of intention. Zhu et al. (2013) aim to reveal how to promote green food consumption intention of Chinese consumers, and real consumption behavior by developing a conceptual model based on the TPB. They define internal influencing factors which are related to consumers' personal values, and define external influencing factors which are related to social environmental or governmental management, and also defined context factors such as purchasing convenience. They demonstrate that internal influencing factors of consumers mediate the relationships between external influencing factors. In addition, the relationship between green food consumption intention and behavior is moderated by purchasing convenience that also promoted green food consumption intention. Dowd and Burke (2013) also aim to develop an expanded TPB model to predict the buying intention of sustainably sourced food in the model employing three-step hierarchical regression. As their findings suggest, along with the TPB constructs, ethical self-identity, and moral norms have significant impacts on predicting intention to buy sustainably sourced food. Next, they add health, retail channels, and ethical values constructs to the model to obtain a more comprehensive model, and they find that health, retail channels, and ethical values significantly predict the intention to purchase sustainably sourced food, yet after the incorporating health,

retail channels, and ethical values constructs, ethical self-identity is not found as a significant predictor of purchasing intention for sustainably sourced food. Lee et al. (2015) aim to develop a more comprehensive model by incorporating health, trust, sensory appeal, environmental protection, ethical concern, and price sensitivity into the TPB to explain organic coffee purchasing behavior. First, health and environmental protection are found to have significant predictors of attitude and subjective norm while environmental protection is found to have significant predictor of perceived behavioral control. They further find that the TPB constructs which are significantly related to purchase intention, ethical concern and price sensitivity play significant moderating roles in organic coffee purchasing behavior. Wu and Nguyen (2015) aim to define the factors affecting consumers' purchase intention toward ecological fashion for a young Taiwanese sample within the TPB framework. Their findings illustrate that purchase intention of ecological fashion are driven by attitudes, control on availability, subjective norms, and green trust. Yazdanpanah and Forouzani (2015) aim to measure the contributions of self-identity and moral norms as additional constructs to the TPB model to predict organic food purchasing intention of Iranian students. Their results indicate that the main predictor of organic food purchasing intention is attitude while perceived behavioral control and subjective norms are not found as significant predictors of purchasing intention for organic food. They further reveal that including moral norms and self-identity in the model increases the explanatory power of the original model. Ham et al. (2015) aim to analyze the specific role of two types of subjective norms, namely, social and descriptive, to predict intention to purchase green food for a household sample. They conclude that descriptive norms, which are identified as the real activities and behaviors that other people are undertaking, are significant predictors on green food purchasing intention. Social norms, however, are defined as the perceptions of others opinions regarding the individual's behavior, and they are also found to affect green food purchasing intention significantly as well as attitude and perceived behavioral control. Paul

14

et al. (2016) extend the TPB to reach a higher predictive model by incorporating environmental concern in the model, and they better explain green product purchasing intention. Their findings suggest that attitudes and perceived behavioral control have strong explanatory power on purchasing intention while subjective norms do not. Further, as an additional construct, environmental concern improves the predictive ability of the model in explaining green product purchasing intention. Suh et al. (2015) examine the determinants of intention to organic food purchasing, and their findings reveal that consumer's past experience, attitude, subjective norm, trust, and perceived behavioral control are significant on organic food choice. Yadav and Pathak (2016) aim to extend the TPB by including additional factors in the model to understand the buying intentions of young consumers for green products. The findings suggest that attitude, social norms, perceived behavioral control, environmental concern, and environmental knowledge have significant impacts on buying intentions of young consumers. Further, Paul et al. (2016) aim to show the validity of the TPB in predicting consumers' green product consumption, and they incorporate environmental concern in the model to better explain the buying intention. Consumer attitudes and perceived behavioral control are found to affect purchasing intention significantly, and a mediating relationship is found between environmental concern and purchasing intention. Chen and Hung (2016) aim to examine the determinants of the acceptance of green products within the TPB framework and extend the model by emphasizing the environment. They find that attitude, perceived behavioral control, environmental consciousness, environmental ethics and beliefs of consumers are positively related to their intention to use green products while there cannot be found any evidence that social norms and social impression significantly affect intentions towards using green products. Maichum et al. (2016) investigate the purchase intention of Thai consumers within an extended framework of the TPB. They conclude that consumer attitude, subjective norm, and perceived behavioral control significantly affect purchase intention for green products. In addition,

environmental concern is found to have a significant impact on consumers' attitude, perceived behavioral control and purchasing intention for green products while environmental knowledge has no significant effect on purchasing intention, rather it has an indirect effect through attitude towards purchasing green products, subjective norm and perceived behavioral control. Johe and Bhullar (2016) examine the role of psychological factors, namely, self-identity, attitudes, perceived behavioral control, and norms in organic consumption. The findings show that organic identity prime has a significant impact on consumer intentions with respect to the pro-environmental prime and control conditions. They further conclude that organic self-identity increases consumer intentions by affecting their attitudes and group norms. Yadav and Pathak (2017) aim to understand the consumers' behavior for green product purchasing behavior from the TPB perspective. With this purpose, they extend the model by incorporating additional constructs, namely; perceived value and willingness to pay a premium for Indian sample. Their findings show that attitude, social norms, and perceived behavioral control can predict the purchasing behavior of consumers. They further find that perceived value has a positive impact on the consumer green purchase intention while willingness to pay a premium cannot be found to affect purchasing intention of consumers significantly. O'Connor et al. (2017) use an extended version of the TPB to investigate the fair trade purchasing of individuals. The proposed model shows that attitude, perceived behavioral control, self-identity, and moral norm significantly affect purchasing intentions, and thereby, predict fair trade purchasing behavior.

Although several studies have discussed the direct role of the TPB constructs on purchasing intention, only a few studies have examined the mediating roles of them on intention. Several researchers comprehensively study the moderating and mediating effects of the TPB constructs and other variables. Tarkiainen and Sundqvist (2005) aim to test the extension of the TPB for organic food purchasing behavior. They modify the original theory, and they indicate that subjective norms affect behavioral intention indirectly through attitude

16

formation, and they conclude that this version of the model explains the organic food purchasing better than the original model. Chen (2007) examines the moderating effects of organic buying motives on behavioral intention in the TPB framework. The findings demonstrate that food neophobia and food involvement, which are defined as food-related personality traits, play moderating roles on the relationship between food choice motives (mood, natural content, animal welfare, environmental protection, political values, and religion) and the consumer's attitude to organic foods. Also, food involvement has a moderating effect on the relationships between the consumer's intentions to purchase organic foods and perceived behavioral control, perceived difficulty and attitudes to purchasing. Al-Swidi et al. (2014) investigate the applicability of the TPB on organic food purchasing for both direct and moderating effects of subjective norms on attitude, perceived behavioral control, and purchase intention. The findings indicate that subjective norms moderate the relationship between attitudes and buying intention along with the relationship between perceived behavior control, and buying intention. Further, subjective norms have a significant impact on attitude toward buying intention. Kumar et al. (2017) find that the attitude towards environmentally sustainable products mediates the relationship between environmental knowledge and purchase intention. Further, environmental knowledge moderates this mediating relationship. Contrary to several findings, they cannot find any evidence that social norms significantly affect purchasing intention for environmentally sustainable products.

1.2.1.2. Norm Activation Theory

The Norm-Activation Theory is developed (Schwartz, 1977) to postulate how personal norms (self-expectations) are activated, and then, directly affect altruistic behaviors. Different from the social norms, personal norms are tied to the self-concept and related to internalized values such as pride, enhanced self-esteem, security, or self-evaluations. These personal norms are experienced as feelings of moral obligation (Schwartz, 1977) when thinking of another's need

for help, which activates the internalized values and norms. The model proposes that if individuals are aware of the consequences of their behaviors and they are ready to take responsibility of the consequences of those actions, they feel themselves more responsible for the consequences, and they are more tend to behave in line with the others' needs (Ebreo et al., 2003). However, in case of a high personal cost in acting pro-social behavior, pro-social norms will not increase pro-social behavior defined as the defensive denial (Tyler et al., 1982). Thus, the model describes the linkage between activators, personal norms, and behavior (Schwartz, 1977; Schwartz and Howard, 1984). There are four situational and personality trait factors activating personal norms. First situational factor, awareness of need, describes that the lack of required and desired situation of others (Schwartz, 1977). The second one is the situational responsibility which refers to the feeling of responsibility of individual's concerning that need. The third one is identified as efficacy referring the alleviation of that need. The fourth activator is ability described as the individual's perception concerning the existence of the resources or capabilities that are required to perform the behavior (Harland et al., 2007). Along with these situational factors, personality trait activators, namely, awareness of consequences and denial of responsibility, play significant roles on personal norms. Awareness of consequences means to become aware of the consequences of one's action for others, and denial of responsibility refers to the tendency of an individual's toward not taking the responsibility regarding the consequences of one's action for others (Schwartz, 1977). Thus, personal norms are activated by these factors, and they have direct impacts on prosocial or altruistic behavior.

This model has successfully been used in several domains in predicting the behavior whose consequences are interested in others. For example, Schwartz and David (1976) show that denial of responsibility and perceived ability have essential roles in helping behavior.

This model is mostly used to explain pro-environmental behaviors. Van Liere and Dunlop (1978) test how moral norms predict environment-related

behavior within the norm activation model framework. The findings are a little different from their expectations since they claim that the individuals who are aware of the negative consequences of yard-burning for others, and who feel responsible for their burning are less tend to burn their garden wastes than who are unaware. Contrary to their expectation, the relationship between awareness of consequences and yard-burning behavior is weak, but ascription of responsibility and burning behavior are strongly related to each other in line with their expectation. Stern et al. (1985) also investigate the activation process of moral norms for environmental protection in terms of both government and industry. It is important to note that while judgments regarding the ethical obligations of industry and awareness of harmful consequences to others and ascription of responsibility for those consequences are highly associated with each other in respect to hazardous chemicals, and the government has moral obligation regardless of not being responsible for the harm. Black et al. (1985) report that personal variables (attitudes, beliefs, and norms) mediate a causal relationship between contextual factors (demographic, economic, and structural) and pro-environmental behavior. Further, Ebreo et al. (2003) test the direct effect of moral norms on the predictive validity of Schwartz's norm activation model for waste reduction behavior. The data indicate that taking responsibility and its interaction with personal norms have significant impacts on waste reduction behaviors. In empirical studies, the constructs of the Schwartz' norm activation model are not generally considered entirely. However, in addition to awareness of need and situational responsibility, Harland et al. (2007) also examine the effects of situational activators, efficacy and ability, personality trait activators, awareness of consequences and denial of responsibility on pro-environmental behaviors. The findings reveal that including those factors to the model improves the model's predictive ability in explaining pro-environmental behavior, and personal norms significantly mediate the effects of activators on pro-environmental behavior. Joireman et al. (2001) extend the norm activation model by integrating social value orientation and consideration of future consequences

for pro-environmental behavior. They suggest that pro-socials report higher involvement than pro-selfs in pro-environmental intentions, and they believe more in the social consequences of environmental conditions. Further, participants who have higher consideration of future consequences are more likely to involve in pro-environmental behavior, such as in the personal, social and biospheric consequences of environmental conditions. Perceived consequences medaite the relationship between consideration of future consequences and pro-environmental intentions and behavior. Also, a strong positive association is found between perceived social consequences and pro-environmental intentions.

Thogersen (1999) examines the relationship between environmental attitudes and moral reasoning for buying attitudes of consumers. The findings show that personal norms are found to be significant predictors in choosing environment-friendly packaging. Verplanken and Holland (2002) examine the value-behavior relationship in environmental friendly consumer choices. Environmental values and the level of information related to those values promote environmental friendly consumer choices only if these values are central to the self-concept.

Hunecke et al. (2001) use the norm activation model for travel mode choice behavior which is an environmentally related context. They investigate the interaction between ecological norm orientation and certain external aspects (fare and subway station range) in an experimental field study. They find that the mobility-specific personal ecological norm is the strongest determinant of travel mode choice, and an integrative mechanism including external factors along with normative ecological orientation explains best the travel mode choice behavior.

Guagano et al. (1995) assert that Schwartz' norm activation model can predict the recycling behavior for households. They make an explanation that the presence of a bin reduces the personal cost of recycling, and thus, increases the awareness of households. Increased awareness in households provides

activation in social and personal norms in households, which affects recycling behavior. Further, Hopper and Nielsen (1991) examine recycling as an altruistic behavior, and the roles of social and personal norms in predicting recycling behavior. Personal norms are found to be affected by social norms, and personal norms transform into behavior only when awareness of consequences concerning recycling is high. Vining and Ebreo (1992) examine the changes in general environmental concern and specific recycling attitudes by using the constructs of Schwartz' norm activation model. Social norms are found to be as more predictive than personal norms in recycling behavior, and personal norms have direct and multiplicative impacts along with awareness of consequences.

The norm activation model is also used in the adoption of the green information system. Dalvi-Esfahani et al. (2017) examine the impacts of the identified factors on the behavioral intention for three different industries (oil/gas/energy, transportation, and manufacturing and construction) with the aim of environmental sustainability. As the results propose, personal norms have a significant impact on intention to adopt green information system. Also, the awareness of consequences and ascription of responsibility are driving factors of intention, which are mediated by personal norms.

Klockner and Ohms (2009) try to understand the role of personal ecological norms in organic food purchasing within the Schwartz's norm activation model framework. Their findings indicate that self-reported and the observed buyers of organic milk are predicted by personal ecological norms, social norms, and perceived behavioral control. They further find that personal norms are activated by awareness of need, awareness of consequences, perceived behavioral control, and social norms. Also, for participants whose personal ecological norms are stronger, the importance of the price difference between organic and conventional milk, the lack of knowledge concerning organic milk, and convenience are less.

1.2.1.3. Values Theory

The values theory should also be examined in detail since several studies prove that values are highly associated with behavior (Rokeach, 1973; Schwartz, 1992). When values are compared to attitudes, values are found to be more stable due to the relation with individual cognitive systems (Rokeach, 1973), and ten basic human values (self-direction, stimulation, hedonism, achievement, power, security, conformity, tradition, benevolence, universalism) are presented by considering various cultural structures in several parts in the World (Schwartz, 1992). The values theory has been widely used to understand the link between values and consumer behavior, and it is able to explain the behavior better derived from cultural differences (Beckmann et al., 1999).

1.2.1.3.1. Safety

Harper and Makatouni (2002) state that health and food safety concerns are the main drivers of organic food purchasing behavior. Also, they reveal that ethical concern has a significant impact on organic food purchasing decision, which motivates individuals to purchase organic food. Padel and Foster (2005) examine the link between values, in particular, safety and health, and consumer purchasing decisions for organic food and their findings suggest that safety and health concerns are highly correlated with organic food purchasing decision as several researchers also point out. Chinnici et al. (2002) postulate that changes in the family structure, lifestyle characteristics, and increased income induce significant changes in consumer patterns and food habits. The healthy food concern in food consumption leads individuals to purchase organic products. Zanoli and Naspetti (2002) also find that wellbeing and pleasure are the most critical values in purchasing organic products. Health, good taste, and nourishing products are observed as essential factors in organic consumption. Chryssohoidis and Krystallis (2005) examine the food buying behavior of consumers by dividing personal values as external and internal within the list of values typology, and they suggest that healthiness is an important motive in food

22

buying behavior. Further, health benefits are found to be more strongly associated with attitudes and behavior toward organic foods than perceived environmental benefits (Shepherd et al., 2005). In addition, individuals who give higher importance on health pay more for organic products (Botonaki et al., 2006). Yiridoe et al. (2005) assert that human health deteriorates over time, and individuals perceive organic food consumption as insurance or investment in health, so the findings reveal that health and safety concern are the key determinants affecting consumers' choice for organic food. Also, health-consciousness and safety-consciousness play essential roles in organic product preferences (Tsakiridou et al., 2009). This finding is also supported by Chen (2009). He suggests that health concern is the critical motive in purchasing organic food.

1.2.1.3.2. Hedonism

Another value which has a direct link with organic consumption is hedonism meaning that pleasure or sensuous gratification for oneself. Several studies have been conducted indicating the relationship between the taste of the food and consumption decision. For example, Schifferstein and Oude Ophuis (1998) find that better taste is the primary reason for organic food purchasing. McEachern and McClean (2002) suggest that taste is the first motive for organic food consumption. Grunert and Juhl (1995) examine the explanatory power of values on environmental attitudes and organic food purchasing within the perspective of the Values Theory of Schwartz (1992), and which values are relevant to environmental attitudes and organic food purchasing. Their findings suggest that specific values are related to purchasing organic food, and there is a positive linkage between buying organic food and universalism, benevolence and spirituality; on the other hand, a negative relationship is found between buying organic food and security, conformity, tradition, and power. Vermeir and Verbeke (2008) conclude that individuals who have traditional values (e.g., be humble, devout, respect traditions, no extreme ideas or feelings) are more tend

to purchase sustainable products while power seekers (influential, preserving the image, having authority, respect, and power over others) are less tend to buy them.

1.2.1.3.3. Stimulation

Stimulation which means variation and excitement seeking of an individual is found to have a significant impact on organic product purchasing behavior. Stimulation is represented by excitement, novelty, and challenge in life, and individuals who are motivated by these values are thought to be more likely to buy organic products since individuals are triggered to purchase organic products as new products in the market, which is associated to the notion of Exploratory Buying Behavior Tendency (Aertens et al., 2009). Fotopoulos and Krystallis (2002a, 2002b) find a significant relationship between organic food purchasing decision and exploratory food purchasing behavior for Greek sample. Chinnici et al. (2002) reveal that the group who consumes organic products occasionally is motivated by curiosity.

1.2.1.3.4. Universalism

Universalism is defined as a motivational goal for understanding, appreciation, tolerance, and protection for the welfare of all people and nature (Schwartz, 1992). Thogersen (2007) suggests that individuals with strong universalism values have more positive attitudes towards organic products. In addition, Dreezens et al. (2005) find that respondents with high universalism scores are more tend to buy organically modified goods. Doran (2009) finds a positive correlation between universalism value and fair trade consumption. Thogersen et al. (2016) investigate whether a stable value base exists in China for organic food purchasing within the value-attitude-behavior context. They conclude that there exists a linkage between attitudes towards organic vegetable purchasing and universalism value.

24

1.2.1.3.5. Benevolence

Benevolence is expressed as preservation and enhancement of the welfare of individuals with whom is frequently interacting (Schwartz, 1992). Several researchers investigate the relationship between benevolence and green product consumption. For example, Doran (2009) examines the linkage between personal values and fair trade consumption using the Schwartz Value Survey, and there cannot be found any evidence showing a strong association between them. Padel and Foster (2005) also report that just a minority of the respondents indicate that they like to buy organic products with local production since it promotes the local economy and makes them "feel good". Further, Ma and Lee (2012) state that the fair trade purchasers with higher level benevolence values are more tend to pay attention to the welfare of others than non-purchasers.

1.2.1.3.6. Self-Direction

Self-direction is defined as independent thought and actions such as choosing, creating and exploring (Schwartz, 1992). Some individuals may consume organic products with the purpose of diversifying themselves from others, which is thought to give them a positive self-image and identity (Aertens et al., 2009). Ma and Lee (2012) find that universalism, benevolence, stimulation and self-direction values are higher in fair trade purchasers than non-purchasers. Chryssohoidis and Krystallis (2005) find that internal values such as self-respect and enjoyment of life are the main drivers of organic products purchasing for Greek consumers.

1.2.1.3.7. Power

Power value is related to social status and prestige, and control or dominance over people (Schwartz, 1992). Some studies examining the relationship between values theory and organic product purchasing behavior find some strong evidence regarding this relationship. Dreezens et al. (2005) state that the respondents whose power values are higher give higher rates to

genetically modified food while they provide lower rates to organically grown food.

Some researchers have conducted to reveal the relationship between the TPB and values theory in predicting organic food buying behavior. Vermeir and Verberke (2008) also discuss the sustainable food consumption from the values perspective, and they include confidence and personal values to the TPB to gain better insight regarding the consumers' intention to prefer sustainable food. The findings illustrate that a combination of personal attitudes, perceived social influences, perceived consumer effectiveness and perceived availability explain variation in intention to consume sustainable food substantially. Thus, the TPB has been proven as a convenient theory for organic food consumption by several empirical studies. Especially recent studies establish a link between the TPB and values theory (Honkanen et al., 2006; Vermeir and Verberke, 2008; Ruiz de Maya et al., 2011). In addition, Schifferstein and Oude Ophuis (1998) examine health-related determinants of organic food consumption for a representative Netherlands sample. Their findings suggest that health attitude which is directly related to security value affects organic product purchasing behavior positively. They further emphasize that organic purchasing is part of a lifestyle and result of an ideology, which is strongly related to the value system. Thus, personality measures, attitudes and consumption behavior are reported to be affected by the value system. Ruiz de Maya et al. (2011) analyze the organic product market in eight European countries within both the Values Theory and the TPB framework. As the findings proposed, subjective norms are main drivers of organic consumption, and this effect is found to be higher for the countries whose scores are higher on Schwartz' value scale.

1.2.1.4. Means-end Chain Model

The means-end chain model (Gutman, 1982; Reynolds and Gutman, 1988) defines the steps of a decision-making process of consumers, which is composed of attributes, consequences, and values. The model assumes that

values, specified as end-states of existence, have crucial roles in determining the choice pattern, and consumer group variety of products into sets or classes to decrease the complexity of choices. Further, the model postulates that the actions of consumers have certain consequences, and they link particular outcomes with particular actions. These consequences have defined any result (physiological or psychological) that occurs directly or indirectly to the consumers (sooner or later) from their behaviors (Gutman, 1982). The means-end chain model is mostly used in organic product consumption behavior studies. Costa et al. (2004) show that the means-end chain model gives a better understanding of product knowledge of consumers, and its behavioral implications for meal choice although it has some shortcomings. Zanoli and Naspetti (2002) examine the consumers' motivations in purchasing organic products, and they employ the means-end chain approach to link product attributes with consumer needs. On the contrary to the expectations that organic products are perceived as expensive and difficult to find, most consumers have a positive perception towards them. Pleasure and wellbeing are found as the most important values for the consumers in food choice, and they are highly correlated with health issues. Therefore, consumers demand good, tasty, and nourishing products. Further, these consumers are found to be different with respect to their experience and information levels. Also, Ludviga et al. (2012) try to reveal the consumers' values in purchasing organic food by conducting to the consumers' focus groups and laddering interviews within the means-end chain approach. Their findings indicate that many consumers perceive organic products as healthy, with good quality and tasty. At the same time, they consider these products as rather expensive and of questionable appearance. Further, consumers with higher concern regarding health and safety issues of the food product, and consumers with concern on environment-friendly production systems are more tend to purchase organic products. Fotopoulos et al. (2003) also employ the means-ends chain methodology with laddering interviews to the consumers regarding organic wine choice. Their results reveal that the main motives behind organic

wine shopping behavior are related to how wine purchase-relevant knowledge is stored and organized in their memory with regards to the consumers' personal values. Padel and Foster (2005) aim to reveal the values that underlie consumers purchasing decisions of organic food by drawing the data from focus groups and laddering interviews. Organic products are mostly associated with vegetables and fruits, and a healthy diet. Further, the price is found as a barrier for most consumers, and motives and barriers differ according to the product categories. Lind (2007) aims to find the motivational structure of consumers concerning unbranded, imported, branded, and locally-organic pork, she tries to find the product attributes out by identifying the consequences and values within the means-end chain approach. Purchasing behavior of consumers vary across product categories, and the price of the product and consumer's involvement play crucial roles in organic product choice. Chen et al. (2015) identify the attributes, consequences, and values that have impacts on consumer perceptions and adoption of organic rice. Fun and enjoyment in life and security are found as the most driving values in promoting organic rice purchasing.

1.2.1.5. Health Belief Model

Health belief model (HBM, Rosenstock et al., 1988) was developed with the aim of presenting health behavior explained by personal beliefs and perceptions towards disease, and this model aims to offer the strategies in decreasing the possibilities of this disease. In this direction, individual's perception is examined in four basic dimensions, namely, perceived susceptibility, perceived seriousness, perceived benefit, and perceived barrier. In addition to these basic dimensions, cues to action, self-efficacy, and certain mediating factors are included in the model. In this framework; perceived susceptibility is related to the risk that individuals perceive in engaging the behavior. The higher the risk perception of individuals, the higher the likelihood of engaging the behavior to decrease the risk. Perceived seriousness is related to knowledge and beliefs of individuals relating to results of the disease in engaging

the behavior. Perceived seriousness is determined by knowledge and beliefs of individuals concerning results of the disease. Perceived benefit expresses the individuals' opinions towards the value or usefulness of new behavior in decreasing the risk of developing a disease. When individuals believe the new behavior will reduce the risk of the likelihood of developing a disease, they may adopt the new behavior. Perceived barrier is defined as the personal difficulties of individuals in changing the behavior and in adopting the new behavior, and perceived barrier is evaluated as the most important construct in changing the behavior (Janz and Becker, 1984). Cues to action are defined as events, people and things that motivate individuals to change their behaviors. Illnesses of family members, media reports, mass media campaigns, and advice from other people can be evaluated as examples of them (Graham, 2002). Self-efficacy means the belief in one's own ability to perform something (Bandura, 1977). If individuals believe that adopting the new behavior is useful, but they do not believe accomplishing this, the likelihood of performing the new behavior will decrease. Modifying factors included in the model in an attempt to examine four basic constructs state that certain factors such as culture, education level, and past experiences. These are individual characteristics affecting personal perceptions. The HBM (Rosenstock et al., 1988) is mostly used to understand health-related behaviors. For example, Janz and Becker (1984) report several studies using the HBM for a variety of health behaviors in their review, namely, influenza, breast cancer, antihypertensive regimens, diabetic regimens, and smoking behavior. Also, Carpenter (2010) reports a range of health-related studies to show the effectiveness of the HBM in predicting behavior such as drug taking, dental care, attend the program, mammogram, and cervical smear test. Further, the model is employed various domains such as, beliefs about AIDS, use of alcohol and drugs, unprotected sex (Hingson et al., 1990), dietary intake, smoking, alcohol consumption, physical activities, weights, hours of sleep (Wacker, 1990), osteoporosis (Kim et al., 1991; Hazavehei et al., 2007), obesity (Becker et al., 1977; James et al., 2012), eating disorder (Akey et al., 2013), dental health

(Buglar et al., 2010), food handling behaviors (Hanson and Benedict, 2002), recycling behavior (Lindsay and Strathman, 1997), seat belt use (Şimşekoğlu and Lajunen, 2008). Since the HBM is proved as a comprehensive model in explaining a variety of health-related behaviors, it is also preferred to use in understanding the consumption of organically produced foods. However, there exist only a few studies on organic food consumption. Yazdanpanah et al. (2015) aim to evaluate the consumer perception towards safety risk of foods, and they also examine intentions of consumers towards organically produced foods within the HBM framework. They further investigate the predictive ability of the HBM in predicting willingness to use organic foods, and to what extent the model constructs can best explain organic food purchasing behavior. They find that self-efficacy, perceived barriers, and perceived benefits are found to have significant impacts on organic product purchasing motivations of individuals.

1.2.2. Individual Factors

1.2.2.1. Emotions

Laros and Steenkamp (2005) develop a hierarchical model to classify consumers' emotions, and they distinguish those emotions into different levels of detail to better explain consumer behavior. They divide emotions as positive and negative at the subordinate level. More specifically, they classify them as four positive (contentment, happiness, love, and pride) and four negative emotions (sadness, fear, anger, and shame). The respondents are asked thirty-three specific emotions concerning genetically modified food, functional food, organic food, and regular food to determine their tendency towards them. The participants feel very angry and afraid about consumption of genetically modified foods, which means that they feel energized and powerful rather than inactive. Further, they assert that risk and uncertainty regarding genetically modified food lead individuals to have feelings of fear. For the negative emotions experienced by consumers is quite similar to functional, organic, and

regular food, but the respondents are more fearful regarding functional food than for organic and regular food. For positive ones, the scores of contentment are quite lower for organic food than functional and regular food.

Verhoef (2005) investigates the effects of emotions, namely, fear, empathy, and guilt, on consumers' purchase preferences and frequency of buying organic meat. He defines emotions as negative or positive affective reactions to perception situations, and he chooses one goal-directed emotion (fear), one self-conscious emotion (guilt), and one other-oriented emotion (empathy) in his model that may have possible impacts on organic meat choice and buying frequency. According to this, fear is mainly defined as a feeling that a desire to escape or avoid a noxious event (Rogers, 1975) and he claims that the fear of health consequences of consuming ordinary meat provides to prefer organic meat, and increase the buying frequency of organic meat. The results suggest that fear has a positive impact on organic meat choice. Guilt is described as an unpleasant feeling related to the acceptance that one violates a personally relevant moral or social standard (Kugler and Jones, 1992). Consumers may feel guilty regarding regular meat consumption when this behavior contradicts with their personal norms or the beliefs of others in the consumers' environment (Verhoef, 2005). He posits that there is a positive relationship between the perceived guilt and organic meat choice and its buying frequency. The findings reveal that guilt has a positive impact on buying frequency of organic meat. Empathy is also described as an emotional response elicited by the welfare of animals in the ordinary meat industry, and the existence of strong evidence that consumers have empathetic reactions towards animals is asserted (Verhoef, 2005). The results suggest that perceived empathy has a positive impact on both consumers' choice and buying frequency of organic meat. Lerner and Keltner (2000) also examine the influence of fear and anger on an individual's judgment and choice. They propose that fearful people make pessimistic judgments regarding future events while angry people make optimistic judgments. Since anger and fear are distinctly evaluated on uncertainty and control, their impacts

are different on risk assessment, and fear predicts higher risk assessments while anger predicts lower risk assessments. Watson and Spence (2007) propose four appraisals that define specific emotions on consumer behavior. Outcome desirability expresses pleasantness and goal consistency, agency including responsibility and controllability, fairness, and certainty which are found as antecedents of consumer behavior, and also highly correlated with each other. Pennings et al. (2002) show that without trust in the information about mad cow disease, fear and overestimates of risk might reduce beef consumption to a considerable extent. Kaiser (2006) posits that anticipated feelings of moral regret as an additional construct to the TPB increases the explanatory power of individuals' behavioral intention. Bamberg and Moser (2007) propose that feeling of guilt is a strong predictor of moral norms, attitude and perceived behavioral control, which are the antecedents of intention. Further, intention plays a mediating role between those psycho-social variables with pro-environmental behavior.

Joshi and Rahman (2015) report a series of researches in their review studies which examine the factors affecting green purchase behavior. According to this, environmental concern and responsibility, guilt, and generativity are found as leading factors influencing consumers' green purchase behavior significantly. Different from the related literature, they describe environmental concern as an emotion in their review study. Padel and Foster (2005) find that environmental concern has a major role in consumer's organic purchasing decision, and it affects purchasing decision positively. This finding is also supported by Zhao et al. (2014), and they suggest that individuals with a higher level of environmental concern are more likely to engage in green purchasing behavior. Environmental responsibility and environmental sensitivity are also found to positively affect both behavioral intention and sustainable consumption behavior (Wang et al., 2014). Further, the feeling of guilt is an underlying factor affecting green purchasing behavior. For example, Young et al. (2010) suggest

that the guilt from not purchasing the greenest product has a significant impact on purchasing decision.

Onwezen (2015) proposes that positive private and negative collective emotions are the most effective factors in explaining the intentions of buying organic food which is a part of pro-environmental consumption. Besides emotions aroused by personal experiences, collective emotions are relevant to groups to which one belongs. He aims to compare the impacts of private versus collective experienced emotions on buying intentions toward organic food. The findings reveal that both private and collective emotions have significant impacts on buying intention towards pro-environmental products and that these impacts are stronger for positive private emotions and negative collective emotions.

1.2.2.2. Habits

Habits as sets of scripts are based on a history of more and more automatic decisions (Klockner et al., 2003) have been widely investigated in predicting human behavior. Triandis (1977, 1980) suggests that habit and intention are considered as counterparts, and the more habitual an action is, the less intentional it becomes. Thus, Klockner et al. (2003) try to integrate habits into the normative decision-making process to predict environmental-related behavior. Normative models posit that strong habitual behavior causes limitations on the search for information, and it blocks the norm activation process that norms are strong predictors of behavior. However, habit is proven to be a promising addition to normative decision-making. When habits are located in the attention stage or the evaluation stage, interventional approaches will be successful in predicting normative behavior. On the other hand, some studies assert that habits have negative impacts on green purchasing behavior (Padel and Foster, 2005; Vermeir and Verbeke, 2006; Tsakiridou et al., 2008). Further, habit is evaluated as one of the most critical obstacles to buy organic products (Cera-foundation, 2001). Magnusson et al. (2001) refer to the study of Mathisson and Schollin (1994) who assert that habit is one of the reasons that

consumers do not purchase organic vegetables. Vuylsteke et al. (2004) argue that individuals whose attitudes towards organic food are positive may block purchasing organic food since they are used to purchase non-organic food, and it is difficult to change their habits due to the low involvement with organic food. Thogersen and Olender (2006) claim that if consumers typically purchase groceries in a routine or habitual way, they may not take into account other alternatives, and they sustain their usual choices as long as they are satisfied, which seems like one of the reasons of the inadequate level of organic product purchasing (Grankvist and Biel, 2001). In addition, normal behaviors with environmental consequences are defined as habitual, and values guide these behaviors in a more reflective process (Biel et al., 2005). They also assert when behaviors are habitual, individuals' decision-making processes are routinized, and individuals decide with little conscious awareness. Therefore, they suggest that a behavioral change requires a conscious decision, and propose that different kinds of information have influential on behavioral choice. Dahlstrand and Biel (1997) also state that habit is a meaningful concept in determining the factors that affect environmentally friendly behavior, and they recommend specific interventions to change habitual non-environmentally friendly behavior to environmentally friendly behavior.

1.2.2.3. Moral or Personal Norms

Schwartz (1968, 1977) has developed personal or moral norm (used interchangeably in the literature) notion based on internalized values referring to whether an individual's thinking and acting in a certain way is right or wrong. He also makes a clear distinction between social and personal norms. He defines social norm as behaving in line with the expectations of other people with a feeling of social pressure while he defines personal norm as a self-expectation for a specific situation with a moral obligation feeling (also supported by Ajzen, 1991; Manstead, 2000). Schwartz (1973) states that personal norms corresponding to those individuals whose convince themselves towards the

behavior in a certain way are more effective than social norms in predicting behavior. He further finds that the impact of subjective norms on behavior is mediated by the personal norms (Schwartz, 1977). Parker et al. (1995) also aim to extend the TPB by including personal norms to better explain intention to perform the behavior, and they illustrate that the personal norms are considerably found to have significant impacts on intentions to perform the behavior. Harland et al. (1999) explore the impact of personal norms on environmentally relevant behavior as an additional component to the TPB constructs. They indicate that personal norms have independent contributions in predicting behavioral intentions, and they further investigate whether personal norms have contributions in explaining past behavior as well as attitude, subjective norms, and perceived behavioral control. Their findings suggest that personal norms increase explained variance for both intention and past behavior, and adding personal norms to the model decreases the impacts of attitudes and subjective norms. Thogersen (1999) investigates the linkage between personal norms and environmentally related behaviors for Danish consumers, and the findings reveal that the personal norm is a significant predictor in environment-friendly packaging choice. He further investigates the relationship between the behavioral influence of personal norms and direct experience of repeated pro-social behavior (Thogersen, 2002). The findings confirm that the preferences of consumers between organic and non-organic red wine highly dependent upon their personal norms, yet this dependence is highly related to consumers' direct experience of buying organic red wine. For the consumers, who did not buy organic red wine in the past, personal norms only have a marginal effect on buying preference while for the consumers, who bought organic red wine in the past, personal norms have strong impacts as is the case with attitudes. Godin et al. (2005) investigate the predictive power of alignment of intentions with moral norms when compared to the alignment of intentions with attitudes on health behavior. The regression analysis results demonstrate that individuals whose intentions are more aligned with their moral norms are more tend to perform the

behavior when compared with individuals whose intentions are more aligned with their attitudes. Further, Kaiser (2006) aims to develop a more reliable version of the TPB based on composite measures and increases the explanatory power of the model by including moral norms. He reveals that moral norms are mediated through people's attitudes in predicting intentions. Thogersen and Olander (2006) examine the attitude-norm-behavior relationship in a panel survey, and their findings reveal that personal norms are the strongest predictor, and the stronger the personal norms of consumers on organic product purchasing behavior are, the greater the possibility that they increase their organic product purchasing. Bamberg and Moser (2007) conduct a meta-analysis to determine the psycho-social factors of pro-environmental behavior. The results suggest that personal norm is a significant predictor of pro-environmental behavioral intention as well as attitude and behavioral control. Bamberg et al. (2007) focus on the role of the personal norm in public transportation decisions instead of car usage. They develop a highly integrated model, and there is found evidence that personal norms depend on both anticipated feelings of guilt and perceived social norms. Also, Dean et al. (2008) investigate the effects of moral concerns on intention to purchase organic apple and organic pizza. They conclude that positive moral component has a significant impact on purchasing intention for both products. Arvola et al. (2008) examine the effects of integrated measures of affective and moral attitudes from the TPB perspective in predicting the purchasing intention of organic foods. Both affective and moral norms are found to explain a considerable amount of variation in intention along with subjective norms. Their findings indicate that the impact of moral norms is partially mediated through attitudes and partially direct. Thogersen (2009) aims to show the difference between subjective social norms and personal norms in the context of organic food purchasing and recycling behaviors. He demonstrates that there is a difference between the two types of norms in terms of embeddedness in the individuals' cognitive structures, and the position of personal norms is found to be stronger in the cognitive structure, which means personal norms have a

greater influence on behavior. Moser (2015) also finds that the personal norm is a significant predictor of green product purchasing behavior.

The concept of self-identity which is mostly used as equivalent to moral norms or personal norms (Conner and Armitage, 1998) has also widely examined in the literature. Contrary to their claims, Sparks and Shepherd (1992) find that as well as the TPB variables, self-identity has an independent effect on behavioral intention to buy organically produced vegetables. Armitage and Conner (1999a) aim to evaluate the predictive validity and causal associations of the TPB constructs on low-fat diet behavior. Further, they integrate self-identity into the model, and the study's findings demonstrate that the TPB model explains a considerable amount of variance in intention and behavior for food choice. Self-identity is found to have a causal impact on intention and behavior. They further investigate the direct effect of self-identity as a separate construct on low-fat food eating behavior as well as the TPB variables (Armitage and Conner, 1999b), and it is found to be a significant predictor in a healthy food eating intention, in turn, behavior. Michaelidou and Hassan (2008) examine the role of ethical self-identity in predicting attitude, and organic food purchasing intention. As their results indicate, ethical self-identity is seen to have a significant impact on attitude and intention to buy organic food, which suggests that individuals' ethical concerns influence their consumption preferences. Zia et al. (2010) also demonstrate that ethical self-identity plays a crucial role in forming the intention to buy organic foods. Johe and Bhullar (2016) also examine the role of psychological determinants in organic consumerism. Their findings suggest that self-identity has a significant impact on consumers' attitudes and group norms, which increases consumer intention to buy organic food.

1.2.2.4. Attitudes

Attitude toward a behavior is the degree to which performance of the behavior is positively or negatively valued. According to the expectancy-value

theory (Fishbein and Ajzen, 1975; Ajzen and Fishbein, 2000; Ajzen, 2001; Ajzen and Fishbein, 2008), attitudes are functions of beliefs and their evaluations regarding an object. Attitudes are composed of the multiplication for the assessment of an outcome and the strength of the beliefs described as the subjective probability while performing the behavior which will lead to the outcome. Saba and Messina (2003) also follow this approach in their study which investigates attitudes and beliefs towards the consumption of organic fruits and vegetables. Consistent with the theory suggested, their findings indicate that the summed products of beliefs and outcome evaluations have significant contributions to the prediction of attitudes. They further find that attitude is a significant determinant of buying intention of organic fruits and vegetables (also supported by Sparks and Shepherd, 1992), which is a substantial impact on self-reported consumption. Bredahl (2001) also investigates the consumer attitudes' formation towards the production of genetically modified food and purchasing decisions for genetically modified yogurt and beer by employing a broad survey study. The attitude towards genetically modified food production is deeply embedded in more general attitudes held by the consumers, especially attitude towards nature and attitude towards technology. These general attitudes affect perceived risks and benefits of the technology. These general attitudes, which have impacts on beliefs held by consumers regarding the quality and trustworthiness of the products, also considerably affect purchasing decisions for genetically modified yogurt and beer. Dreezens et al. (2005) also examine the role of specific values in predicting the individuals' attitudes toward genetically modified food and organically grown food. Their findings indicate that attitudes toward genetically modified food are determined by the beliefs about these type of food, and power value while attitudes toward organically grown food are determined by the beliefs about these type of food and universalism value. Thogersen (2007) develops a model investigating the determinants of attitude towards buying an organic tomato product. In the model, individuals' salient beliefs about the consequences of buying organic tomato are

38

stated as a function of attitude. Further, an individual's general values (specific to universalism) and experience with buying organic food, in general, are added to the model as additional predictors. The results demonstrate that the model fits the data at a satisfactory level, and it explains the variations in the attitudes adequately. In line with the expectations, attitudes are found to depend primarily on beliefs about consequences while basic values and past experience have only marginal contributions to explained variance.

1.2.2.5. Social or Subjective Norms

Subjective norm is defined as the perceived social pressure for a person to engage or not to engage in a behavior. It is assumed that subjective norm is determined by the total set of accessible normative beliefs about the expectations of important referents for this person (Ajzen, 2006). The impact of subjective norms on environmentally responsible behavior has been emphasized in several studies. While some researchers find subjective norms positively affect consumers' intention to purchase organic food (Chen, 2007; Dean et al., 2008; Arvola et al., 2008; Gotschi et al., 2010; Ruiz de Maya et al., 2011; Zagata, 2012; Suh et al., 2015; Yadav and Pathak, 2016; Maichum et al., 2016), others find no evidence regarding this relationship (Tarkiainen and Sundqvist, 2005; Yazdanpanah and Forouzani, 2015; Paul et al., 2016). Also, Bamberg et al. (2007) assert that subjective norm has no direct impact on intention, instead it has an indirect effect on behavior mediated by attitude, perceived behavioral control, moral norm and feelings of guilt.

1.2.2.6. Perceived Behavioral Control

Perceived behavioral control refers to people's perceptions of their ability to perform a given behavior (Ajzen, 2006). Many studies have found that perceived behavioral control has significant impact on organic product purchasing intention (Thogersen, 2007; Dean et al., 2008; Dean et al., 2012; Ham et al., 2015; Paul et al., 2016; Suh et al., 2015; Yadav and Pathak, 2016;

Maichum et al., 2016) only a few studies find no evidence regarding a significant relationship between them (Yazdanpanah and Forouzani, 2015).

1.2.2.7. Personality Traits

In psychological studies, personality plays a vital role in explaining individuals' attitudes and behavior due to their stable features which capture how individuals think, feel, and behave (Bazzani et al., 2017). They investigate the linkage between personality traits and consumers' choices for both local and organic food products by using big five personality traits, namely, openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism. Their findings reveal that personality traits may be the underlying reason for heterogeneity in consumers' choices for locally produced foods, but not for organic counterparts.

Chen (2007) investigates whether food-related personal traits play a moderating role in determining personal food choice. He considers food-related personality traits as two separate variables, specifically as food neophobia and food involvement, and he investigates the relationships between two types of personality traits and consumer's behavioral intentions to buy organic foods. Findings from the study reveal that the consumers with higher food involvement are more likely to hold a positive attitude to organic foods and they are more intended to purchase organic foods if they are more familiar with them. He further states that individuals with higher food neophobia are more likely to hold a positive attitude toward organic foods for political values motive, which implies that individuals with higher food neophobia may have positive attitudes only when organic foods are proven safe with certificates and labeled clearly by the government and the related institutions.

1.2.2.8. Lifestyle Characteristics

The way of life of individuals also has an important role in their consumption habits and patterns. Gilg et al. (2005) argue that green buying

incorporates other environmental actions in the context of the development of sustainable ways of living. Their findings also support their claims which indicate that the conventional forms of green consumption are related to the other forms of environmental actions. Nie and Zepeda (2011) divide consumers into segments based on their food-related lifestyles "which is a mixture of habits, conventional ways of doing things, and reasoned behavior". They determine five components of lifestyle, which can be helpful to explain food purchases, namely, ways of shopping, quality aspects, cooking methods, consumption situations, and purchasing motives. In addition, they define the environment and health-related lifestyles. They point out that certain products such as organic or low-calorie energy bar may be popular among adventurous consumers due to their active lifestyle. Gracia and de Magistris (2007) measure lifestyle with two variables related to specific dietary patterns, specifically, vegetarian and additive free. Both lifestyle variables, vegetarian and additive free, affect organic product knowledge positively which is one of the determinants of buying intention for organic products. Williams and Hammit (2000) suggest that organic buyers are more tend to engage in health-promoting and environmentally friendly activities than conventional buyers. Their survey results indicate that organic buyers differ from conventional buyers with respect to lifestyle characteristics, and they state that buying organic may represent a lifestyle choice. They exemplify that organic buyers are more likely to be a vegetarian than conventional buyers, and they grow their own fruits and vegetables, recycle, and buy environmentally friendly products.

1.2.3. Situational Factors

After examining several psychological models and factors, the study also considers some situational factors, namely, barriers and motives, in explaining organic food purchasing behavior of individuals. As well as internal factors such as beliefs, habits, values, attitudes, there also exists some external factors influencing organic purchases of consumers. These are mostly defined as

motives and barriers that promote or prevent organic products purchasing behaviors of individuals. Bryla (2016) investigates organic food consumption with respect to several aspects for a representative Polish sample. The motives, which are healthiness, ecological character of the product, food safety considerations, superior taste, and quality assurance, become prominent in organic food consumption while the barriers which are high price, insufficient consumer awareness, low availability of organic products, short expiry dates, and low visibility in the shop are the factors preventing the development of organic food market.

1.2.3.1. Barriers

1.2.3.1.1. Price

Price is evaluated as the major issue for individuals in buying organic food, and around half of the consumers report that they would purchase organic food if they were cheaper (Hill and Lynchehaun, 2002). Furthermore, Magnusson et al. (2001) posit that the existing price difference is one of the major obstacles in buying organic food, and they observe that premium prices can partially explain the low purchase frequency of organic food. This finding is also supported by several researchers (Lockie et al., 2002; McEachern and McClean, 2002; Padel and Foster, 2005; Lea and Worsey, 2005; McEachern and Willock, 2004; Vindigni et al., 2002; Fotopoulos and Krystallis, 2002a; Botonaki et al., 2006; Zanoli and Naspetti, 2002; O'Donovan and McCarthy, 2002; Chryssohoidis and Krystallis, 2005; Hughner et al., 2007; Bryla, 2016). Buder et al. (2014) also support the view that price is one of the main barriers reducing organic product purchasing, but they also assert that the reasons why consumers do not purchase organic products vary according to product type. Marian et al. (2014) examine the price effect as a product attribute on the purchase of the organic product, and they investigate whether price is a critical barrier for the development of the organic food market. Findings from the study

reveal that not the only higher price is an important barrier to the purchase of organic food, but it is also a disadvantage of repeating organic food purchasing.

1.2.3.1.2. Product Availability

Another obstacle in organic food consumption is its low availability. Chryssohoidis and Krystallis (2005) report that limited availability is the main factor reducing organic purchases in Greece, and it is even prominent than price barrier. Lea and Worsey (2005) also agree with this idea, and they assert that lack of availability is one of the main barriers to organic food purchasing as well as expense. Botonaki et al. (2006) state that the main reason for not buying organic produce is that consumers cannot find them in the market. Makatouni (2002) also reaches the same conclusion that lack of availability is one of the main obstacles that prevent consumers from purchasing organic food (also supported by Vindigni et al., 2002; Fotopoulos and Krystallis, 2002b; Worner and Meier-Ploeger, 1999; O'Donovan and McCarthy, 2002; Zanoli and Naspetti, 2002; Hughner et al., 2007; Buder et al., 2014).

1.2.3.1.3. Lack of Information

Many consumers are not aware of the meaning of the term organic, certification system and labeling on the products, and many of them do not know how they identify an organic product. This lack of awareness might be a reason for the low level of organic purchasing. McEachern and McClean (2002) assert that consumer knowledge and awareness play crucial roles on the development of the organic market. Padel and Foster (2005) report that 52 percent of the respondents just look for the word "organic" instead of its certification label. Aarset et al. (2004) state that consumers have limited knowledge about the meaning of the term organic, and they are unaware of organic labeling and certification process, which is an important barrier to organic purchases. Botonaki et al. (2006) also support these findings suggesting that the low level of consumer awareness and knowledge about certification systems in organic

43

products block the development of the organic market, which might be attributed to the poor promotion and the low availability of certified products. Schleenbecker and Hamm (2013) reveal that consumers' awareness of organic labeling process is low, and they demand reliable information to increase their awareness.

1.2.3.1.4. Lack of Trust

Lack of trust is evaluated as one of the barriers that limits green or organic purchasing behavior. Chen (2010) defines green trust as "a willingness to depend on a product, service, or brand based on the belief or expectation resulting from its credibility, benevolence, and ability about its environmental performance'' referring other researchers. Several studies have been conducted to investigate the impact of trust on consumer green purchase behavior. Gupta and Ogden (2009) conclude that trust in others is a significant determinant in discriminating green and non-green buyers. Their findings suggest that green buyers generally trust more in others meaning that these people are more tend to engage in green purchasing behavior. Tung et al. (2012) find that the majority of Taiwanese respondents show a high level of pesticide concern while they show a low level of trust in organic food. Further, consumers' trust in organic food and their concern about pesticides jointly explain the respondents' willingness to pay a premium and purchasing behavior. Findings from the study reveal that lack of trust and confusing organic product certification levels are the main barriers to limit organic product purchasing behavior. Vermeir and Verbeke (2008) assert that Belgian respondents, in general, have some doubts concerning the reliability of the sustainable character of the dairy products. They also posit confidence has a positive impact on sustainable dairy product purchasing intention. Their results suggest that individuals with higher level confidence have more positive attitudes toward buying sustainable dairy products, which is an antecedent of behavioral intention. Chen and Chang (2012) aim to develop a framework to investigate the impacts of green perceived value and green

perceived risk on intention to green purchasing, and they also examine the mediating role of green trust. Their findings demonstrate while green perceived value positively affects green trust and green purchase intention, green perceived risk negatively affects both green trust and green purchase intention. They further suggest that the relationships between green purchase intention and their two antecedents (green perceived value and green perceived risk) are partially mediated by green trust. In addition to the lack of trust concerning the food claims and characteristics, the lack of trust in the organic certification process creates a barrier to block organic food purchasing behavior. Padel and Foster (2005) posit that consumers feel insecure regarding the information on the labels of organic product, and they report that labeling is made just to provide an extra charge. Further, around half of the participants report that they mistrust organic labels (Lea and Worsley, 2005). This finding is also supported by Aarset et al. (2004), and they assert that many of consumers are unsure about the concept of organic farmed salmon, and show a considerable amount of distrust in the regulatory process. Consumers tend to distrust organic labels and certification bodies, and question genuineness of organic products. Nuttavuthisit and Thogersen (2017) further posit that consumer trust is a prerequisite for consisting of a market for credence food. In this direction, they examine how and how much trust affects consumer decisions in purchasing green food. Their findings reveal that lack of consumer trust is a barrier to the development of a market for organic food in Thailand. The focus groups and in-depth interviews demonstrate that participants' low level of trust and the survey results reveal that lack of trust decreases consumer expectations regarding advantages of purchasing organic food, which reduces the possibility of buying organic food.

1.2.3.1.5. Skepticism

Skepticism is not a kind of personality trait, somewhat it depends on the context and the content of the communication, and it comes in sight only in some

specific situations. It is described as that individuals doubt what other people say or do, but they may be convinced by any evidence or proof (Mohr et al., 1998).

One of the reasons for the lack of consumers' responsiveness is defined as confusion and skepticism towards green marketing communications. Consumers generally do not believe the environmental benefits that appear in advertisements and on product labels, which prevents the growing potential of green products (Mohr et al., 1998). Therefore, it is important to note that skepticism towards information about green products should be considered while investigating individuals' green product buying behaviors. Mostafa (2006) suggests that skepticism towards environmental claims is negatively related to Egyptian consumers' intention to buy green products. Also, Albayrak et al. (2013) find that less skeptical individuals show higher attitudes towards the intention to buy green products.

1.2.3.2. Motives

1.2.3.2.1. Trust

Trust is also evaluated as a motive providing consumers to purchase green or organic products. Saba and Messina (2003) investigate the role of trust in perceived risk and perceived benefit of organic foods. They conclude while trust has a positive impact on perceived benefit, it negatively affects risk perception of individuals which might have a significant impact on organic food consumption behavior. Also, the mediation role of trust on green buying intention is investigated, and the findings reveal that the relationships between green purchase intentions and their two antecedents – green perceived value and green perceived risk – are partially mediated by the green trust (Chen and Chang, 2012).

1.2.3.2.2. Health

Food safety and health are among the main motives for purchasing organic food. Botonaki et al. (2006) suggest that the main motivation for consumers to buy organic products is that they are distinguished as healthier than the conventional. Consumers with more health conscious are also more willing to pay extra for organic products. Truong et al. (2012) report that consumers' willingness to buy positively depends on health and safety. Bryla (2016) also supports this finding and reports that the most important characteristic of organic food is its healthiness and safety. Further, most individuals perceive organic food much healthier than conventional food. Luczka-Bakula (2007) reports that most consumers perceive organic products as healthy, not containing chemicals, having high nutritional value and safety. Huber et al. (2012) also state that consumers perceive organic food as healthier than conventional food. Irene Goetzke and Spiller (2014) suggest that the desire for health and well-being is a strong driver in the food market, and health is an important motive for both functional and organic food consumption (also supported by Lockie et al. 2002; McEachern and Willock, 2004; Marian et al., 2014).

1.2.3.2.3. Quality

Quality is also assessed a driving force promoting organic product purchases. Grunert et al. (1993) conceptualize quality as a convenience, nutritiousness, luxury, naturalness in their food-related lifestyle model, and they assert that these product attributes play essential roles in predicting organic food beliefs. Further, Buder et al. (2014) conceptualize quality of the product as taste, consistency or appearance, and they report that quality is among the most important motives of organic product purchasing. Bryla (2016) reports that one of the most important features that motivate consumers to buy an organic product is its high quality. Achilleas and Anastasios (2008) also state that perceived quality is one of the key determinants of consumer willingness to pay a higher price for organic products. Kahl et al. (2012) assert that consumers purchase

organic food since they believe in the high quality of the product, and they are ready to pay a high premium for its quality. Gottschalk and Leistner (2013) assert that consumers have difficulty in thoroughly assessing the quality of food, and the respondents perceive higher quality of organic foods compared to its conventional alternative. McEachern and Willock (2004) emphasize quality standards and quality assurance of the production process referring to the reliance concerning the use of chemicals and standards of animal welfare.

1.2.3.2.4. Taste

Bryla (2016) reports that one of the most important features that motivate consumers to buy an organic produce is its natural taste. Also, traditional recipe, taste, and product uniqueness are stated among the most important determinants of origin food selection (Bryla, 2015). Organic food is also perceived as more nutritious and tastes better than conventional food (Dimitri and Dettmann, 2012; Hasselbach and Roosen, 2015). Marian and Thogersen (2013) also suggest that consumers' willingness to pay to an organic product is partly mediated through taste expectations. The finding that taste plays a significant role in consumer food preference is mainly supported by several researchers (McEachern and McClean, 2002; Lockie et al., 2002; McEachern and Willock, 2004; Lea and Worsey, 2005; Hjelmar, 2011; Gottschalk and Leistner, 2013; Irene Goetzke and Spiller, 2014; Marian et al., 2014).

1.2.4. Environment-Related Factors

Verhoef (2005) categorizes environmental concern, green behavior and perceived consumer effectiveness as environmental variables to represent environmental attitudes of individuals. Environmental knowledge is also included in this classification since it is highly related to green, ecological, and organic consumption.

1.2.4.1. Environmental Concern

The environmentally concerned and socially conscious consumers are started to appear in the late 1960s and early 1970s due to a general distrust in society, industry, modern technology, and oil crisis (Grunert and Juhl, 1995). Further, Crosby et al. (1981) assert that environmental deterioration attracts public attention to a considerable extent in the 1970s. He defines environmental concern as possessing a strong attitude towards the protection of the environment. Environmental concern is also defined as beliefs about humanity's ability to upset the balance of nature, the existence of limits to growth for human societies, and humanity's right to control the rest of nature (Dunlap and Van Liere, 1978). Environmental concern is also more comprehensively defined as the degree to which people are aware of problems regarding the environment and support efforts to solve them and/or indicate a willingness to contribute personally to their solution (Dunlap and Jones, 2002). Environmental concern is mostly linked with domains such as recycling, energy saving, buying environmentally friendly products or travel mode choice (Bamberg, 2003). For example, Chan (1999) demonstrates that Chinese consumers in urban areas are very concerned about environmental problems, and they are ready to pay 4.5 percent more for a green version of a product. Chan (2001) also asserts that the emotional attachment of Chinese consumers is strong towards ecological issues, which may encourage green marketers to find effective ways to convey the pro-environmental feelings of Chinese consumers into realized purchases. Schifferstein and Oude Ophuis (1998) also suggest that absence of chemicals, environment friendliness, and a better taste are the main reasons for buying organic foods. They also conclude that environmental concern is not a very strong motive as health concern for buying organic products. However, Bamberg (2003) asserts that this weak effect might be due to the investigation of the direct impact on the purchasing behavior. Instead, he questions whether the environmental concern is an indirect determinant of relevant behavior. When he includes environmental concern as an antecedent of the TPB variables, it is

found to affect intention or behavior indirectly. On the other hand, Kim and Choi (2005) define environmental concern as an attitude, and they investigate its effect on green purchase behavior within the value-attitude-behavior framework. Their results suggest that environmental concern is found to have a direct influence on green purchase behavior. In addition, Vindigni et al. (2002) state that environmental concern is a major determinant of buying organic food. Bryla (2016) also states that the ecological (environmentally friendly) character plays a key role in the process of organic food selection in Poland.

1.2.4.2. Green Behavior

Green behavior or environment-friendly behavior is believed to be an indicator of ecological or organic consumption behavior. Thogersen (1999) emphasizes that an individual who has already engaged in an environmentally friendly behavior is more likely to change the behavior in different domains. He demonstrates that a positive linkage exists between recycling and waste avoidance, which are parts of green behavior. Verhoef (2005) also suggests that consumers' green behavior in different domains affects organic meat consumption positively. More specifically, he shows that as parts of green behaviors, green energy consumption and garbage separation positively affect organic meat consumption choice.

1.2.4.3. Perceived Consumer Effectiveness

Perceived consumer effectiveness is conceptualized as a measure of the extent to which a respondent has a belief concerning that an individual is able to be effective for pollution abatement (Kinnear et al., 1974). More generally, it is defined as the extent to which the consumer believes that an individual's attempt can make a difference. It is also asserted that different from the ecological attitude and environmental concern, both separate and joint effects of perceived consumer effectiveness should be investigated on individual and collective ecological actions. Perceived consumer effectiveness both separately and

combining with environmental concern is suggested to provide positive support to pro-environmental behaviors (Ellen et al., 1991). Previous studies have considered perceived consumer effectiveness as a part of attitude while recent studies indicate that attitude and perceived consumer effectiveness should be modeled as separate constructs in predicting environmentally conscious behavior (Berger and Corbin, 1992). They also suggest that as well as being perceived consumer effectiveness is a direct predictor of behavior, it has also moderating role on behavior through attitudes (Berger and Corbin, 1992). They make an explanation of this subject with an example: When a group of individuals with high environmental concern believes that only big business, governments, or in general others can provide effective solutions to environmental problems, despite their attitude scores are high, their perceived consumer effectiveness scores are low, thus, they are less likely to take environmentally friendly actions. Pieters et al. (1998) also support this finding, and they suggest that if the consumers believe that they are not able to solve the environmental problem, they are less likely to engage in an environmentally friendly behavior.

Mostafa (2006) demonstrates that perceived consumer effectiveness is positively linked with consumers' intention to purchase green products for an Egypt sample. Lee and Holden (1999) conclude that perceived consumer effectiveness is a significant positive predictor of high-cost environmental behaviors while this is not valid for low-cost environmental behaviors. Verhoef (2005) also finds that perceived consumer effectiveness has a significant and positive impact on both choice and purchase frequency of organic meat. Thogersen (1999) states that the effect of perceived consumer effectiveness on environment-friendly packaging choice is mediated by personal norms. Kim and Choi (2005) also indicate that perceived consumer effectiveness has a direct and positive impact on green purchase behavior, and individuals with higher perceived consumer effectiveness scores are more likely to engage in the ecological behavior.

1.2.4.4. Environmental Knowledge

Environmental knowledge is identified as "general knowledge of facts, concepts, and relationships concerning the natural environment and its major ecosystems" (Fryxell and Lo, 2003). It also involves what people know about the environment, the significant relationships related to environmental aspects, and collective responsibilities that are necessary for sustainable development (Kaufmann et al., 2012). Two types of knowledge are suggested as abstract and concrete regarding environmental actions. Abstract knowledge is specified as the knowledge that is related to problems, causes, and solutions about environmental issues while concrete knowledge is specified as the behavioral knowledge that can be acted on (Schahn and Holzer, 1990). Further, Hines et al. (1987) report in their review study that abstract knowledge is superior in predicting environmental actions. From a different perspective, Grunert (1993) classifies knowledge as declarative and procedural. He defines declarative knowledge as semantic or episodic information which can be verbalized such as information concerning products, expected consequences of behavior, personal goals and values while procedural knowledge is defined as stored skills, motoric or perceptual, which cannot easily be verbalized. His findings reveal that procedural knowledge is an important aspect of food-related lifestyle.

There has been conducted several studies investigating the relationship between environmental knowledge and pro-environmental, ecological, green or organic purchasing behavior. For example, Grunert (1993) finds that there exists a significant positive linkage between environmental knowledge and organic food consumption behavior. Bamberg and Moser (2007) emphasize the role of awareness and knowledge about environmental problems as a major determinant that affects pro-environmental behavior indirectly through perceived behavioral control and attitude. Further, consumers who have more knowledge regarding the issues related to the environmental deterioration along with the advantages of using renewable energy are more likely to have positive attitudes toward renewable energy (Bang et al., 2000). Suki (2013) aims to examine the impacts

of environmental knowledge, healthy food and a healthy lifestyle on young consumers' ecological behavior. Findings from the study reveal that healthy way of life and environmental knowledge jointly affect young consumers' ecological behavior such as recycling and buying green products. Cheung et al. (2015) also find that organic food knowledge has a positive impact on consumers' attitude toward organic foods. D'Souza et al. (2006) touch on an important matter that consumers who purchase green products look for environmental information on labels. Fraj-Andres and Martinez-Salinas (2007) assert that the individuals' level of environmental knowledge has a moderating role in the relationships between attitudes and ecological behavior, which increases the efficiency of the relationship between them. Mostafa (2006) also states that environmental knowledge is positively related to consumers' intention to purchase green products.

1.2.5. Socio-demographic Factors

Socio-demographic characteristics of individuals are included in the TPB model as background factors that are believed to affect behavioral, normative and control beliefs. Further, in addition to the TPB, the influences of these characteristics on intention or behavior are examined within the scope of several models, and they are mostly used as control variables. Based on this, the impacts of socio-demographic factors have been widely investigated on organic product purchasing intention and behavior. Although some studies posit that socio-demographic characteristics have limited influence on organic food preferences (Gracia and de Magistris, 2007), and some others report that personal values are stronger predictors than socio-demographic factors on organic food purchases (Lea and Worsey, 2005; Worner and Meier-Ploeger, 1999), several studies have been conducted establishing significant relationships between them.

1.2.5.1. Age

Several studies have been conducted that investigating the influences of age on buying organic products, and controversial results have been reached. Stobbelaar et al. (2007) show that attitude and motivation differentiate between adult consumers and school children towards organic food. While adolescents consider animal welfare at most, they do not purchase organic food since they do not like its taste. However, the most important motive for adults to buy organic food is found as its taste. Also, older respondents are less likely to place environmental or ethical influences as the main motivations for buying organic dairy products (McEachern and McClean, 2002). Younger people are more likely to believe that organic food is subject to more strict controls, looks better, is more environmentally friendly and arouses more trust, while older people state that organic food is more expensive and tastier than conventional food (Bryla, 2016). Older respondents report that they purchase more of sustainably produced foods than younger respondents, and they are more likely to buy these products in the future (Robinson and Smith, 2002).

In addition, individuals whose ages are between 45-54 are most tend to purchase organic vegetables (Mintel, 2000), the individuals whose ages are between 18-25 have positive attitude towards purchasing organic products at most, and they are more likely to buy an organic product for the next time (Magnusson et al., 2001).

On the contrary, there have been conducted some studies which age has no impact or just a small impact on organic food buying. Although Magnusson et al. (2001) assert that individuals whose ages are between 18-25 have a positive attitude towards purchasing organic products at most, no significant differences are found between age groups in terms of purchase frequency. Lockie et al. (2004) also state that increasing age has a small negative influence on growing rates of organic consumption.

1.2.5.2. Gender

Gender differences have been mostly investigated on organic product purchasing behavior. In general, women are expected to be more likely to buy these types of products. One possible reason might be that with mothering instinct, they are willing to feed their children with more healthy food. Focus group data indicate that women have a higher responsibility for feeding their children, and they are more concerned about what their children eat than what they eat themselves (Lockie et al., 2002).

Attitudes towards buying organic products generally seem to be higher in female consumers than males. Stobbelaar et al. (2007) examine the adolescents' attitudes towards organic food, and they find that nutritional value, animal and environmental friendliness of the products are more important for girls than boys. However, their responses giving the statements about organic products indicate that there is only a slight difference between girls and boys. Gotschi et al. (2007) also assert that adolescent girls are more tend to have a positive attitude toward organic products, and organic products are much preferable by girls than boys.

Lea and Worsey (2005) demonstrate that women are more favorable toward organic food than men, and women report that they are more agreeable that organic food is more nutritional than conventional food. Further, gender is found as a major determinant of commitment to the consumption of organic food, and women are found to be more likely to consume organic food (Lockie et al., 2004). McEachern and McClean (2002) support this finding by suggesting that females purchase organic produce more than males. Women think that organic food has better quality, is healthier, arouses more trust and is subject to more strict controls, and they have higher propensity to buy organic food (Bryla, 2016).

An interesting finding from the study of Aertens et al. (2011) suggests while female gender has a significantly positive impact on attitude towards

organic vegetables, it does not have any significant effect on the likelihood of actual organic vegetable consumption.

However, opposing views also exist asserting that no significant differences are found between women and men (Magnusson et al., 2001). Robinson and Smith (2002) suggest that although females have more supportive attitudes towards sustainably produced food than males, gender cannot found to be related to past purchases and intention to buy these foods.

1.2.5.3. Family Income

Organic food purchasing is generally associated with income because individuals find organic products more expensive. Gracia and de Magistris (2007) conclude that income affects organic product purchasing positively. Several studies support this finding, and they suggest that income plays a significant positive role in explaining organic product purchases (Fotopoulos and Krystallis, 2002b; Hill and Lynchehaun, 2002; Tsakiridou et al., 2006). Family income is also found to have a moderating effect on the relationship between green food consumption intention and behavior (Zhu et al., 2013).

On the opposite side, Lockie et al. (2004) assert that income has only a slight impact on the level of organic food consumption. Bryla (2016) also suggests that income is not a primary determinant of attitudes toward organic food. Individuals who have lower income believe that organic food is more environmentally friendly and is subject to more strict controls, while individuals with higher income believe that organic food is more expensive and tastier than conventional food. He further reports that high quality and healthiness are primary reasons for both types of individuals.

1.2.5.4. Family Structure

Family structure is also one of the important characteristics determining the tendency to buy organic products. Generally, it is expected that families with children are more likely to buy organic products. Riefer and Hamm (2008) give

a deeper understanding of organic food consumption in families by examining the theoretical concept of the family cycle specific to organic food expenditures, and they show to what extent organic food consumption in families underlies changes in these expenditures. They also investigate how the casual conditions for pregnancy, the feeding of babies with complementary food, children's adolescence, and a new partner are associated with organic food expenditures based on qualitative interviews. They suggest that mothers change their dietary habits after having a baby and they start to buy organic products with the mothering instinct.

Further, pregnant women and mothers of young children report that they increase their organic food consumption since they perceive organic food healthier and fewer residues of chemical treatments. On the other hand, mothers of juvenile children state that their organic food consumption decreases since the juvenile children may take their own decisions, and their food choices may be different from their parents.

In addition, the number of children in the household is found to play an important role in organic purchasing behavior. The findings demonstrate that the families that have children are more tend to purchase organic products (McEachern and Willock, 2004; Freyer and Haberkorn; 2008; Yue et al., 2008). Aertens et al. (2011) suggest that the likelihood of consuming organic vegetables is significantly and positively influenced by the presence of children in the household. Robinson and Smith (2002) state that while married couples are more tend to buy sustainably produced food in the past, and intend to buy in the future, single people feel more confident in their ability to buy these products.

Contrary to the several findings, Magnusson et al. (2001) assert that no significant differences are found between those with and those without children in terms of organic food buying behavior.

1.2.5.5. Education Level

Stobbelaar et al. (2007) assert that higher educated individuals think that organic foods are more animal-friendly, environment-friendly, healthy, not expensive and nice, and they have more positive attitudes than lower educated counterparts. Also, a positive relationship is found between education level and organic product purchasing behavior (Jolly, 1991). Bryla (2016) reports that better-educated people mostly respond that organic food is more expensive and healthier while low educated respondents mostly report that organic food arouses a feeling of trust more and they are ready to pay a higher price. Zhu et al. (2013) also suggest that education plays a mediating role in green food consumption intention, which implies that higher educated people are more likely to consume green food.

On the other hand, Lockie et al. (2004) find that the increasing level of education has minor negative effects on rates of organic consumption. Thompson and Kidwell (1998) also find a negative relationship between education level and organic product purchasing behavior.

Magnusson et al. (2001) assert that no significant differences are found between educational groups.

1.3. The Model and Hypotheses Development

The Theory of Planned Behavior (TPB) is an extended form of the Theory of Reasoned Action (TRA) that aims to explain human behavior. In this regard, initially, the antecedent theory will be discussed. The TRA (Fishbein and Ajzen, 1975) asserts that human behavior is driven by behavioral intention which is a function of the individuals' attitude toward that behavior and their subjective norms. Fishbein and Ajzen (1975) describe the attitude toward behavior as the degree of positive or negative emotions of individuals regarding that behavior. This attitude is determined via an individual's evaluation of consequences as well as the desirability of these consequences about the behavior. Subjective norm is described as the perceptions of individuals regarding whether other

people think he/she should engage in that behavior. Thus, attitude toward the behavior and the subjective norms together compose behavioral intention which is an antecedent of the actual behavior.

Even though being a well-established model, the TRA also has some limitations. One of the main limitations of the original model is that people have incomplete volitional control. More specifically, in the TRA, the central factor is the intention to perform a specific behavior. Intentions are assumed to capture the motivational factors that affect the behavior. Further, they indicate how hard people are willing to try and how much they are planning to make an effort to perform the behavior. In general, as the intention is stronger to engage in a behavior, the likelihood of the performance will be higher. However, behavioral intention can be meaningful to predict the behavior only if the behavior in question is under volitional control, which means performing the behavior should depend on the will of the individual.

As long as individuals have the necessary opportunities and resources, and they have the intention to perform the behavior, behavioral achievement can be reached (Ajzen, 1991). Thus, behavioral achievement can be seen to depend on both intention and behavioral control, which needs to be revised the original model, and therefore, the extended version of the TRA defined as the Theory of Planned Behavior was developed (Ajzen, 1991) to deeply understand human behavior. The TPB can predict and explain an individual's behavior when the behavior is intentional. Thus, this model gives a better insight into the linkage between intention and behavior. According to this, behavioral intention can be defined as an intention to try performing a particular behavior (Ajzen, 1985). Intentions can only be expected to predict a person's attempt to perform a behavior, but not necessarily its actual performance. If the intention measure cannot predict the actual behavior, it might change after it is evaluated. Thus, the central factor in the TPB becomes the intention to perform a given behavior. The intention is assumed to capture the motivational factors that might affect a behavior, and it indicates how hard people are willing to make an effort to

perform the behavior. Generally, it is accepted that the stronger the intention to engage in a behavior, the more likely its performance should be. However, behavioral intention can predict the actual behavior only if the behavior in question is under volitional control (Ajzen, 1991).

Along with a desire to perform or not perform a behavior, performance depends on some non-motivational factors such as time, skill, and money, which express individuals' actual control over the behavior. If an individual has sufficient opportunities and resources and intends to perform the behavior, he or she can realize it. Thus, behavioral achievement depends jointly on motivation (intention) and ability (behavioral control). Behavioral control has both a direct influence on actual behavior, and it also affects actual behavior via intention. In consequence, the perceived behavioral control component is included in the model as well as attitude and subjective norms in predicting behavior as illustrated in Figure 1;
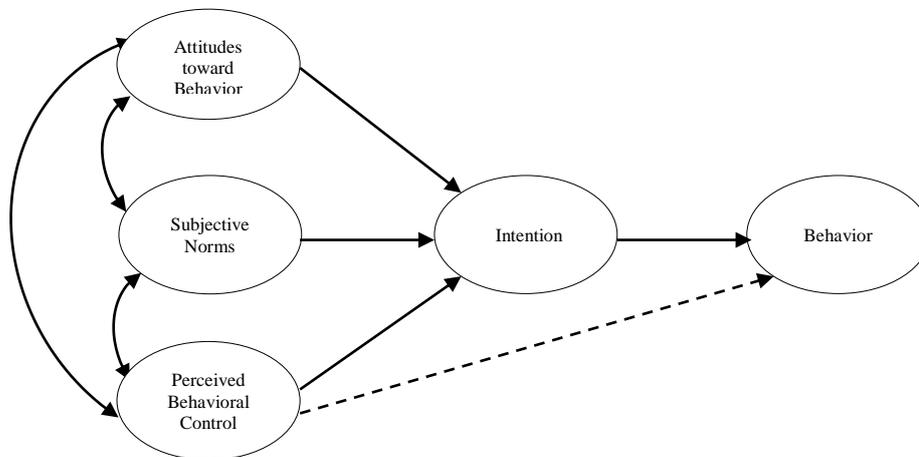
Figure 1. The Theory of Planned Behavior (Ajzen, 1991)

According to the TPB, perceived behavioral control and behavioral intention should be used together to predict behavioral achievement, which has two rationales. First, when the intention is held to be constant, the effort

expended to perform the behavior to reach a successful conclusion is likely to increase with perceived behavioral control. For example, although two individuals that have equally strong intentions to learn ski and both try to do, the individual who is more confident about doing that activity is more likely to exert effort than the individual who has doubts from own ability. The second rationale in explaining the direct linkage between perceived behavioral control and behavioral achievement is that perceived behavioral control can generally be used as a measure of actual control, but this depends on the accuracy of the perceptions. When an individual has little information regarding the behavior, or requirements and available resources change in performing the behavior, or some uncommon elements are in question, behavioral control may not be realistic anymore, which may result in inaccurate behavioral predictions. However, as long as perceived behavioral control is realistic, it can be used in predicting behavior and gives successful results.

Perceived behavioral control is defined as the people's perception of the ease or difficulty of performing the behavior of interest. While locus of control is a generalized expectancy that remains stable across situations and forms of action, perceived behavioral control can change across situations and actions. Thus, individuals may generally believe that the realized outcomes are determined by their own behavior (internal locus of control), but at the same time, they may also believe that the probability of becoming a commercial airplane pilot is very low, which indicates low perceived behavioral control (Ajzen, 1991).

The TPB posits that attitudes toward the behavior, subjective norms and perceived behavioral control are mainly determined by behavioral beliefs, normative beliefs and control beliefs, respectively. Also, the model makes a clear differentiation among these constructs as indicated in Figure 2.
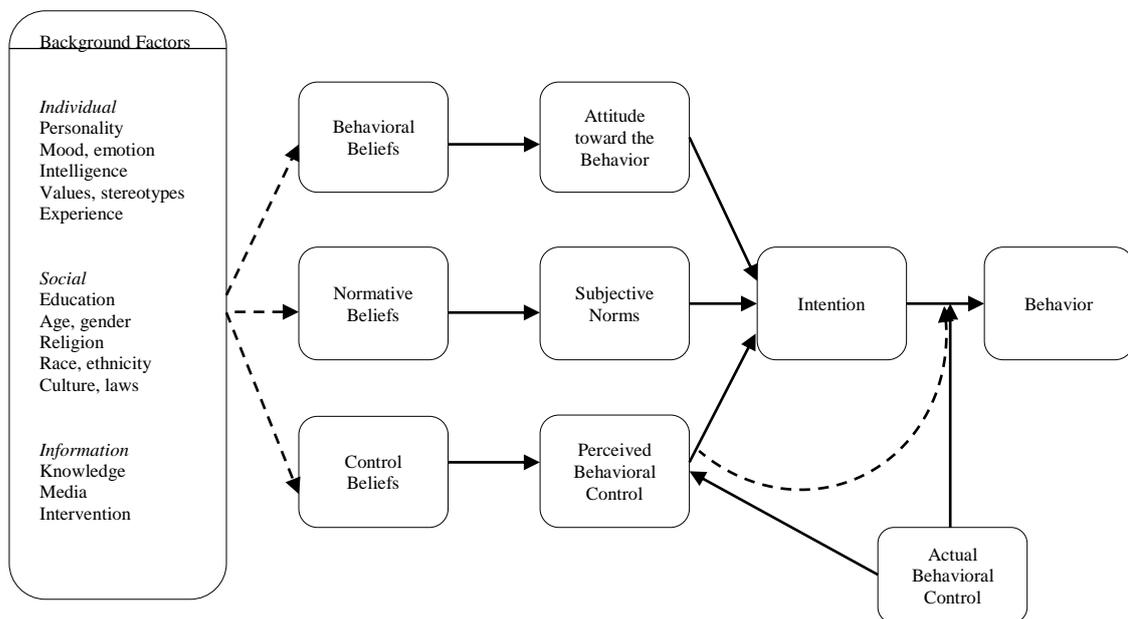
Figure 2. Extended Theory of Planned Behavior (Ajzen and Fishbein, 2005)

Behavioral beliefs are the subjective probabilities that the behavior will produce a given outcome. These beliefs provide positive or negative evaluations of individuals about performing the behavior, which determines attitude toward the behavior. In other words, attitude toward the behavior is determined by accessible beliefs and the subjective values of the expected outcomes. Thus, attitude toward the behavior (A_B) is determined by beliefs about the outcome of the behavior (b) and the subjective evaluation of the expected outcome (e) as shown in the following equation.

$$A_B = \sum_{i=1}^{n} b_i \, e_i$$

Normative beliefs refer to the perceived behavioral expectations of such important referent individuals or groups as the person's spouse, family, friends, and other people around him or her. The strength of normative beliefs of referent

groups (n) along with the motivation to comply with the different referents (m) determines the prevailing subjective norm as indicated in the following equation.

$$SN = \sum_{i=1}^{n} n_i\, m_i$$

Control beliefs refer to the available factors that may have an influence on the performance of the behavior. Perceived behavioral control is determined by the total set of accessible control beliefs. Perceived behavioral control (control beliefs & influence of control beliefs) has two characteristics: Individuals' ability to control the behavior and individual's confidence to be able to perform or not to perform the behavior. Specifically, the strength of each control belief (c) is weighted by the perceived power (p) of the control factor, and the products are aggregated, as indicated in the following equation. To the extent that it is an accurate reflection of actual behavioral control, perceived behavioral control can, along with intention, be used to predict behavior.

$$PBC = \sum_{i=1}^{n} c_i p_i$$

Last, intentions are expected to lead to the performance of the behavior to the extent that people are in fact capable of doing so, which means they have actual control over the behavior. Actual behavioral control refers to the extent to which a person has the skills, resources, and other prerequisites needed to perform a given behavior, so it is expected to moderate the effect of intention on behavior. However, it might be difficult to measure actual behavioral control in applications, so perceived behavioral control is generally preferred to use as a proxy for actual control under the assumption that perceptions of control represent actual control considerably well (Ajzen, 2015).

As well as the main constructs of the theory itself, the TPB incorporates the influences of other factors such as personality traits, general attitudes, life values, intelligence, and emotions in individual level; demographic characteristics, culture, and law in social level; knowledge, media, and

intervention in information level. These factors are considered as background factors which have indirect influences on intention and behavior, through behavioral, normative, and control beliefs.

In sum, the intention is the immediate antecedent of actual behavior. Also, perceived behavioral control has both a direct influence on actual behavior and it mediates the effect of intention on actual behavior. Behavioral, normative and control beliefs are underlying factors in predicting the behavior, and these beliefs may change as a function of a wide range of background factors (Ajzen and Fishbein, 2005).

The TPB is mostly applied to consumer behavior studies. Two major conceptual and research paradigms in consumer behavior are discussed namely, behavioral decision theory and the theories of reasoned action and planned behavior. Although behavioral decision theories assume that individuals are rational in their decisions, there has been made a great discussion about individuals' decisions can be biased because of their limited cognitive capacity and limited knowledge, which expresses bounded rationality notion of Simon (1955, 1956). In a similar vein, the TPB also assumes that individuals are not rational in their decision-making processes. Since beliefs shape individuals' behaviors, they may include inaccuracies, biases, and irrationalities (Ajzen, 2008).

1.3.1. The Extended Theory of Planned Behavior

The present study is an attempt to comprehensively examine organic food purchasing behavior of individuals by using an extended version of the Theory of Planned Behavior.

In this direction, attitudes toward organic food purchasing, subjective norms and perceived behavioral control are expected to explain behavioral intention which is a proxy for actual behavior which is organic food purchasing behavior. Also, these dimensions are determined by behavioral, normative and control beliefs of individuals, and these beliefs are expected to be determined by

64

background factors. In the scope of the current study, individual and situational factors are defined as health consciousness, food safety concern and trust; socio-demographic factors are defined as gender, age, family income, family structure, and education level of individuals, and individuals' knowledge regarding organic foods is elicited in information level. Last, direct impacts of perceived behavioral control and trust are examined on actual behavior.

The current study aims to contribute to the theory of Ajzen and Fishbein (2005) by incorporating food safety concern, health consciousness, trust, and organic knowledge as background factors for organic food purchasing behavior of individuals. Thus, the predictive ability of the extended model will be aimed to be improved. Further, the direct impact of trust on actual behavior is examined to fill the intention-behavior gap. Since the TPB focuses mainly on the motivational processes, which determines the formation of a behavioral intention and less on the volitional processes, we extend the model by investigating the role of trust considering volitional processes determining how behavioral intentions are transformed into actual behavior (Conner and Armitage, 1998).

Thus, the model will take into account both motivational and volitional influences by including the trust as a separate construct. Last, along with the latent variable model, the observed variable model is also used to get a better understanding of individuals' organic food purchasing behavior, and socio-demographic characteristics are included in the model. The extended model is portrayed in Figure 3 as follows;
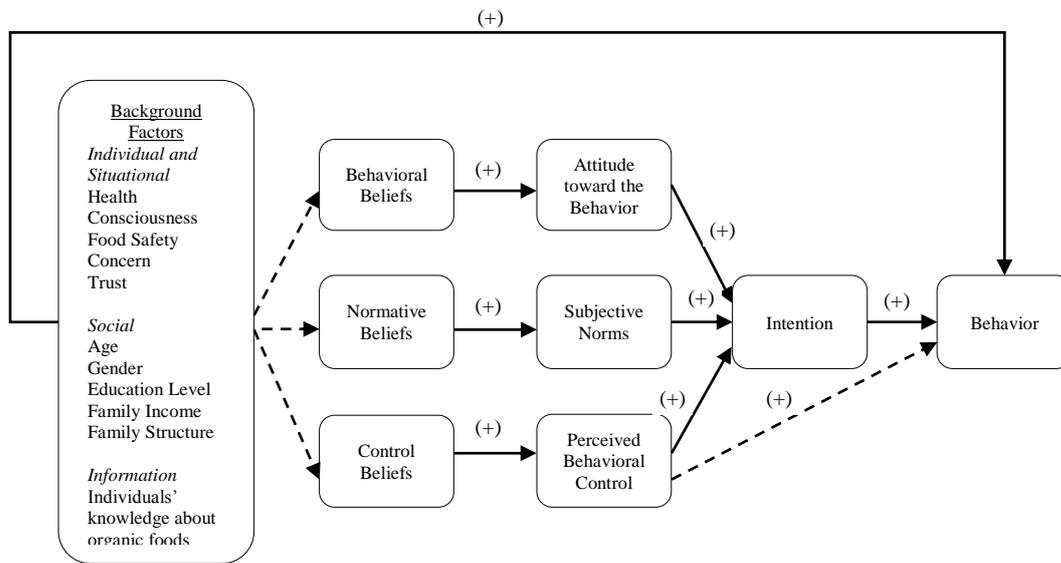
Figure 3. The Extended Theory of Planned Behavior

1.3.2. The Hypothesized Model and Hypotheses Development

As the original Theory of Planned Behavior suggested, attitudes toward organic food purchasing, subjective norms and perceived behavioral control are expected to explain behavioral intention positively. Further, perceived behavioral control and intention are supposed to have positive impacts on actual organic food purchasing behavior.

H₁(a) = Consumer attitude is positively associated with behavioral intention to buy organic food.

H₁(b) = Subjective norm is positively associated with behavioral intention to buy organic food.

H₁(c) = Perceived behavioral control is positively associated with behavioral intention to buy organic food.

66

H₁(d) = Perceived behavioral control is positively associated with actual organic food purchasing behavior.

H₁(e) = Behavioral intention is positively associated with actual organic food purchasing behavior.

The background factors that are thought to have significant impacts on organic food purchasing behavior are preferred based on the studies in the related literature. Food safety concern is mostly found as one of the main driving forces of organic food purchasing behavior (Harper and Makatouni, 2002; Botonaki et al., 2006). Food safety is defined as consumers' concern regarding residues in food caused by chemical sprays, fertilizers, artificial additives, and preservatives, which might be linked to farming methods (Yee et al., 2005). Generally, food safety concern in organic food context is conceptualized as pesticide residues, hormones and natural toxins (Canavari et al., 2002; Honkanen et al., 2006). Perceived food safety risks are found to differ between organic and conventional food buyers especially for pesticide-related risks, and organic buyers seem to perceive higher pesticide-residue risk than conventional buyers for conventionally grown food (Williams and Hammit, 2000; Hammit, 1990). They also show that organic food buyers are ready to pay higher prices than conventional buyers to eliminate food safety risk. Michaelidou and Hassan (2008) claim that food safety might be an important indicator of attitude and purchase intention to organic food and food safety is found as one of the most important predictors of attitude toward organic food. As previous literature highlighted, food safety concern might be an essential predictor of organic food buying, and it might be inter-correlated with other constructs in the model. Therefore, we incorporate food safety concern in our model.

H₂(a) = Food safety concern is positively associated with the attitude towards organic food purchasing behavior.

H₂(b) = Food safety concern is positively associated with subjective norms.

H₂(c) = Food safety concern is positively associated with the perceived behavioral control.

Further, health consciousness assesses the degree of readiness to undertake health actions (Becker and Maiman, 1975; Becker et al., 1977), and it is considered as a quite significant psychographic determinant in predicting a variety of health attitudes and behaviors (Hong, 2009). Michaelidou and Hassan (2008) assert that health-conscious individuals are more aware and concerned about their state of well-being, and are more motivated to improve and maintain their health and quality of life. Several studies have revealed that health is the primary motive for the purchase of organic food (Grankvist and Biel, 2001; Lockie et al., 2002; Harper and Makatouni, 2002; Yiridoe et al., 2005). The health concern is also found to have a direct link with organic food purchasing decision (Padel and Foster, 2005; Chen, 2009). Further, health consciousness has been found as a significant determinant in predicting attitude, intention, and purchase of organic foods (Magnusson et al., 2003, 2001; Tsakiridou et al., 2009; Hsu et al., 2016). The organic food buyers appear to be health conscious, and they feel responsible for their own health, and they think that food intake has an influence on their health. Further, organic food buyers appreciate safe, healthy and natural foods, and they are more willing to buy organic foods Schifferstein and Oude Ophuis, 1998). Consumers with more health conscious are also more willing to pay extra for organic products (Botonaki et al., 2006).

In this sense, we believe that health-consciousness is one of the significant determinants of attitude toward organic food, and in turn, organic food buying decision. Thus, we measure health consciousness with three dimensions, namely, self-health awareness, personal responsibility, and health motivation (Hong, 2009). This scale is formed with the purpose of bringing a different approach to diverse health-related issues. This approach attempts to

directly measure the underlying psychological traits of health-consciousness, which has greater power in predicting various health behavior (Hong, 2009).

H3(a)= Health consciousness is positively associated with the attitude towards organic food purchasing behavior.

H3(b)= Health consciousness is positively associated with subjective norms.

H3(c)= Health consciousness is positively associated with the perceived behavioral control.

Trust is defined as a psychological state comprising the intention to accept vulnerability based on positive expectations of the intentions or behaviors of another (Rousseau et al., 1998). Many consumers have a large amount of distrust in regulatory processes in buying organic products, and they are even skeptic about independent certifiers and the government's role. It is evident that current labeling schemes seem ineffective and might be confusing to most consumers (Aarset et al., 2004). Approximately half of the consumers have mistrust on organic labels (Lea and Worsey, 2005). Therefore, rather than labeling and certification system, it is crucial that consumers should believe that their producers and food suppliers operate by sustainable quality. Nuttavuthisit and Thogersen (2017) propose that trust has a considerable influence on organic food buying behavior by using the TPB framework. Since the TPB focuses mainly on the motivational processes, which determines the formation of a behavioral intention and less on the volitional processes, they extend the model by investigating the role of trust considering volitional processes determining how behavioral intentions are transformed into actual behavior (Conner and Armitage, 1998). Thus, the model could take into account both motivational and volitional influences by including the trust as a separate construct. Their findings reveal that trust is an important volition predictor in explaining green buying that

might fill the intention-behavior gap. Bonn et al. (2016) suggest that the relationships between consumer perceptions regarding sustainable practices conducted by organic wine retailers and behavioral intentions of consumers are moderated by trust, which implies that this moderating relationship has an effect on intention to buy organic wine. The present study also investigates the role of trust as a unique construct on organic food purchasing behavior.

H4(a) = Trust is positively associated with the attitude towards organic food purchasing behavior.

H4(b) = Trust is positively associated with subjective norms.

H4(c) = Trust is positively associated with the perceived behavioral control.

H4(d) = Trust is positively associated with actual behavior.

Organic food purchasing behavior is also associated with organic product knowledge of individuals. Gracia and de Magistris (2007) suggest that organic product knowledge is one of the main determinants of organic purchasing intention of individuals. Aertens et al. (2011) indicate that levels of objective and subjective knowledge regarding organic food increase, individuals have more positive attitudes toward organic food, and these two types of knowledge have positive impacts on organic consumption behavior. McEachern and McClean (2002) also assert that consumer knowledge and awareness play crucial roles in the development of the organic market. Botonaki et al. (2006) also support these findings and suggest that the low level of consumer awareness and knowledge about certification systems in organic products block the development of the organic market. In light of these findings, we include individuals' knowledge about organic products into the model.

H₅(a) = Knowledge is positively associated with the attitude toward organic food purchasing behavior.

H₅(b) = Knowledge is positively associated with subjective norms.

H₅(c) = Knowledge is positively associated with the perceived behavioral control.

1.4. Methodology

1.4.1. Questionnaire Design and Measurement

In the scope of the study, the Theory of Planned Behavior scale; health consciousness scale (Hong, 2009); trust scale (Holden, 1990); food-safety concern scale (Michaelidou and Hassan, 2008) are used. Further, socio-demographic characteristics (age, gender, family income, education level, family structure), and individuals' knowledge concerning organic products will be measured. The items are rated on a seven-point Likert scale (1=completely disagree; 7=completely agree).

The questionnaire consists of two parts. The first part comprises socio-demographic factors (age, gender, education level, family income, marital status, and family structure); food purchasing habits (supermarkets, hypermarkets, grocery stores, local markets, ecologic or organic farms); and their purchase frequency. The second part includes the items with seven-point Likert type scale from 1 (I completely disagree) to 7 (I completely agree), which measures attitudes, subjective norms, perceived behavioral control, intention, beliefs, trust, food-safety concern, health consciousness, organic knowledge.

1.4.1.1. The TPB Constructs

In this thesis, we examine individuals' organic food purchasing behavior by using the Theory of Planned Behavior approach, which provides us a conceptual framework. From this point of view, we adopt the constructs of the TPB to organic food purchasing behavior.

Attitude toward organic food purchasing behavior (measured with five items); subjective norms (measured with three items); perceived behavioral control (measured with five items); beliefs about outcomes of consuming organic food and individuals' evaluations of those outcomes (measured with two items); beliefs about expectations of important referent individuals or groups (measured with two items); individuals' ability to control the organic food purchasing behavior and individual's confidence to be able to perform or not to perform this behavior (measured with two items); behavioral intention (measured with two items) by using a seven-point Likert scale ranging from 1=I completely agree to 7=I completely disagree as illustrated in Table 1. Also, behavior is measured whether individuals are going to purchase organic food or not in a near future are elicited.

These items are formulated based on Ajzen's (2006) questionnaire construction manual. Also, we benefit from the questionnaire of Al-Swidi et al. (2014) when constructing the questionnaire. Table 1 illustrates the direct measures of attitude toward the behavior, subjective norms, and perceived behavioral control. Further, it shows antecedents of these direct measures which are behavioral beliefs, normative beliefs, and control beliefs. Finally, behavioral intention as a proxy of actual organic purchasing behavior is elicited, and last, the actual behavior is asked. The construct items of the TPB is portrayed in Table 1 as follows;

Table 1. The Theory of Planned Behavior Items

Codes	Items	Constructs
ATT1	Organic food consumption is better for my health	
ATT2	Organic food consumption prevents pollution of underground water and soil	
ATT3	Organic food consumption decreases harmful gas emissions in the atmosphere	Attitudes
ATT4	Organic food is tastier than others	
ATT5	Organic food is more nutritious than others	
SN1	I think that organic food consumption becomes widespread among people around me	
SN2	Individuals around me (family, friends, significant other) encourage me to consume organic food	Subjective Norms
SN3	Individuals around me (family, friends, significant other) provide me necessary support for organic consumption (money, time, knowledge)	
PBC1	Organic food purchasing is completely under my control	
PBC2	Organic food purchasing is easy for me	
PBC3	I have enough financial capability to purchase organic food	Perceived Behavioral Control
PBC4	I have enough time to purchase organic food	
PBC5	I have enough knowledge and awareness about where organic food is purchased	
b1	I think that organic food consumption is better for my health	Behavioral Beliefs
e1	It is good that organic food consumption is better for my health	
n1	People around me think that I should consume organic food	Normative Beliefs
m1	When it comes to matters of my health, I want to do what people around me think I should do	
c1	Low availability of organic food makes my organic food consumption difficult (R)	Control Beliefs
p1	The possibility of difficulty to access organic food is high (R)	
INT1	I think consuming organic food in the near future	Behavioral Intention
INT2	I would like to consume organic food regularly in the near future	
B	I have been purchasing organic foods at regular basis	Behavior

1.4.1.2. Health Consciousness Scale

Health consciousness assesses the degree of readiness to undertake health actions (Becker and Maiman, 1975; Becker et al., 1977), and it is considered as a quite significant psychographic determinant in predicting a variety of health attitudes and behaviors (Hong, 2009). Michaelidou and Hassan (2008) assert that health-conscious individuals are more aware and concerned about their state of well-being, and are more motivated to improve and maintain their health and quality of life.

Several studies have revealed that health is the primary motive for the purchase of organic food (Grankvist and Biel, 2001; Lockie et al., 2002; Harper and Makatouni, 2002; Yiridoe et al., 2005). The health concern is also found to have a direct link with organic food purchasing decision (Padel and Foster, 2005; Chen, 2009).

Further, health consciousness has been found as a significant determinant in predicting attitude, intention, and purchase of organic foods (Magnusson et al., 2003, 2001; Tsakiridou et al., 2009; Hsu et al., 2016).

The organic food buyers appear to be health conscious, and they feel responsible for their own health, and they think that food intake has an influence on their health. Further, organic food buyers appreciate safe, healthy and natural foods, and they are more willing to buy organic foods (Schifferstein and Oude Ophuis, 1998). Consumers with more health conscious are also more willing to pay extra for organic products (Botonaki et al., 2006).

In this sense, we believe that health-consciousness is one of the significant determinants of attitude toward organic food, and in turn, organic food buying decision. Thus, we benefit from the health consciousness scale measured with three dimensions, namely, self-health awareness, personal responsibility, and health motivation (Hong, 2009). This scale is formed with the purpose of bringing a different approach to diverse health-related issues. This approach attempts to directly measure the underlying psychological traits of health consciousness, which has greater power in predicting various health behavior (Hong, 2009).

Table 2. Health Consciousness Scale

Code	Item	Construct
HC1	I'm very self-conscious about my health	Self-health
HC2	I'm concerned about my health all the time	Awareness
HC3	I take responsibility for the state of my health	Personal
HC4	I only worry about my health when I get sick (R)	Responsibility
HC5	Living life without disease and illness is very important to me	
HC6	My health depends on how well I take care of myself	Health Motivation
HC7	Living life in the best possible health is very important to me	

1.4.1.3.Food Safety Concern Scale

Most researchers have found that food safety is one of the most important motives for organic food buying. Food safety is defined as consumers' concern regarding residues in food caused by chemical sprays, fertilizers, artificial additives, and preservatives, which might be linked to farming methods (Yee et al., 2005). Generally, food safety concern in organic food context is conceptualized as pesticide residues, hormones and natural toxins (Canavari et al., 2002; Honkanen et al., 2006). Perceived food safety risks are found to differ between organic and conventional food buyers especially for pesticide-related risks, and organic buyers seem to perceive higher pesticide-residue risk than conventional buyers for conventionally grown food (Williams and Hammit, 2000; Hammit, 1990). They also show that organic food buyers are ready to pay higher prices than conventional buyers to eliminate food safety risk. Michaelidou and Hassan (2008) claim that food safety might be an important indicator of attitude and purchase intention to organic food and food safety is found as one of the most important predictors of attitude toward organic food.

As previous literature highlighted, food safety concern might be an important predictor of organic food buying, and it might be inter-correlated with other constructs in the model. Therefore, we incorporate food safety concern in our model, and we measure it with a three-item scale adopted from Michaelidou and Hassan (2008).

Table 3. Food Safety Concern Scale

Code	Item
FSC1	Nowadays most foods contain residues from chemical sprays and fertilizers
FSC2	I am very concerned about the number of artificial additives and preservatives in food
FSC3	The quality and safety of meat nowadays concern me

1.4.1.4. Trust Scale

Trust is defined as a psychological state comprising the intention to accept vulnerability based on positive expectations of the intentions or behaviors of another (Rousseau et al., 1998). Many consumers have a large amount of distrust in regulatory processes in buying organic products, and they are even skeptic about independent certifiers and the government's role. It is evident that current labeling schemes seem ineffective and might be confusing to most consumers (Aarset et al., 2004). Approximately half of the consumers have mistrust on organic labels (Lea and Worsey, 2005). Therefore, rather than labeling and certification system, it is crucial that consumers should believe that their producers and food suppliers operate in accordance with sustainable quality. Nuttavuthisit and Thogersen (2017) propose that trust has a considerable influence on organic food buying behavior by using the TPB framework. Since the TPB focuses mainly on the motivational processes, which determines the formation of a behavioral intention and less on the volitional processes, they extend the model by investigating the role of trust considering volitional processes determining how behavioral intentions are transformed into actual behavior (Conner and Armitage, 1998). Thus, the model could take into account both motivational and volitional influences by including the trust as a separate construct. Their findings reveal that trust is an important volition predictor in explaining green buying that might fill the intention-behavior gap.

Bonn et al. (2016) suggest that the relationships between consumer perceptions regarding sustainable practices conducted by organic wine retailers and behavioral intentions of consumers are moderated by trust, which implies that this moderating relationship has an effect on intention to buy organic wine.

The present study also investigates the role of trust as a unique construct on organic food purchasing behavior by using three-item trust scale adopted by Holden (1990).

Table 4. Trust Scale

Code	Item
TRS1	I trust organic food suppliers efforts and commitments for sustainable practices
TRS2	Organic food suppliers are reliable
TRS3	Organic food suppliers have standards regarding honesty and morality

1.4.1.5. Organic Knowledge Scale

Organic food purchasing behavior is also associated with organic product knowledge of individuals. Gracia and de Magistris (2007) suggest that organic product knowledge is one of the main determinants of organic purchasing intention of individuals. Aertens et al. (2011) suggest that as the levels of objective and subjective knowledge regarding organic food increase, individuals have more positive attitudes toward organic food, and these two types of knowledge have positive impacts on organic consumption behavior. McEachern and McClean (2002) also assert that consumer knowledge and awareness play crucial roles in the development of the organic market. Botonaki et al. (2006) also support these findings and suggest that the low level of consumer awareness and knowledge about certification systems in organic products block the development of the organic market. In the light of these findings, we include knowledge about organic products into the model, and the seven-point Likert scale is formed as follows;

Table 5. Organic Knowledge

Code	Item
OK1	Organic food consumption reduces the risk of chronicle and vascular diseases
OK2	Organic food consumption reduces the risk of certain types of cancers
OK3	Organic food consumption reduces the risk of hormonal disorder in children
OK4	Organic food consumption reduces the risk of learning disorder in children
OK5	Organic food consumption provides minerals and vitamins
OK6	Organic agriculture considers animal and plant health
OK7	Organic agriculture limits the usage of synthetic manure and hormone

1.4.1.6. Socio-Demographic Characteristics

The influences of socio-demographic characteristics on organic food purchasing behavior are commonly investigated by several researchers. Gender, family income, age, family structure, and education level are among the most used variables in predicting organic food purchasing behavior of individuals. The motives of buying organic foods and individuals' attitudes toward buying organic foods are found to vary across age groups (Stobbelaar et al., 2007; McEachern and McClean, 2002; Bryla, 2016; Robinson and Smith, 2002). Gender differences have also been mostly investigated on organic product purchasing behavior. Females are generally found to have more positive attitudes toward buying organic products, and they are more likely to purchase organic products than males (Stobbelaar et al., 2007; Lea and Worsey, 2005; Lockie et al., 2004; McEachern and McClean, 2002). Further, family income is generally found to be a significant determinant of organic product purchasing behavior (Fotopoulos and Krystallis, 2002b; Hill and Lynchehaun, 2002; Tsakiridou et al., 2006). Family structure also plays an important role in predicting organic product buying behavior. There is ample evidence that mothers change their dietary habits after having a baby and start to consume more of organic products with the mothering instinct (Reifer and Hamm, 2008). Besides, families with children are more likely to purchase organic products (McEachern and Willock, 2004; Freyer and Haberkorn; 2008; Yue et al., 2008). The effect of education level on buying organic products is a controversial issue. While some suggest that higher educated people believe that organic foods are more animal and environment friendly, healthy, not expensive and nice, and they have more positive attitudes toward buying organic foods than lower educated people (Stobbelaar et al., 2007), others find negative linkages between education level and organic food purchases (Lockie et al., 2004; Thompson and Kidwell, 1998), and some cannot find any significant relationship between them (Magnusson et al., 2001). In our study, socio-demographic characteristics of participants are measured that is presented in Table 6.

Table 6. Socio-Demographic Characteristics and Shopping Habits

Variable	Measurement
Age	In years
Gender	1=female 0=male
Family income	<3000TL 3000TL-6000TL 6000TL-9000TL >9000TL
Education level	High school Associate Degree Undergraduate Graduate Others
Number of children	Open-ended question
Number of people in household	Open-ended question
Food purchase behavior	I purchase at specialty shops I purchase at supermarkets I purchase at marketplaces I purchase at organic and ecologic farms and markets
The frequency of food shopping in a month	never once a month once a week more than once a week

1.4.2. Pilot Study

A pilot study was conducted to understand individuals' perceptions of organic food, and their purchasing habits. A questionnaire was employed to the academic staff, administrative staff, and techno polis personnel of the Middle East Technical University (METU) by obtaining the ethical approval of the METU Human Research Ethics Committee, and 51 people participated in the web-based survey. Most of the participants were academics (66.7 percent), and the percentage of staff (17.6 percent) and techno polis personal (15.7 percent) was quite similar. While 49 percent of the participants were female, 51 percent of the participants were male, and mean age of them was 40.6.

Since this study aims to find the underlying reasons behind organic food purchasing, it is important to reach people familiar with the organic food, so the sample of the pilot study was chosen from the METU members. These people are more likely to be environmentally friendly, socially aware, and health-conscious, which reflects specific characteristics of typical organic food buyers.

At the very beginning of the questionnaire, the participants are asked a series of prescreened questions to determine whether they are food-purchase decision makers or not. Besides, 67.2 percent of the participants purchased organic food, and dairy products, egg, chicken, olive, certain fruit, and vegetable were among the most reported organic products that they purchased.

Then, they were asked whether they have heard organic food concept before, and all of the participants stated that they were aware of this concept. Next, they were asked to define organic food concept as an open-ended question, and 88 percent of the participants responded to this question. Further, they were asked "what comes to your mind when you hear the organic term?", and again 88 percent of the participants responded the question. These two questions are essential in understanding the participants' perceptions of organic food. Organic food was mostly defined as natural, chemical-free, hormone-free, non-additive, and pesticide-free.

Further, organic food means that it does not include agricultural chemicals, synthetic manure, and it is not genetically modified. Organic agriculture is defined as the agricultural activities done with natural seeds by the participants. In addition, they considerably perceive organic foods as healthier, but expensive at the same time. They stated that they were not sure about the information on the organic labels. Some of them are skeptic about the reliability of organic certification system.

1.4.3. Sampling and Data Collection

The results of the pilot study imply that organic concept defines organic activities in which agricultural chemicals, synthetic manure, hormone, and

fertilizers are mainly rejected. It also describes the agricultural activities with natural seeds. Therefore, this study targets individuals who adopt the above definition of organic food. Further, the sample of the current study should consist of food-purchase decision makers. Therefore, data will be collected via a web-based survey conducted to the customers of the farm of Ipek Hanim which is a local farm in Nazilli, Turkey. The owner of the farm is Pinar Kaftancioglu, and in her farm, she engages in agricultural activities and produces natural food. She does not believe in obtaining organic certification, but the products that she produces are grown and processed in traditional ways. This understanding is also compatible with organic food perception of our pilot sample. Therefore, the term "organic" is defined as the activities in which agricultural chemicals, synthetic manure, hormone, and fertilizers are rejected and the agricultural activities with natural seeds.

The link of the survey has been sent out to the customers, and 594 people responded to the questionnaire within two weeks. The sample includes 523 female and 71 male respondents, and the mean age of the respondents is 42.31 with a range of 23-82 years. Family income of more than half (54.9 percent) of the sample is higher than 9,000TL. The proportion of married respondents is 84.7 percent while 15.3 percent is single. 53.9 percent of the respondents have a bachelor's degree, 25.9 percent of the respondents have a master's degree, and 9.8 percent have a doctorate degree. While the average number of children that the respondents have is 1.10, mean number of people in the household is 3.06. The proportion of people who go food shopping once a week is 41.2 percent while the percentage of going food shopping more than once a week is 55.8. Table 7 illustrates the demographic characteristics of the respondents in more detail.

Table 7. Demographic Characteristics of the Respondents

Variable	Definition	Mean	Standard Error of Mean
Gender	female=1; male=2	1.12	0.013
Age	age in years	42.31	0.396
Family Income (Turkish Lira)	less than 3,000TL=1; 3,001TL-6,000TL=2; 6,001TL-9,000TL=3; more than 9,000TL=4	3.31	0.036
Education Level	elementary school=1; middle school=2; high school=3; associate's degree=4; bachelor's degree=5; master's degree=6; doctorate=7	5.30	0.037
Marital Status	married=1; not married=2	1.15	0.015
Number of Children	open ended	1.10	0.032
Number of People in Household	open ended	3.06	0.041
Food shopping frequency	never=1; once in a month=2; once in a week=3; more than once in a week=4	3.52	0.023

Full Sample =594

1.5. Analyses

1.5.1. Method

Data are aimed to be analyzed through structural equation modeling (SEM) with EQS 6 (Equations; Bentler, 1994-2011) software. SEM is a confirmatory approach rather than exploratory testing the hypothesized model in a simultaneous analysis of the entire system of variables (Byrne, 1994). The variables used in the scope of these models cannot be directly observed, and they are named latent variables represented by a large number of variables. SEM gathers the regression models revealing the causal relationships among variables, and the factor analysis examining latent factor structures under a single roof (Sümer, 2000). Thus, the hypothesized model can enable us to test statistically in a simultaneous analysis of the entire system of variables to show to what extent it is compatible with the data (Byrne, 1994). Further, SEM provides a series of advantages to the researchers. First, it presents a confirmatory approach to the data analysis rather than exploratory, and in turn,

it is used for inferential purposes rather than descriptive. Second, SEM is mostly preferred due to obtaining very close values to the population parameters by minimizing the measurement error (Sümer, 2000). Third, the SEM approach incorporates both observed and unobserved variables different from previous multivariate methods which are only based on observed variables. Last, SEM methodology also reveals indirect effects between variables as well as point estimations (Byrne, 1994). Due to those features of the SEM approach, it becomes a commonly used methodology in several research areas.

In behavioral studies, researchers mostly try to measure theoretical constructs that cannot be directly observed. These unobserved measures are called latent variables which require being linked to observed variables to be able to be measured. These latent variables might be both exogenous and endogenous: Exogenous latent variables refer to independent variables that cause fluctuations in the values of other latent variables in the model, and the changes in the values of exogenous variables cannot be explained by the model. Instead, they are considered to be affected by other factors external to the model. Background variables such as gender, age, and socioeconomic status are considered as examples of such external factors. On the other hand, endogenous latent variables refer to dependent variables and, these are affected by the exogenous variables in the model directly or indirectly. Fluctuation in the values of endogenous variables can be explained by the model since all latent variables that have impacts on them are included in the model specification (Byrne, 1994).

Factor analysis is a well-known method that investigates the relationship between observed and latent variables. In this approach, the covariation among a series of observed variables is mainly examined to collect information on their underlying latent constructs. Basically, factor analysis can be employed with either exploratory or confirmatory purpose. In exploratory factor analysis (EFA), the linkage between the observed variables and latent variables is unknown or uncertain, so it focuses on determining how and to what extent these two types of variables are related with each other. Generally, researchers aim to find the

minimum number of factors that identifies covariation among observed variables. On the other hand, confirmatory factor analysis (CFA) is generally preferred to be used when the researcher has some knowledge about the underlying latent variable structure. Since having a priori knowledge about the theory, researchers can establish the relationships between observed variables and their underlying factors. Since the CFA model only concentrates on the relationship between factors and their measured variables, it represents a measurement model within the SEM framework (Byrne, 1994).

Contrary to the factor analytic model, the full latent variable model focuses on the specification of the regression structure among the latent variables. For that, researchers have a chance to understand the impact of one latent construct on another in the modeling of causal direction. Thus, it involves both the measurement model and structural model. The measurement model indicates that the linkage between the latent variables and their observed measures while the structural model indicates the linkage among only the latent variables themselves. To test the measurement model, confirmatory factor analysis is generally used, and it can be seen how strong the relationships among observed variables are in defining latent variables.

1.5.2. Conceptual Model

Since the structural equation modeling results for the proposed model are not very reliable due to the condition code reported the linear dependency problem for behavioral, normative, and control beliefs which are the immediate antecedents of attitudes, subjective norms, and perceived behavioral control, respectively, are excluded from the model. The first reason for this extraction is that when they are included in the model, the model fit results become very poor. This is probably due to the very high number of parameters which may result in unreliable estimate results. Another reason is that these constructs are highly associated with their consecutive latent constructs, which may create a linear dependency problem between variables, which violates the multicollinearity

assumption which is one of the structural equation modeling assumptions. When covariance matrix among the variables is analyzed, the EQS program gives a warning that the covariance matrix may not be positive definite that may indicate high correlation among variables. When the correlations are analyzed between behavioral beliefs and attitudes (.989), and normative beliefs and subjective norms (0.821), the correlation coefficients between those constructs are extremely high which is suggested to be extracted from the model (Şimşek, 2007). This version of the model without considering beliefs are also preferred by several researchers (Kaiser et al., 2005; Haustein and Hunecke, 2007; Albayrak, 2008).

Therefore, beliefs are excluded from the model, and the background factors are hypothesized to have impacts on attitudes, subjective norms, and perceived behavioral control as portrayed in Figure 4;
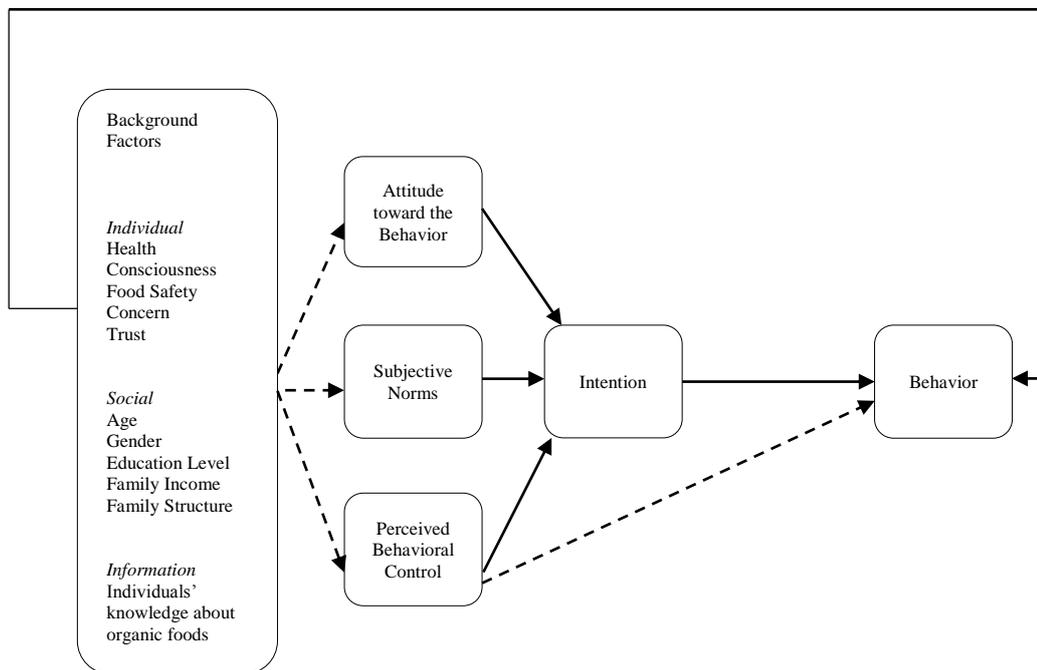
Figure 4. Conceptual Model

1.5.3. Results for the Basic TPB Model

1.5.3.1. Measurement Model for the Basic TPB Model

Confirmatory factor analysis (CFA) is a powerful technique that examines the nature and relationships among latent variables. CFA tests the prior hypotheses between observed and latent variables (Jackson et al., 2009). Thus, CFA enables us to understand whether the latent variables can adequately explain related observed variables. CFA has an essential role in structural equation modeling and path analyses, and before conducting those analyses, the validity of the constructs should be examined. CFA tests the validity of the measurement model that investigates whether the measured variables can accurately reflect the corresponding constructs before examining the structural model.

According to the TPB, behavioral intentions and perceived behavioral control are the immediate antecedents of organic food purchasing behavior. As well as the direct effect of perceived behavioral control, it has also an indirect effect on behavior mediated by behavioral intention. Further, attitudes toward organic food purchasing and subjective norms are the antecedents of intention which has a direct impact on actual behavior. Before examining the dependency relationships in the structural equation model, the measurement model that represents a set of observed variables as multiple indicators of latent variables which cannot be observed will be examined (McDonald and Ho, 2002) for only the basic TPB constructs.

Attitudes (ATT, measured with five items), subjective norms (SN, measured with three items), perceived behavioral control (PBC, measured with five items), and intention (INT, measured with two items) are included in the model measured with seven-point Likert type scale from 1 (I completely disagree) to 7 (I completely agree). For each latent construct, one of the loadings of indicators is fixed to 1, and other loadings, error terms of observed variables,

and covariances between the latent constructs are freely estimated in order to be able to perform simultaneous estimates.

1.5.3.2. Multivariate Normality of the Basic TPB

Bentler (2005) suggests in practice that if normalized estimate value is smaller than 5, then the data are accepted as multivariate normal, and maximum likelihood estimation can be used. However, in the present analysis, normalized estimate value is higher than 5 (Mardia's (1970, 1974) coefficient = 164.9794; normalized estimate = 83.7687), and the data do not follow a multivariate normal distribution. In this case, robust statistics (Satorra and Bentler, 1988, 1994) and robust standard errors (Bentler and Dijkstra, 1985) which are corrected for non-normality in large samples can be used.

1.5.3.3. Model Fit Results of the Basic TPB Model

Since the data do not follow a multivariate normal distribution, Satorra-Bentler (S-B) Scaled Chi-Square statistic, and model fit indices corrected for nonnormal data are used. As shown in Table 8, the model fit results seem quite poor, and it needs to be modified.

Table 8. Model Fit Results of the Baseline Model

Fit Index	Model Test Statistics	Recommended Level	Reference
S-B Scaled Chi-Square Probability Value for the Chi-Square Statistics	403.2731, significant 0.000	non-significant > 0.05	Hair et al. 2006
CMIN/df	4.115	<5 <2 < 2 or 3 <3	Wheaton et al., 1977 Tabachnick and Fidell, 2007 Carmines and McIver, 1981 Kline, 1998
Comparative Fit Index (CFI)	0.845	> 0.95	Hu and Bentler, 1999
Root Mean-Square Error of Approximation (RMSEA)	0.072	< 0.06 <0.05	Hu and Bentler, 1999 Browne and Cudeck, 1993
90% Confidence Interval of RMSEA	0.065-0.080		

1.5.3.4. Factor Loadings of the Basic TPB

Factor loadings should be detected whether they can explain well the corresponding constructs. Factor loadings are the estimates that represent the direct effects of factors on indicators and are interpreted as regression coefficients (Kline, 1998). The standardized factor loadings are estimated correlations between the indicator and its factor, and the squared standardized loadings are proportions of explained variance or R square. Ideally, a CFA model should explain the majority of the variation (R Square > .50) of each indicator (Kline, 1998). According to this, the proportion of explained variance for the indicators of ATT1 (.487), SN1 (.262), PBC1 (.462) is lower than the proposed value (.50). These indicators with a low proportion of explained variance may reduce the model fit, so these indicators should be extracted from the analysis to improve the model fit. However, the explained variance of ATT1 and PBC1 are very close to the value of .50, so extracting these items may cause information loss, so we remove only SN1 whose R square value is very low.

Table 9. Standardized Factor Loadings and Explained Variances

Indicators	Factor Loadings	R-Square
ATT1	0.698	0.487
ATT2	0.928	0.861
ATT3	0.880	0.774
ATT4	0.787	0.620
ATT5	0.872	0.760
SN1	0.512	0.262
SN2	0.897	0.805
SN3	0.788	0.621
PBC1	0.679	0.462
PBC2	0.795	0.632
PBC3	0.830	0.689
PBC4	0.748	0.559
PBC5	0.782	0.611
INT1	0.911	0.829
INT2	0.900	0.810

Note: ATT, attitude; SN, subjective norm; PBC, perceived behavioral control; INT, intention.

1.5.3.5. Model Modification

The hypothesized model does not fit, so the model can be improved by adding covariances between the errors in accordance with the theoretical framework, as well as excluding the indicators with a low proportion of explained variance. Table 10 illustrates the Lagrange Multiplier test results for the required modifications.

Table 10. Cumulative Multivariate Statistics

Step	Parameter	Chi-Square	Df	Probability
1	E9, E8	120.745	1	0.000
2	E4, E3	192.42	2	0.000
3	E12, E11	231.071	3	0.000
4	E14, E10	268.068	4	0.000
5	E15, E10	286.992	5	0.000
6	E16, E12	304.274	6	0.000
7	E7, E2	316.981	7	0.000
8	E7, E5	331.192	8	0.000
9	E14, E4	342.62	9	0.000
10	E3,E1	352.212	10	0.000
11	E7, E6	360.709	11	0.000
12	E11, E2	367.654	12	0.000
13	E10, E1	374.608	13	0.000
14	E8, E4	380.778	14	0.000
15	E10, E9	386.605	15	0.000
16	E12, E9	394.732	16	0.000
17	E15,E9	400.63	17	0.000
18	E5, E3	405.532	18	0.000
19	E10, E2	409.791	19	0.000
20	E11, E10	413.742	20	0.000

Note: E_s represent error terms

1.5.3.6. Model Fit Results for the Modified Model

After extracting the indicators with a low proportion of explained variance, and modifying the model according to the suggested covariances (E1-E3, E3-E4, E8-E9, E11-E12), the modified model could improve in a certain extent. Table 11 shows the fit indices of the modified model.

Table 11. Model Fit of the Modified Model

Fit Index	Model Test Statistics	Recommended Level	Reference
S-B Scaled Chi-Square Probability Value for the Chi-Square Statistics	155.0501, significant 0.000	non-significant > 0.05	Hair et al. 2006
CMIN/df	2.769	<5 <2 < 2 or 3 <3	Wheaton et al., 1977 Tabachnick and Fidell, 2007 Carmines and McIver, 1981 Kline, 1998
Comparative Fit Index (CFI)	0.937	> 0.95	Hu and Bentler, 1999
Root Mean-Square Error of Approximation (RMSEA)	0.055	< 0.06 <0.05	Hu and Bentler, 1999 Browne and Cudeck, 1993
90% Confidence Interval of RMSEA	0.044-0.065		

However, model fit indices do not meet the recommended levels, so the model still requires to be improved. For this reason, the TPB will be expanded by including several background factors that are thought to have significant impacts on the model constructs. Thus, the model is aimed to be improved. In this direction, knowledge about organic foods (OK), food safety concern (FSC), health consciousness (HC), trust (TRS), and socio-demographic factors of the participants are included into the model.

1.5.4. Results for the Extended TPB Model

1.5.4.1. Measurement Model of the Extended TPB Model

After including the latent variables which are food safety concern, health consciousness, and trust into the model, the CFA is again performed. Since the data do not follow a multivariate normal distribution (normalized Mardia's coefficient = 184.2982 > 5), robust statistics are used. Since R-square values of HC3 and HC4 are smaller than 0.50, they are extracted from the model suggested by (Cohen et al., 1983). After these items are extracted, the CFA results will be reported for the extended model.
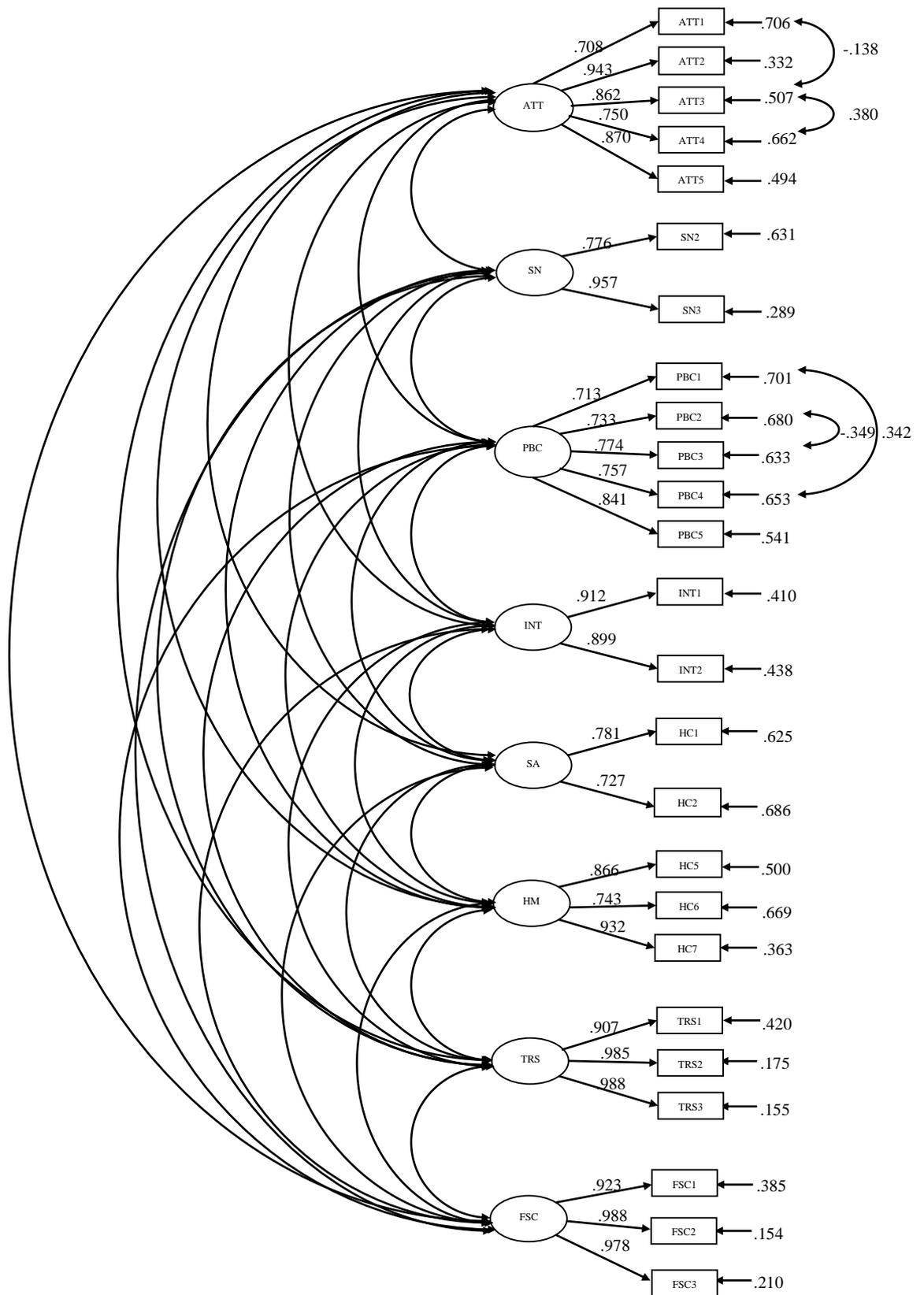
Figure 5. Measurement Model for the Extended TPB Model

1.5.4.2. Convergent Validity

Convergent validity refers to the extent to which measures of the same construct are correlated. The items that are indicators of a specific construct should share a high proportion of variance in common. Standardized factor loadings (standardized regression estimates) are used to evaluate the convergent validity, so factor loadings of 0.7 and higher are considered as good convergent validity, and factor loadings of 0.5 and higher are considered as acceptable convergent validity. According to Table 13, all the factor loadings are higher than 0.7, which is accepted as a good construct validity.

In addition, average variance extracted (AVE) values are calculated by dividing the sum of squared factor loadings to the number of items in each construct. As a rule of thumb, AVE values with higher than 0.50 indicate good convergent validity. Table 12 demonstrates the AVE values, which are all higher than 0.50, and reports good convergent validity.

1.5.4.3. Discriminant Validity

Discriminant validity refers to the extent to which construct are distinct, in other words; it provides empirical evidence that a construct is unique. Therefore, discriminant validity is tested by comparing maximum shared variance (MSV) with AVE for each construct. MSV is identified as the square of inter-correlation between two constructs. If MSV values are less than AVE values for each construct, then the discriminant validity can be confirmed.

For all constructs, MSV values are less than AVE values, except the squared correlation between SA-HM which are the constructs of health consciousness, which the high correlation between them is already expected. Thus, discriminant validity is confirmed in the proposed model.

Table 12. Discriminant Validity

Factors	Correlations	Squared Correlation (MSV)	Average Variance Extracted (AVE)
ATT-SN	0.233	0.054	
ATT-PBC	0.611	0.373	
ATT-INT	0.649	0.421	
ATT-SA	0.753	0.567	
ATT-HM	0.783	0.613	
ATT-TRS	0.423	0.179	
ATT-FSC	0.672	0.452	0.717
SN-PBC	0.302	0.091	
SN-INT	0.268	0.072	
SN-SA	0.231	0.053	
SN-HM	0.22	0.048	
SN-TRS	0.201	0.040	
SN-FSC	0.15	0.023	0.753
PBC-INT	0.575	0.331	
PBC-SA	0.731	0.534	
PBC-HM	0.548	0.300	
PBC-TRS	0.613	0.376	
PBC-FSC	0.462	0.213	0.586
INT-SA	0.576	0.332	
INT-HM	0.546	0.298	
INT-TRS	0.386	0.149	
INT-FSC	0.484	0.234	0.820
SA-HM	0.862	0.743	
SA-TRS	0.518	0.268	
SA-FSC	0.674	0.454	0.663
HM-TRS	0.399	0.159	
HM-FSC	0.667	0.445	0.922
TRS-FSC	0.319	0.102	0.928

Note: ATT, attitude; SN, subjective norm; PBC, perceived behavioral control; INT, intention; SA, self-health awareness; HM, health motivation; TRS, trust; FSC, food safety concern.

1.5.4.4. Reliability of the Extended Model

Since the hypothesized model has more than one-factor structure, Cronbach's alpha is not preferred since it may over- or under-estimate scale reliability (Raykov, 1997), so composite reliability measure, rho coefficient, which estimates the reliability of construct measurement is mostly preferred in CFA models (Raykov, 1997, 2004), and may lead to higher estimates of true reliability (Cronbach's Alpha=0.941; Reliability Coefficient Rho=0.973). As a

rule of thumb, the reliability coefficient rho which is higher than 0.70 is accepted as a reliable construct. Also, AVE of 0.50 and higher values are accepted as good model reliability. Further, construct reliability of 0.70, and higher values indicate good construct reliability.

Table 13. Reliability of the Measurement Model

Items	Standardized Regression Estimates	Average Variance Extracted (AVE)	Construct Reliability (CR)
ATT1	0.79		
ATT2	0.94		
ATT3	0.865		
ATT4	0.755		
ATT5	0.87	0.717	0.926
SN2	0.792		
SN3	0.937	0.753	0.858
PBC1	0.715		
PBC2	0.732		
PBC3	0.776		
PBC4	0.757		
PBC5	0.841	0.586	0.876
INT1	0.927		
INT2	0.884	0.820	0.901
HC1	0.781		
HC2	0.728		
HC5	0.863		
HC6	0.749		
HC7	0.933	0.663	0.907
TRS1	0.907		
TRS2	0.984		
TRS3	0.988	0.922	0.973
FSC1	0.923		
FSC2	0.988		
FSC3	0.978	0.928	0.975

Note: ATT, attitude; SN, subjective norm; PBC, perceived behavioral control; INT, intention; HC, health consciousness; TRS, trust; FSC, food safety concern.

1.5.4.5. Distribution of the Residuals for the Extended Model

Besides multivariate normality assumption, residuals should also be normally distributed. To detect this assumption, standardized residual information can be used, and average off-diagonal residuals whose values are higher than 2.58 are considered large (Joreskog and Sorbom, 1988). Average off-diagonal absolute standardized residual is equal to 0.025 indicating very good fit with the data.

In addition, the normality assumption for residuals can be detected from the distribution of standardized residuals. If the total percentage between the range of -0.1-0.0 and 0.0-0.1 is greater than 0.90, then the residuals can be inferred to be normally distributed. In this case, the total percentage is 98.76 indicating the residuals are normally distributed.

1.5.4.6. Model Fit Results for the Measurement Model

According to the Satorra-Bentler Scaled Chi-Square, the proposed model does not fit with the data. However, the chi-square tests generally give significant results, and it is sensitive to sample size, so other fit indices should be examined. Instead Satorra-Bentler Scaled Chi-Square value, Chi-square/degrees of freedom (CMIN/df) value is generally preferred to interpret, and it is found to be smaller than suggested values. Also, Root Mean Error of Approximation and its confidence interval are within the recommended levels. However, Comparative Fit Index is not very adequate for the proposed model, so it needs to be further investigated whether the proposed model can be improved by using modification indices.

Table 14. Model Fit Results of the Measurement Model

Fit Index	Model Test Statistics	Recommended Level	Reference
S-B Scaled Chi-Square Probability Value for the Chi-Square Statistics	521.8012, significant 0.000	non-significant > 0.05	Hair et al. 2006
CMIN/df	1.739	<5 <2 < 2 or 3 <3	Wheaton et al., 1977 Tabachnick and Fidell, 2007 Carmines and McIver, 1981 Kline, 1998
Comparative Fit Index (CFI)	0.922	> 0.95	Hu and Bentler, 1999
Root Mean-Square Error of Approximation (RMSEA)	0.043	< 0.06 <0.05	Hu and Bentler, 1999 Browne and Cudeck, 1993
90% Confidence Interval of RMSEA	0.038-0.048		

1.5.4.7. Model Modification of the Measurement Model

The hypothesized model does fit according to most of the indices except CFI, so the model can be improved by adding covariance between error terms only if we can theoretically explain. For this, the Lagrange Multiplier Test (LM Test) is performed to understand whether the model can be improved. The multivariate LM Test suggests the below modifications between error terms (Table 15), and when the proposed modifications are made, chi-square value drops and their significance are also reported.

It is important to note that we can add covariances between the error terms if there is a unique relationship between those two items. The suggested covariances are shown in Table 15. The first suggested covariance is between E4 and E3, and these error terms belong to the items of attitude, so that we can add a covariance between them. Then, covariances between E12-E11 and E14-E10 are suggested, which are the error terms of perceived behavioral control items. Last, the covariance between E3 and E1 is suggested. After the suggested covariances are added to the model (E3-E4, E11-E12, E10-E14, E1-E3), respectively, the proposed model fit results will be reported.

Table 15. Multivariate Lagrange Multiplier Cumulative Test Statistics

Step	Parameter	Chi-Square	Df	Probability
1	E4, E3	75.803*	1	0.000
2	E12, E11	116.603*	2	0.000
3	E14, E10	148.013*	3	0.000
4	E15, E10	168.623*	4	0.000
5	E21, E19	188.441*	5	0.000
6	E16, E12	205.392*	6	0.000
7	E14, E4	217.738*	7	0.000
8	E26, E3	229.747*	8	0.000
9	E19, E11	240.85*	9	0.000
10	E24, E10	251.918*	10	0.000
11	E21, E1	262.468*	11	0.000
12	E18, E12	270.945*	12	0.000
13	E12, E8	279.425*	13	0.000
14	E10, E9	289.757*	14	0.000
15	E22, E15	298.202*	15	0.000
16	E23, E18	305.837*	16	0.000
17	E3, E1	313.342*	17	0.000

Note: E$_s$ represent error terms

1.5.4.8. Model Fit Results of the Modified Model

After modifying the proposed model, S-B Chi-square (416.594), CMIN/df (1.71), CFI (0.951), RMSEA (0.035), CI of RMSEA (0.029-0.040) are reported in Table 16. Except for chi-square value, all the fit indices meet the recommended levels, which implies that the model fit is pretty good.

Table 16. Model Fit of the Modified Model

Fit Index	Model Test Statistics	Recommended Level	Reference
S-B Scaled Chi-Square Probability Value for the Chi-Square Statistics	416.5940, significant 0.000	non-significant > 0.05	Hair et al. 2006
CMIN/df	1.71	<5 <2 < 2 or 3 <3	Wheaton et al., 1977 Tabachnick and Fidell, 2007 Carmines and McIver, 1981 Kline, 1998
Comparative Fit Index (CFI)	0.951	> 0.95	Hu and Bentler, 1999
Root Mean-Square Error of Approximation (RMSEA)	0.035	< 0.06 <0.05	Hu and Bentler, 1999 Browne and Cudeck, 1993
90% Confidence Interval of RMSEA	0.029-0.040		

1.5.4.9. Factor Loadings of the Extended Model

Robust estimate results suggest that all the items of the model are significantly explained by the corresponding constructs as Table 17 indicates. Further, all R-square values are higher than 0.50 which is a desirable condition in improving the model fit.

Table 17. Robust Estimates for the Measurement Model

Parameter	Unstandardized	SE	Test Statistic	Standardized	R Square
Attitude→ATT1	1.000	-	-	0.708	0.501
Attitude→ATT2	1.009*	0.040	25.021	0.943	0.890
Attitude→ATT3	1.018*	0.035	29.086	0.862	0.743
Attitude→ATT4	1.027*	0.035	29.269	0.750	0.562
Attitude→ATT5	1.079*	0.036	30.271	0.870	0.756
Subjective Norm→SN2	1.000	-	-	0.776	0.602
Subjective Norm→SN3	1.297*	0.125	10.388	0.957	0.916
Perceived Behavioral Control→PBC1	1.000	-	-	0.713	0.509
Perceived Behavioral Control→PBC2	1.035*	0.058	17.814	0.733	0.537
Perceived Behavioral Control→PBC3	1.284*	0.072	17.784	0.774	0.599
Perceived Behavioral Control→PBC4	1.073*	0.060	17.800	0.757	0.574
Perceived Behavioral Control→PBC5	1.223*	0.070	17.473	0.841	0.708
Intention→INT1	1.000	-	-	0.912	0.832
Intention→INT2	0.914*	0.029	31.415	0.899	0.808
Health Consciousness→HC1	1.000	-	-	0.781	0.610
Health Consciousness→HC2	0.997*	0.037	27.001	0.727	0.529
Health Consciousness→HC5	1.000	-	-	0.866	0.750
Health Consciousness→HC6	0.968*	0.039	24.508	0.743	0.552
Health Consciousness→HC7	1.037*	0.027	38.302	0.932	0.868
Food Safety Concern→FSC1	1.000	-	-	0.907	0.823
Food Safety Concern→FSC2	1.014*	0.015	67.859	0.985	0.969
Food Safety Concern→FSC3	1.015*	0.015	69.240	0.988	0.976
Trust→TRS1	1.000	-	-	0.923	0.852
Trust→TRS2	1.034*	0.022	46.211	0.988	0.976
Trust→TRS3	1.066*	0.022	48.823	0.978	0.956

* represents significance at the 5 per cent

1.5.5. Structural Model for the Extended TPB Model

Since the data do not follow a multivariate normal distribution (normalized estimate of Mardia's coefficient = 187.4964 > 5), maximum likelihood estimates results cannot be used. Instead, robust statistics will be reported. Along with multivariate normality assumption, residuals should also be normally distributed. To detect this assumption, standardized residual information can be used, and average off-diagonal residuals whose values are higher than 2.58 are considered large (Joreskog and Sorbom, 1988). Average off-diagonal value is equal to 0.0278 which indicates a very good fit with the data. In addition, normality assumption for residuals is detected from the distribution of standardized residuals. Since the total percentage between the range of -0.1-0.0 and 0.0-0.1 is higher than 0.90 percent (98.26 percent), the residuals can be inferred to be normally distributed.

Also, the model includes covariances between independent variables as Table 18 suggested. The relationships between knowledge and food safety concern; knowledge and trust; food safety concern and health consciousness; food safety concern and trust are found to be significant.

Table 18. Covariances between Independent Variables

	Food Safety Concern	Health Consciousness	Trust
Knowledge	.870* (.167; 5.212)	-.003 (.178; .-015)	.739* (.116; 6.322)
Food Safety Concern		-.672* (.290; -2.317)	.583* (.125; 4.651)
Health Consciousness			.112 (.135; .827)

*p < .05; left hand side value of the paranthesis indicates standard error of estimate, right hand side value of the paranthesis indicates test statistic.

As the original model of the TPB asserts that attitudes, subjective norms, and perceived behavioral control are the predictors of behavioral intention, and intention predicts actual behavior. In this study, health consciousness, food safety concern, trust, knowledge about organic foods, and socio-demographic

factors are incorporated to the model as background factors, and they are expected to affect attitudes, subjective norms, and perceived behavioral control significantly. Further, the trust factor is supposed to have both direct and indirect effects on actual behavior.

Since gender, income, age, and the number of children in the family cannot be found any significant impact on model constructs, and their inclusion reduces the model fit in a considerable extent, socio-demographic factors are excluded from the model. They are going to be later examined in the scope of the observed variable model. In addition, knowledge about organic foods of individuals is added to the model as a manifest variable as calculating the mean scores of the responses.

Further, food safety concern, health consciousness (self-health awareness and health motivation), and trust are included to the model as immediate antecedents of attitudes, subjective norms, and perceived behavioral control. Also, as the original TPB model suggested, perceived behavioral control has a direct impact on actual behavior as well as its indirect impact mediated by behavioral intention.

This study also claims that trust has a direct impact on actual behavior as well as its indirect effect. The structural model is portrayed as below after adding the covariances between the exogenous variables. Also, the model is seen to be improved after adding a path from food safety concern to self-health awareness and health motivation which are the constructs of health consciousness. It also includes covariances between error terms as the modification indices suggested in confirmatory factor analysis.

1.5.5.1. Model Fit Results of the Extended TPB

Structural model fit results portrayed in Table 19 indicates the excellent fit between the hypothesized model and the data. Execpt Satorra-Bentler Chi-square value (sensitive to sample size), all the fit indices meet the recommended

levels (CMIN/df = 1.562; CFI = 0.957; RMSEA = 0.031; CI of RMSEA = 0.025-0.036).

Table 19. Model Fit Results of the Structural Model

Fit Index	Model Test Statistics	Recommended Level	Reference
S-B Scaled Chi-Square Probability Value for the Chi-Square Statistics	454.6449 significant 0.000	non-significant > 0.05	Hair et al. 2006
CMIN/df	1.562	<5 <2 < 2 or 3 <3	Wheaton et al., 1977 Tabachnick and Fidell, 2007 Carmines and McIver, 1981 Kline, 1998
Comparative Fit Index (CFI)	0.957	> 0.95	Hu and Bentler, 1999
Root Mean-Square Error of Approximation (RMSEA)	0.031	< 0.06 <0.05	Hu and Bentler, 1999 Browne and Cudeck, 1993
90% Confidence Interval of RMSEA	0.025-0.036		

1.5.5.2. Path Estimates of the Extended TPB Model

As the prior hypothesized model suggested, food safety concern, health consciousness, trust, and knowledge level are the antecedents of the attitudes, subjective norms, and perceived behavioral control, and these background factors have indirect effects on intention and actual behavior.

Also, trust is asserted to have a direct impact on actual behavior as suggested by Nuttavuthisit and Thogersen (2017) based on the TPB framework. In addition, perceived behavioral control is expected to have a direct impact on actual behavior as the TPB hypothesized (Ajzen, 1991).

Path estimates demonstrate the significant causal paths between constructs and their proportion of explained variances (Table 20). In line with the original TPB model, attitudes, subjective norms, and perceived behavioral

control have significant impacts on behavioral intention, and the explained portion of variance is 48.1 percent, which is a slightly low value requiring further investigation. Thus, the hypotheses $H_1(a)$, $H_1(b)$, and $H_1(c)$ are confirmed.

Further, attitude is predicted by health consciousness, food safety concern, and knowledge about organic food that individuals have, and these constructs can predict 75.1 percent of the variation in attitude while trust has no significant impact on attitude. Thus, while the hypotheses $H_2(a)$, $H_3(a)$, and $H_5(a)$ are confirmed, $H_4(a)$ is rejected.

Subjective norms can only be predicted by knowledge about organic food that individuals have, and other background factors cannot be found to have any significant impact on subjective norms. Thus, only the hypothesis $H_5(b)$ is confirmed while the others, $H_2(b)$, $H_3(b)$, and $H_4(b)$, are rejected. Further, knowledge about organic products can pedict 8.1 percent of the variation in subjective norms.

Perceived behavioral control is significantly predicted by health consciousness, food safety concern, and trust, yet knowledge has no significant impact on perceived behavioral control. Thus, while the hypotheses $H_2(c)$, $H_3(c)$, and $H_4(c)$ are confirmed, $H_5(c)$ is rejected. Further, health consciousness, food safety concern, and trust can predict 56 percent of the variation in perceived behavioral control.

Actual behavior is driven only by behavioral intention, and the explained proportion of variance in actual behavior is 91.6 percent which is a considerably high percentage in predicting behavior.

However, contrary to the hypotheses, trust and perceived behavioral control have no direct impact on behavior which needs to be further investigated. Thus, while the hypotheses $H_1(d)$ and $H_4(d)$ are rejected, only $H_1(e)$ is confirmed. When we examine only the direct effect on behavior rather than indirect, the direct impact of trust on behavior turns to be significant.

Table 20. Robust Estimates of the Structural Model

Parameter	Unstandardized	SE	Test Statistics	Standardized	R Square
Knowledge→Attitude	.277*	0.058	4.8	0.336	
Health Consciousness→Attitude	.462*	0.095	4.861	0.43	0.751
Food Safety Concern→Attitude	.568*	0.124	4.566	0.729	
Trust→Attitude	0.007	0.019	0.388	0.012	
Knowledge→Subjective Norms	.184*	0.088	2.089	0.154	
Health Consciousness→Subjective Norms	0.183	0.148	1.24	0.118	0.081
Food Safety Concern→Subjective Norms	0.155	0.131	0.88	0.102	
Trust→Subjective Norms	0.091	0.05	1.815	0.09	
Knowledge→Perceived Behavioral Control	-0.055	0.069	-0.798	-0.056	
Food Safety Concern→Perceived Behavioral Control	.632*	0.14	4.521	0.675	0.56
Health Consciousness→Perceived Behavioral Control	.621*	0.119	5.229	0.48	
Trust→Perceived Behavioral Control	.291*	0.041	7.032	0.381	
Attitude→Intention	.657*	0.066	9.897	0.455	
Subjective Norms→Intention	.089*	0.038	2.359	0.089	0.481
Perceived Behavioral Control→Intention	.334*	0.072	4.626	0.278	
Intention→Behavior	.983*	0.058	16.924	0.934	
Perceived Behavioral Control→Behavior	0.013	0.06	0.218	0.01	0.916
Trust→Behavior	0.041	0.022	1.831	0.042	

*$p < .05$

The structural model with path estimates and all the factor loadings is shown in Figure 6. The path coefficients with stars indicate the significant directional relationships between constructs. The covariances between independent variables are ignored to avoid overloading the figure. Also, the paths from food safety concern to self-health awareness and health motivation are also significant, yet it is ignored to avoid overloading the figure.
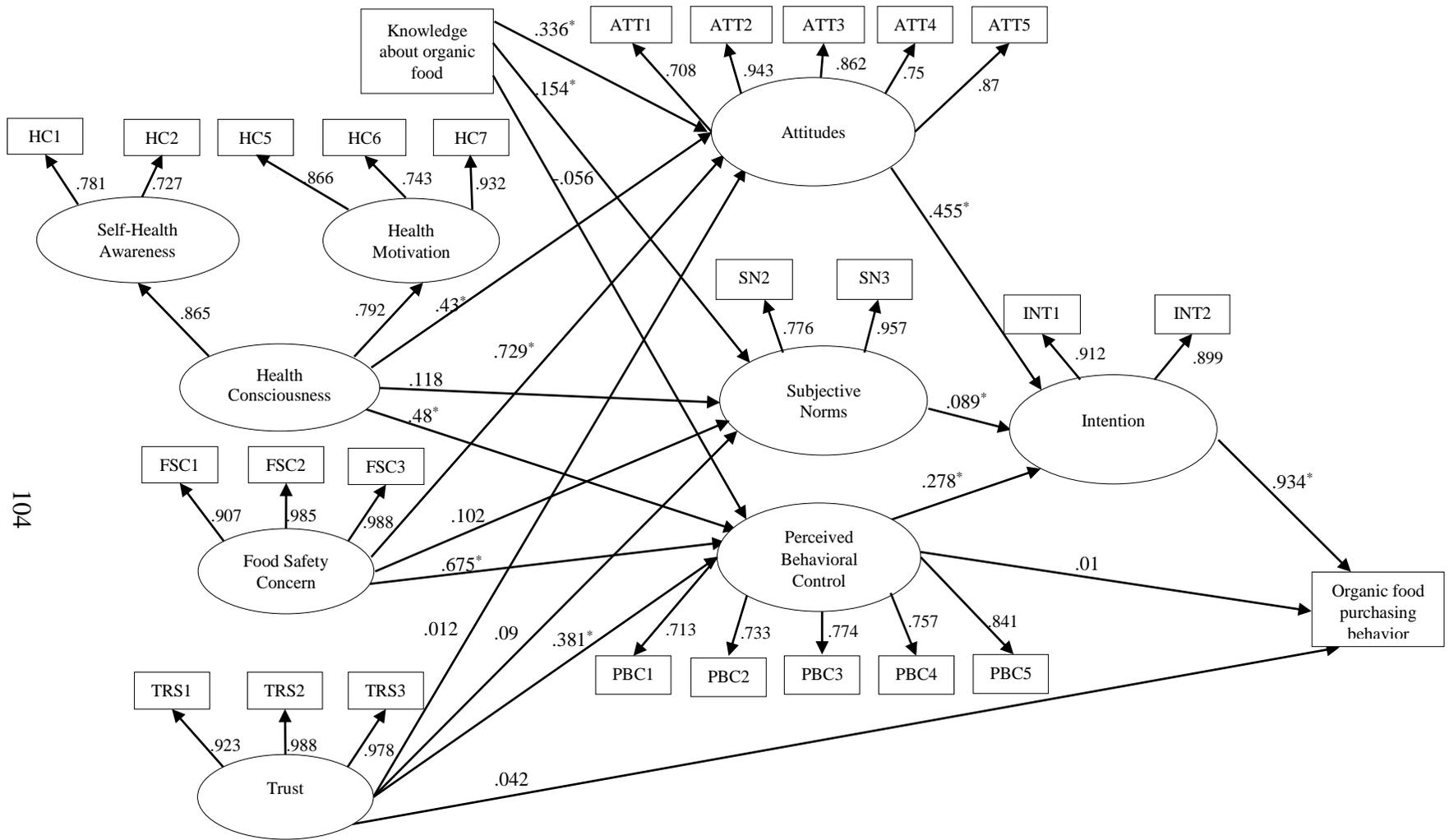
Figure 6. Structural Model for the Extended TPB
Note: *Covariances between predictor variables are ignored to avoid overloading the figure. * p < .05*

1.5.6. Chi-Square Difference between Nested and Comparison Models

As we infer that the model fit indices could improve to the recommended levels, yet chi-square difference tests should be performed to understand whether there is a significant improvement happened after modification. The nested model identifies the model before modification, and the comparison model identifies the model after modification. For this, first, scaling correction should be calculated to find chi-square Satorra-Bentler difference value since the data are not normally distributed. This value is compared to the value from the Chi-Square Distribution Table according to the difference between degrees of freedom for the two models, and the stated probability level (df difference = 4, probability = 0.05, table value = 9.49). Since calculated Chi-square Satorra-Bentler difference is higher than the distribution value (54.11 > 9.49), a significant improvement in the model can be observed.

Table 21. Chi-Square Difference Test

Df (nested)	247
Df (comparison)	243
Satorra-Bentler Nested Chi-Square	521.8012
Satorra-Bentler Comparison Chi-Square	416.594
ML Nested Chi-Square	723.477
ML Comparison Chi-Square	567.326
Scaling Correction	2.89
Chi-Square S-B difference	**54.11**

Note: Df, degrees of freedom; ML, maximum likelihood

1.5.7. Observed Variable Model

Since the hypothesized model includes the high number of parameters, there could be some parameter specification problems, so the direct and indirect relationships between trust and behavior, and perceived behavioral control and behavior will be later examined in path analysis performed for observed variables in a more detailed manner. Besides the latent variable model, the observed variable model will also be examined to see the directional effects

among variables as well as indirect effects, and socio-demographic characteristics will also be examined. Thus, the hypothesized relationships among variables can be clarified. For this, all latent variables were converted manifest variables by calculating the mean scores of all indicators of corresponding latent variables. In this model, attitudes, subjective norms, perceived behavioral control, intention, and actual behavior are endogenous variables, so they have error terms, and rest of the variables are exogenous variables, and since they do not have directed arc ending on them, they do not have error terms. All exogenous variables were added covariances, yet they were ignored to avoid overloading the figure.
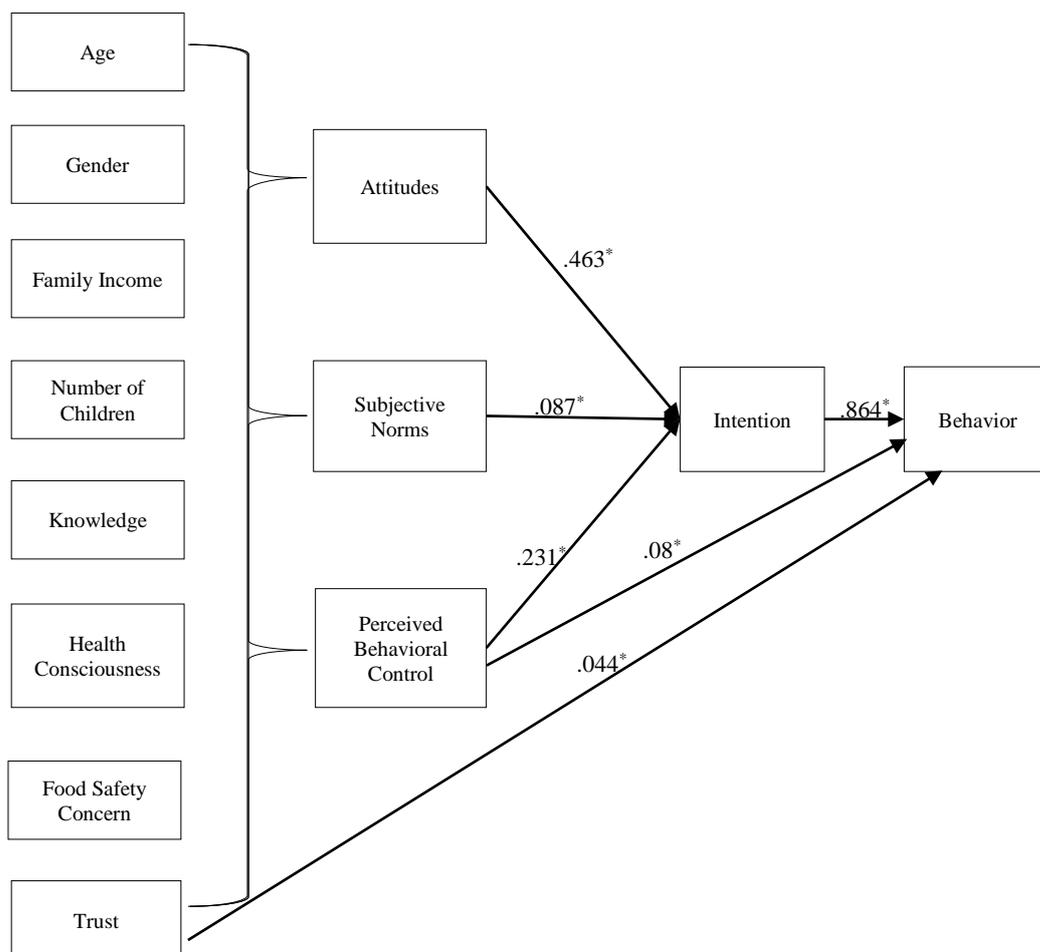

Figure 7. Observed Variable Model
Note. * *p* < *.05.*

As the hypothesized model suggested, health consciousness, trust, food safety concern, knowledge about organic foods, and socio-demographic factors are considered as antecedents of attitudes, subjective norms, and perceived behavioral control. Different from the latent variable model, socio-demographic factors, which are age, gender, family income, and the number of children are included in the model. Further, the model postulates that attitudes, subjective norms, and perceived behavioral control are predictors of behavioral intention, and they are also thought to have indirect effects on actual behavior mediated by behavioral intention. Last, actual behavior is expected to be predicted by intention, perceived behavioral control and trust.

First, path analysis results will be reported, and significant paths among the variables are identified. Then, the model fit results will be reported, and whether the proposed model and the data fit well will be examined. Last, the correlations between the variables will be calculated by including both direct and indirect effects.

Table 22 demonstrates the correlations among independent variables and their significance. The absolute correlations which are close to 1.0 imply identification problem which indicates linear dependency (Bollen, 1989). However, no identification and linear dependency problem are detected.

Table 22. Correlations among Independent Variables

	AGE	GENDER	INC	CHILD	KNWL	HC	TRST	FSC
AGE	1.000							
GENDER	0.233*	1.000						
INC	0.020	0.005	1.000					
CHILD	0.189*	0.104*	0.222*	1.000				
KNW	0.004	-0.031	-0.052	-0.004	1.000			
HC	0.034	-0.034	-0.015	-0.060	0.673*	1.000		
TRS	0.064	-0.076	-0.094*	-0.087*	0.415*	0.392*	1.000	
FSC	0.014	-0.061	0.056	-0.037	0.616*	0.597*	0.311*	1.000

Note: AGE, age; INC, family income; CHILD, number of children in the household; KNW, knowledge about organic food; HC, health consciousness; TRS, trust; FSC, food safety concern; *p<0.05.

107

1.5.7.1. Multivariate Normality

According to the maximum likelihood estimation technique used in SEM procedure, data should distribute multivariate normal. To detect both univariate and multivariate non-normality, skewness and kurtosis of the measured variables should be examined. If there exists significant outliers in the data, skewness, and kurtosis will be higher than they should be. To test the multivariate normality, Mardia's coefficients of multivariate skewness and kurtosis are suggested (Bonett, 2002). If the sample is considerably large and multivariate normal, the Mardia's normalized estimate is distributed as a unit normal indicating that large positive values reflect significant positive kurtosis and large negative values reflect significant negative kurtosis (Byrne, 1994).

Bentler (2005) suggests in practice that if normalized estimate value is smaller than 5, then the data are accepted as multivariate normal. In this case, maximum likelihood estimation can be used. However, in the present analysis, normalized estimate value is higher than 5 (80.5632), and the data do not distribute multivariate normal. In this case, robust statistics (Satorra and Bentler, 1988; 1994) and robust standard errors (Bentler and Dijkstra, 1985) which are corrected for non-normality in large samples can be used.

1.5.7.2. Distributions of Residuals

Besides multivariate normality assumption, residuals should also be normally distributed. To detect this assumption, standardized residual information can be used, and average off-diagonal residuals whose values are higher than 2.58 are considered large (Joreskog and Sorbom, 1988). Average off-diagonal value is equal to 0.0092 which indicates very good fit with the data.

In addition, the normality assumption for residuals can be detected from the distribution of standardized residuals. If the total percentage between the range of -0.1-0.0 and 0.0-0.1 is higher than 0.90, then the residuals can be inferred that normally distributed. In this case, the total percentage is 100, which indicates that residuals are normally distributed.

Further, the standardized residual covariance matrix, which indicates the difference between the hypothesized and sample covariance matrix, should be examined to detect residuals. Residuals should be small and centered around zero. The frequency distribution of residual covariances should be symmetrical. Non-symmetrical frequency distribution indicates a poor-fitting model. Table 23 demonstrates the residual covariance matrix indicating the associations among the observed variables.

Except for the covariance between behavior and age, all residual covariances are close to zero which implies that the population covariance between any deviations in initial status and rate of change is small. The high covariance between behavior and age might be an indicator of modification is needed between error terms.

Table 23. Residual Covariance Matrix

	ATT	SN	PBC	INT	AGE	GEND	INC	CHILD	KNWL	HC	TRS	FSC	BEH
ATT	0.000												
SN	0.090	0.000											
PBC	0.000	0.116	0.000										
INT	0.008	0.078	0.010	0.013									
AGE	0.000	0.000	0.000	-0.871	0.000								
GEND	0.000	0.000	0.000	0.014	0.000	0.000							
INC	0.000	0.000	0.000	0.000	0.000	0.000	0.000						
CHILD	0.000	0.000	0.000	-0.035	0.000	0.000	0.000	0.000					
KNW	0.000	0.000	0.000	0.103	0.000	0.000	0.000	0.000	0.000				
HC	0.000	0.000	0.000	0.067	0.000	0.000	0.000	0.000	0.000	0.000			
TRS	0.000	0.000	0.000	0.045	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
FSC	0.000	0.000	0.000	0.106	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
BEH	-0.001	0.124	0.010	0.015	-1.324	0.022	0.016	-0.022	0.099	0.082	0.043	0.079	0.017

Note: ATT, attitude; SN, subjective norm; PBC, perceived behavioral control; INT, intention; AGE, age; INC, family income; CHILD, number of children in household; KNW, knowledge about organic food; HC, health consciousness; TRS, trust; FSC, food safety concern; BEH, behavior.

1.5.7.3. Multicollinearity or Singularity

If some of the variables in the model are perfect linear combinations of one another or they are extremely highly correlated, the covariance matrices cannot be inverted since their determinants are extremely low, which may indicate a multicollinearity or singularity problem. SEM procedure aborts when the covariance matrix is singular. In the current study, there are extremely high correlations between attitudes and behavioral beliefs, subjective norms, and normative beliefs, perceive behavioral control and control beliefs, which creates a linear dependence. Therefore, behavioral beliefs, normative beliefs, and control beliefs are also extracted from the observed varaible model as in the latent variable model to get adequate analysis results.

1.5.7.4. Model Fit Results of the Observed Variable Model

Since the data do not follow a multivariate normal distribution, we cannot use maximum likelihood estimates. If this assumption is violated, the results of the hypothesis testing may mislead, and test statistics may not provide adequate evaluations of the model (Hu et al., 1992). While some argue that other estimation methods can be used when the normality assumption does not hold (Byrne, 1994), some suggest that using the corrected test statistics may be more appropriate than using different modes of estimation (Chou et al., 1991; Hu et al., 1992). Since multivariate normality assumption does not hold, robust statistics which are corrected for non-normal data should be interpreted. Table 24 portrays the model fit indices for the proposed model. Chi-Square test statistic represents the discrepancy between the sample covariance matrix and the fitted covariance matrix (Hu and Bentler, 1998). The null hypothesis asserts that there is no difference between the hypothesized model and perfect fit. Therefore, higher probabilities associated with chi-square imply that a closer fit between the hypothesized model and perfect fit (Bollen, 1989). When Satorra-Bentler Scaled Chi-Square value of 33.5904, and its probability value of

0.00948 < 0.05 are examined, the null hypothesis is said to be rejected which indicates that the fit of the data to the hypothesized model is not entirely adequate. Since Chi-Square likelihood ratio test is sensitive to sample size, the null hypothesis is generally rejected. In practice, chi-square/degrees of freedom value is used to test the model test to reduce the sensitivity of the chi-square to the sample size. The model value of CMIN/df (1.976) is smaller than cut-off points which most of the researchers suggested indicating a good fit. Also, the comparative fit index (CFI) which compares nested models is reported in Table 4. This index represents the difference between independence (worst model) and hypothesized models. Thus, the difference between the two models is expected to be high. CFI value (0.987) which is higher than 0.95 is accepted as an excellent fit, and it can be trusted even in small samples. Root Mean Square Error of Approximation (RMSEA) compares the hypothesized and the saturated (best) models, so the discrepancy between the two models is expected to be low as much as possible and close to zero. It is also considered as one of the most informative criteria in covariance structure modeling for three reasons (Byrne, 1994). First, it seems to be adequately sensitive to model misspecification (Hu and Bentler, 1998). Second, generally used interpretive guidelines suggest appropriate results about model quality (Hu and Bentler, 1998, 1999). Third, it is possible to calculate confidence intervals for RMSEA values. Also, the confidence interval of RMSEA is reported, and 90 percent confident that the true RMSEA value in the population falls within the bounds of 0.020 and 0.061, which represents a reasonable degree of precision. Narrower confidence intervals represent a more adequate model fit. However, confidence intervals may be severely affected by sample size and model complexity (MacCallum et al., 1996). When sample size is small, and the number of parameters is high, the confidence interval might be wide, so that larger sample sizes would give narrower confidence intervals.

Table 24. Model Fit Results of the Observed Variable Model

Fit Index	Model Test Statistics	Recommended Level	Reference
S-B Scaled Chi-Square Probability Value for the Chi-Square Statistics	33.5904, significant 0.00948	non-significant > 0.05	Hair et al. 2006
CMIN/df	1.976	<5 <2 < 2 or 3 <3	Wheaton et al., 1977 Tabachnick and Fidell, 2007 Carmines and McIver, 1981 Kline, 1998
Comparative Fit Index (CFI)	0.987	> 0.95	Hu and Bentler, 1999
Root Mean-Square Error of Approximation (RMSEA)	0.041	< 0.06 <0.05	Hu and Bentler, 1999 Browne and Cudeck, 1993
90% Confidence Interval of RMSEA	0.020-0.061		

N=594

1.5.7.5. Path Estimates of the Observed Variable Model

Table 25 demonstrates the significant causal paths estimates, standard errors, and R squares. According to this, attitudes are predicted by knowledge about organic food, health consciousness, and food safety concern. There cannot be found any evidence that the rest of the background variables have a significant impact on attitudes. Further, subjective norms are predicted only by family income, health consciousness, and knowledge about organic food. Perceived behavioral control is predicted by family income, health consciousness, and knowledge about organic food, age, and trust. While the intention is predicted by attitudes, subjective norms, and perceived behavioral control, actual behavior is driven by intention, perceived behavioral control and trust. As well as the direct effects of trust and perceived behavioral control on actual behavior, their indirect effects should also be considered, so we will calculate indirect impacts of trust and perceived behavioral control on actual behavior, and then we will report the total effects.

Table 25. Robust Estimates of the Observed Variable Model

Parameter	Unstandardized	SE	Test Statistics	Standardized	R Square
Knowledge → Attitude	0.426*	0.052	8.257	0.476	
Health Consciousness → Attitude	0.251*	0.051	4.953	0.255	0.651
Food Safety Concern → Attitude	0.121*	0.041	2.907	0.144	
Family Income → Subjective Norms	0.142*	0.064	2.219	0.097	
Knowledge → Subjective Norms	0.223*	0.065	3.455	0.191	0.162
Health Consciousness → Subjective Norms	0.278*	0.069	4.05	0.271	
Age → Perceived Behavioral Control	0.020*	0.004	4.602	0.143	
Family Income → Perceived Behavioral Control	0.146*	0.051	2.868	0.093	
Knowledge → Perceived Behavioral Control	0.121*	0.061	1.991	0.101	0.463
Health Consciousness → Perceived Behavioral Control	0.335*	0.068	4.918	0.255	
Trust → Perceived Behavioral Control	0.340*	0.038	8.941	0.389	
Attitude → Intention	0.588*	0.049	12.01	0.463	
Subjective Norms → Intention	0.084*	0.030	2.855	0.087	0.424
Perceived Behavioral Control → Intention	0.220*	0.041	5.388	0.231	
Perceived Behavioral Control → Behavior	0.084*	0.033	2.574	0.08	
Intention → Behavior	0.957*	0.051	18.916	0.864	0.862
Trust → Behavior	0.041*	0.018	2.262	0.044	

*p < .05

Table 26 shows the direct, indirect, and total effects as both unstandardized and standardized. Indirect effects are estimated statistically as the product of direct effects (Kline, 1998). Since trust affects organic food purchasing behavior mediated by perceived behavioral control and intention, the indirect effect of trust on actual behavior is calculated as the products of 0.389x0.231x0.864 (0.078) for standardized coefficients and 0.340x0.22x0.957 (0.072) for unstandardized coefficients. The total effect of trust on actual behavior is equal to the sum of the direct and indirect effects found as 0.122 for standardized and 0.113 for unstandardized values. Perceived behavioral control also has both indirect and direct effects on actual behavior. The indirect effect of perceived behavioral control on actual behavior is calculated as the products of 0.231x0.864 (0.2) for standardized coefficients and 0.22x0.957 (0.21) for unstandardized coefficients. The total effect of perceived behavioral control on

113

actual behavior is equal to sum of the direct and indirect effects found as 0.28 for standardized and 0.294 for unstandardized values. They are also interpreted just as path coefficients. As a rule of thumb (Cohen et al., 1983) if all unstandardized path coefficients are statistically significant at the same level of α, then the whole indirect effect can be taken as statistically significant at the same level of α, too. Based on this information, the indirect effects are accepted as significant on the endogenous variable which is actual behavior.

Table 26. Decompositions for Effects of Exogenous on Endogenous Variables

| Endogenous Variable | Causal Variable | | | |
| | Trust | | Perceived Behavioral Control | |
	Unst.	St.	Unst.	St.
Behavior				
Direct	0.041*	0.044	0.084*	0.08
Total Indirect	0.072*	0.078	0.21*	0.2
Total	0.113*	0.122	0.294*	0.28

*p<0.05

1.6. Conclusion

The purpose of this thesis is to reveal the significant factors that affect individuals' organic food purchasing behavior. More specifically, it examines the impacts of food safety concern, health consciousness, trust, organic knowledge, and socio-demographic characteristics of individuals as additional factors within the Theory of Planned Behavior framework. A total of 594 consumers responded to the web-based survey from the farm of Ipek Hanim, which is a local farm in Nazilli, Turkey. A structural equation modeling with EQS software version 6.1 is performed to validate the measurement model, and the structural model results are reported indicating the causal relationships among variables.

The utility of the extended Theory of Planned Behavior is mainly confirmed in understanding individuals' organic food purchasing behavior. The

addition of food safety concern, health consciousness, trust, organic knowledge, and socio-demographic characteristics (only for the observed variable model) is proven to improve the predictive power of the model and increase the proportion of explained variance in actual behavior. The latent variable model fits well with the data, and the path estimates reveal that organic knowledge, health consciousness, and food safety concern are found to have significant positive impacts on attitudes while food safety concern, health consciousness, and trust have positive impacts on perceived behavioral control. On the other hand, only organic knowledge of individuals has a significant positive impact on subjective norms. Further, as the TPB suggested, attitudes, subjective norms and perceived behavioral control predict intention to purchase organic food significantly, and the attitudes toward organic food emerges as the most important factor followed by perceived behavioral control and subjective norms. Last, actual organic food purchasing behavior can only be explained by behavioral intention, and intention can explain a large proportion of variation (91.6 percent) in actual behavior. However, when the path from the trust to perceived behavioral control is extracted, trust has a significant direct impact on behavior. Otherwise, it affects actual behavior via perceived behavioral control, which implies a mediating relationship.

In the observed variable model, socio-demographic characteristics are included in the model to gain better insight in explaining organic food purchasing behavior of individuals. The hypothesized model fits well with the data, and the findings suggest that organic knowledge, health consciousness, and food safety concern have positive impacts on attitudes in line with the results of the latent variable model. Also, organic knowledge, health consciousness, and family income affect subjective norms positively. Age, family income, organic knowledge, health consciousness, and trust factors also have positive impacts on perceived behavioral control. Further, in line with the TPB, attitudes, subjective norms, and perceived behavioral control are found to have positive impacts on behavioral intention to engage in organic food

purchasing behavior. Different from the latent variable model results, along with the behavioral intention, perceived behavioral control and trust have positive direct impacts on actual organic food purchasing behavior of individuals as the hypothesized model suggested. Further, the relationship between trust and behavior is mediated by perceived behavioral control and intention.

The current study aims to contribute to the existing literature in several aspects. First, the main contribution of the study is to examine the extension of the TPB by incorporating food safety concern, health consciousness, trust, and organic knowledge as background factors for organic food purchasing behavior of individuals. Thus, the predictive ability of the extended model could be improved. Second, the direct impact of trust on actual behavior is examined to fill the intention-behavior gap. Since the TPB focuses mainly on the motivational processes, which determines the formation of a behavioral intention and less on the volitional processes, we extend the model by investigating the role of trust considering volitional processes determining how behavioral intentions are transformed into actual behavior (Conner and Armitage, 1998). Thus, the model could take into account both motivational and volitional influences by including the trust as a separate construct. Third, along with the latent variable model, the observed variable model is also used to get a better understanding of individuals' organic food purchasing behavior, and socio-demographic characteristics are included in the model. As a background factor, family income is found to positively affect subjective norms and perceived behavioral control while age is found to have a positive impact on perceived behavioral control. In other words, as family income increases, individuals feel to have more control over their organic food purchasing decisions, which removes an important barrier in organic food purchasing. These background factors that are incorporated into the TPB model help us to get a better understanding the origins of attitudes, subjective norms, and

116

perceived behavioral control. Thus, we could get better insight into individuals' organic food decision making.

However, there is some discrepancy between the results of latent and observed variable models. In the structural model, trust and perceived behavioral control are found to have significant indirect effects on actual behavior. However, contrary to the expectations, no significant direct effect on behavior could be found. In the observed variable approach, both direct and indirect impacts of trust and perceived behavioral control are found to be significant on actual behavior. The discrepancy between two findings in mediation models can be attributable to the accuracy precision trade-off in the latent variable approach. Latent variable models consider the measurement error by separating the variance common to all the indicators of a corresponding construct from the variance unique to a corresponding indicator. This separation enables that latent variables are free from the measurement error. Further, the estimates of direct and indirect effects in mediation analysis are not statistically biased (Hoyle and Kenny, 1999; Kline, 2004), which leads to an increase in accuracy. However, this increase in accuracy generally reduces the precision in latent variable models since the standard error of unbiased estimates of latent variables are mostly larger than those of the biased estimates produced by observed variable models. Therefore, latent variable models give more accurate estimates in mediation analysis, yet these estimates are more likely to vary across studies. Although the latent variable approach can boost power by reducing the estimates caused by measurement error, larger standard errors reduce power, which may cancel the power boost provided by a larger estimated effect. Thus, one can observe an apparent significant indirect effect based on a biased observed variable approach, yet one can observe a larger unbiased estimate in latent variable approach, which is no longer statistically significant (Ledgerwood and Shrout, 2011).

As a concluding remark, the present study draws attention to the key determinants that identify organic food purchasing behavior of individuals from

a psychological framework. By doing so, it reveals the dependency relationships among constructs, and finally, it defines the steps of a psychological decision-making, which helps us to understand better individuals' decision making processes for organic food purchasing, which enables us to get a deeper understanding concerning the motives of individuals while making organic food purchasing decisions. To understand individuals' psychological decision-making processes enables policymakers to make the required interventions that may increase organic food consumption in the domestic market. The increase in organic food consumption triggers organic production activities, which creates a social impact throughout the country.

One of the potential limitations of the study is that we had to extract behavioral, normative, and control beliefs from the model. Since the correlation between behavioral beliefs and attitudes, and normative beliefs and subjective norms are extremely high, model fit results seem quite poor. Therefore, we could not identify the impacts of belief components on the model constructs. Belief composites may be considered in predicting organic food purchasing behavior for further researches.

Another limitation is that the sample of the study consists of only the consumers who have already purchased any kind of organic food. Since we investigate the motivations of individuals in organic food consumption, we only collect the data from organic food consumers. However, it is also crucial to reach the consumers who have not purchased any organic food before, and the possible reasons why these consumers do not prefer organic foods should be detected, and potential barriers should be explicitly presented. Since the main aim of the study is to become widespread of the organic and locally grown food market, potential barriers to prevent organic food purchasing should also be detected in detail. Further, the sample of the study may not be very representative since only the customers of the Ipek Hanim's Farm were included in the study. Due to the financial limitations, only a part of organic consumers participated in this study. It would be better to conduct this study throughout

Turkey, and a more representative sample should be analyzed for further researches.

1.7. Managerial Implications

The findings of the study suggest some specific managerial implications for organic and local food producers. As the study's findings revealed, several concepts motivate consumers to buy organic food. Specifically, health is considered one of the central issues in individuals' food purchasing decisions. The people who have higher health consciousness much prefer organic food due to their self-health awareness and health motivation. Therefore, local organic food producers should emphasize the contributions of organic food consumption to individuals' health and well-being. Producers could refer to scientific studies or technical information to inform individuals regarding the potential health benefits of organic foods such as richer in vitamins and minerals (Lee and Goudeau, 2014), and to reduce the risk of the specific type of cancers such as non-Hodgkin lymphoma (Bradbury et al., 2014).

Food safety is another concept while individuals are engaged in food buying decisions. It is evident that there is a public concern over food safety issues, specifically pesticide residues on food (Williams and Hammit, 2001). Consumers perceive higher risks associated with consumption and production of conventionally grown products, and they perceive a significant reduction in pesticide-related risks when they consume organically grown products rather than conventional (Williams and Hammit, 2001). Our results also reveal that the individuals who have higher food safety concern much prefer to buy organic foods. This finding may suggest a recommendation to the government agencies to take necessary precautions. More specifically, they should regulate agricultural activities by controlling the usage of synthetic manure, hormones, and pesticides in food production more strictly to reduce food safety concern of consumers. Further, organic food producers should showcase that there could

be a significant reduction in pesticide-related risks when consuming organic foods.

Another concept promoting individuals to buy organic food is trust to the other parties, in other words, the higher trustability of food supplier leads individuals to buy organic foods more. Trust is a prerequisite for the relationship building that is necessary to encourage organic purchasing (Cheng et al., 2008; Bonn et al., 2016) and some studies assert that a higher level of trust is associated with better relationships between buyers and sellers (Doney and Cannon, 1997; Emiliani, 2000). Our findings also suggest that trust does not have only an indirect effect on actual behavior mediated by perceived behavioral control and intention, but also it has a direct impact on behavior. This finding implies that commitment to retailers or producers is essential in purchasing organic food. For this, they need to establish more powerful relationships with customers. Since trust is based mostly on interpersonal relations or references rather than evidence particularly pronounced in Eastern cultures (Kantamaturapoj et al., 2012), personal trust should be relatively more important in practice while system trust is less critical in the studied culture (Nuttavuthisit and Thogersen, 2017). Although authorized institutions label certified organic products, a group of people may not trust enough this labeling system. Instead, they prefer to shop from local farms making production in line with organic principles without any labeling that they trusted. Therefore, policymakers should also consider this pattern of consumers, and should promote the local production that consumers have trusted.

Last, knowledge about organic food that individuals have also played an important role in buying organic food. This finding may offer valuable implications for policymakers. They should inform consumers regarding the potential benefits such as individual health, environmental benefits, and animal welfare of organic foods. As our study's findings suggested, the individuals, who have more information about organic food, also much prefer to buy organic food. Biel et al. (2005) suggest that a behavioral change requires a conscious

decision, which means individuals take action depending on what is present in their mind. Therefore, prompted information presented to the individuals may be beneficial while possible new decisions are made.

Another important finding is the strong positive correlation between attitude and intention to buy organic food which might be a useful implication for these local firms. Our findings suggest that knowledge about organic foods affects individuals' attitudes toward organic food purchasing behavior positively. It is a challenging and long-term process to change individuals' attitudes, so the local firms may provide required information about organic food through electronic, printed or social media, and they should make regular campaigns to deepen consumer understanding of organic food. As well as health benefits of organic food, consumers should also be informed that organic production practices are beneficial for the environment, animal and plant health, underground water and soil. Thus, individuals' attitudes may change by building trust in organic food (Chen and Hung, 2016), which considerably contributes to sustainable agricultural activities.

Subjective norm is also found to be a significant predictor of intention to buy organic food. Dahlstrand and Biel (1997) support this finding, and they assert that social norms are not only influential in an early phase of behavioral change, but they may also be important in terms of proceeding with new behavior. Further, they suggest that information campaign may help to stimulate behavioral change. These efforts may also develop the organic market.

Last, perceived behavioral control implying the perception of ease or difficulty in performing the behavior is found to have a significant influence on intention. Therefore, local producers should be careful about the potential barriers such as high prices and lack of availability that prevent consumers from buying organic products and repeat purchasing.

CHAPTER 2

INDIVIDUAL VALUATIONS FOR ORGANIC EGG PRODUCT: AN EXPERIMENTAL EVIDENCE

2.1. Introduction

The first essay in this thesis deals with the motivations of individuals in buying organic food, and which factors are influential in their buying decisions. As the findings suggested, attitudes, subjective norms, and perceived behavioral control variables, which are the constructs of the Theory of Planned Behavior (TPB, Ajzen, 1991), are found to be significant on buying intentions of individuals, and in turn, actual behavior. As well as the TPB constructs, trust, food safety concern, health consciousness, and knowledge about organic food are found to have significant impacts on organic food purchasing behavior. The inclusion of these factors to the original TPB model also provides better model fit results, and the model could considerably be improved. Thus, organic food choice of individuals could be better understood from a psychological perspective based on a well-established theory.

However, it is still unknown how much individuals are ready to pay for the benefits that organic foods proposed. To understand for which attribute individuals are willing to pay more and how much they are ready to pay, an experimental investigation is performed in this second essay. The present study aims to compare consumers' willingness to pay estimates for each attribute in a conventional non-hypothetical choice experiment, a non-hypothetical choice experiment with the Becker-DeGroot-Marschak (hereafter BDM, Becker, DeGroot, and Marschak, 1964) treatment, and their reservation prices elicited with the BDM mechanism to attain accurate valuations.

This study contributes to the organic food market in Turkey in several aspects. First, eliciting truthful willingness to pay estimates from individuals is of great importance. Even if the experiment has a non-hypothetical nature, which means the individuals are given real economic incentives, individuals may not make their food choice preferences as in the real-life situation. Therefore, the second essay tries to obtain more realistic valuations for food products by comparing three elicitation methods, which are the conventional non-hypothetical choice experiment, the non-hypothetical choice experiment with BDM treatment, and BDM mechanism in which individuals give their reservation prices. Then, we suggest that the prompted information related to the attributes of the product plays a significant role and it increases the individuals' valuations. Last, we reveal the individuals' valuations on organic products in attribute basis.

Individuals' consumption patterns have started to change due to food safety, health, environmental, and some other concerns. Alternative production methods for food products are increasingly developed to eliminate these concerns. However, the ones who have these concerns are quite confused regarding how they make choices among those alternatives, and how much these products are trustworthy. For organic production method, certain requirements and regulations are determined during the production and processing, and some institutions certify these products. For example, the United States Department of Agriculture (USDA) developed some standards for organic food products, and these products are certified with USDA labeling. Further, the European Union (EU) regulated organic food production, certification, and labeling by determining certain principles and procedures. In Turkey, organic agricultural activities are also regulated by the Republic of Turkey Ministry of Food, Agriculture and Livestock and these products should be certified with organic labeling. As well as certified organic foods, there are local producers and farmers that make products with organic grains, but some of them are not certified. Non-certified organic means that the production

system or farm that produces the food products is not certified by a third party, but the farm still used organic production methods (Zheng, 2014). In the present study, we also try to examine the factors that significantly affect individuals' organic food preferences, and how they value them for each attribute they proposed. For this, we propose two product alternatives to the participants of the study. Since the term "organic" can be used both the products with certified and the products made with organic grains, we have made a distinction between them, and we categorize the products as organic with certified (authorized certification) and grown organically but not certified (local organic). Thus, individuals' preferences for different types of organic products are elicited, and the study discusses whether individuals trust organic products with certified or they prefer to buy locally produced ones with organic grains and whether they are willing to pay a price premium.

As it is well known, the products that are named as organic, green, locally produced, and eco-friendly are more expensive than their conventional counterparts. Therefore, people should be convinced that these products have a number of benefits such as for individual health, society, other organisms, and the environment to pay a price premium. However, it is not known that how individuals value the associated attributes of these products, and which characteristics have priorities for them. The study also examines the food choice of individuals by eliciting their willingness to pay for each attribute including health, environmental friendliness, and animal welfare claims. The health claim is one of the most critical motives in organic product preferences of individuals. Organic food consumption is found to provide high incidence of vitamin C, magnesium, iron, and phosphor (Crinnion, 2010) to decrease the risks of non-Hodgkin lymphoma (Bradbury et al., 2014), obesity and cardiovascular diseases (Forman and Silverstein, 2012). Further, since organic foods contain a low degree of nitrate, organic food consumption decreases the cancer risks related to digestive system (Williams, 2002). Another attribute which is highly important for consumers is whether the products are environmentally friendly.

Organic practices are observed to prevent global warming, and thus, climate change by decreasing the greenhouse gas emission in the atmosphere and contribute the environment protection (United Nations Food and Agriculture Organization, 2017). Further, organic practices protect animal health by using clean materials and techniques in agriculture.

Last, the effect of information is measured on individuals' preferences and valuations by eliciting their willingness to pay a within-subject information treatment. Thus, whether the prompted information about certification system of product labels, trust to producers, production methods, health claim, environmentally friendly claim, and animal welfare claim of the organic products significantly affect individuals' valuation is mainly examined.

The remainder of the study is organized as follows: Some background information regarding consumer willingness to pay for organic and locally produced organic products is given, followed by a presentation of the experimental design, sample, econometric model, and results. Last, conclusions and discussions are presented.

2.2. Background Information on Consumers' Willingness to Pay

There is an extant literature examining how individuals value organic and locally produced products and the attributes associated with these products. Jolly (1991) reports that consumers are willing to pay a 37 percent price premium for organic products in the US. In addition, Goldman and Clancy (1991) state that an important part of the survey participants in New York is ready to pay a 100 percent price premium for a residue-free product. Millock et al. (2002) also report that respondents are willing to pay a price premium for organic products in Denmark. Batte et al. (2007) suggest that consumers are willing to pay premium prices for organic foods, even those with less than 100 percent organic ingredients. Loureiro and Hine (2002) suggest that products with locally grown, GMO-free, and organic labels can be sold at premium

prices. Hu et al. (2009) posit that local products and organic formulations generally receive positive willingness to pay across all products.

The certification system is also valued by individuals. Loureiro and Umberger (2007) highlight that consumers give more value to certification of USDA food safety inspection than any of the other choice set attributes, including country-of-origin labeling, traceability, and tenderness. Yue et al. (2009) conclude that 75 percent of the participants are willing to pay more for organic than for conventional apples given the identical appearance. Campell et al. (2010) also assert that organic labeling generates a premium.

An increasing number of studies investigate consumer preferences among organic, locally produced, and conventional foods, and try to understand why consumers prefer these products, and how they value them. Further, the increasing popularity of the local food orientation leads researchers to investigate willingness to pay (WTP) of individuals for locally grown food products (Darby et al., 2008; de Magistris and Gracia, 2008; Goodman, 2003; Hu et al., 2009; Sacchi et al., 2015; Seyfang, 2006; Bazzani et al., 2017). Contrary to organic foods, there is no universally determined definition for local food (Bazzani and Canavari, 2013; Gracia, 2014; Bazzani et al., 2017). However, as several researchers suggested, the local food concept has widely been associated with organic production (Campbell et al., 2013; Zepeda and Deal, 2009) although organic foods are not necessarily produced locally (Bazzani et al., 2017). Although some individuals perceive local and organic food products are similar, some others can make a distinction between them, and their preferences differ from others. Further, while some individuals trust the labels of the organic certification system, the others trust the relationship that is established with the owners of the local farms even if they have no organic certification. Since the organic food market has become relatively standardized and globalized, consumer preferences shift from organic to local food products (Adams and Salois, 2010; Campbell et al., 2013). Besides, local

food is defined by some parts as the "new organic" (Adams and Salois, 2010; Campbell et al., 2013).

Health claim and food safety of organic, natural, and local products are considered among the most important attributes in food preference (Huang, 1996; Botonaki et al., 2006; Truong et al., 2012; Bryla, 2016; Lockie et al., 2002; McEachern and Willock, 2004; Marian et al., 2014; McEachern and McClean, 2002; Michaelidou and Hassan, 2008). Since individuals perceive these products are healthier and safer, they are willing to pay more on them. Truong et al. (2012) report that consumers' willingness to buy are positively associated with health and safety issues. Chang et al. (2012) investigate marginal WTP for four salient attributes including taste, price, soy protein, and health claims. While taste is found as the dominating attribute driving consumers' WTP for soy food products, consumers give little additional value for a specific health claim. Canavari and Nayga (2009) assess consumers' willingness to pay for genetically-modified food products with two types of benefits which are reduced pesticides and nutritionally enhanced. Their findings suggest that the majority of Italian consumers are not willing to buy genetically-modified food products even if they are nutritionally enhanced. Knowledge of science and trust in scientists are found to affect Italian consumers' willingness to buy GM products consistently. D'Souza et al. (2007) suggest that consumers are willing to pay a higher price for green goods only if the quality is higher than conventional goods.

Consumers are also becoming more aware of the environmental issues (Vermeir and Verbeke, 2006; De Marchi et al., 2016), and they are more informed about the possible damages of the conventional agricultural production methods for the environment. Therefore, these consumers are more likely to pay higher price premiums than those are unaware of the environmental problems caused by agricultural activities. Several findings reveal that consumers give higher values to organic products not just due to the health issues, but also because they perceive them to be more environmentally

friendly (Williams and Hammit, 2000, 2001; De Marchi et al., 2016). Individuals are ready to pay more for reducing undesirable environmental effects of fish farming, and they are willing to pay a premium for eco-labeled farmed seafood.

Animal-welfare which is one of the moral issues in food buying is mainly considered by consumers, and many consumers shift their attention to buy organic or local food. Animal welfare considered as one of the ethical considerations in making food choice has a strong influence on willingness to pay (Bennett et al., 2002). Individuals with highly concerned about animal-welfare are more likely to pay a higher price premium for animal welfare-labeled salmon (Olesen et al., 2010). Solgaard and Yang (2011) report that about half of the Danish respondents are willing to pay a price premium for farmed seafood with animal welfare traits.

Information also plays an essential role in individuals' buying decisions. Gracia and de Magistris (2007) suggest that organic product knowledge is one of the main determinants of organic purchasing intention of individuals. As the levels of objective knowledge regarding organic food increases, individuals have a more positive attitude towards organic food, which has a positive impact on organic consumption behavior (Aertens et al., 2011). Gifford and Bernard (2011) compare individuals' valuations for organic and natural chicken breasts before and after information treatment regarding USDA standards for labeled products in an auction experiment setting. Their findings suggest that 50 percent of the subjects give considerably higher bids for organic chicken breast after receiving information. Loureiro et al. (2002) also find that willingness to pay of consumers are higher for eco-friendly labeled apples. Bienenfeld (2014) finds that organic informational treatments positively shift consumers' willingness to pay for organic attributes, and when consumers are prompted with information regarding official certification, premiums become higher.

The influences of socio-demographic factors have been widely examined on the willingness to pay of individuals for organic, natural, and local

products. For example, Thompson and Kidwell (1998) find that families with children are more likely to purchase organic products than those without children. Govindasamy and Italia (1999) conclude that females with higher annual incomes, younger individuals, and those who usually or always buy organic produce are more likely to pay a premium for organically grown fresh produce. They also state that the likelihood of paying a premium decreases as the number of individuals in the household increases. Hu et al. (2009) find that younger and more educated consumers would like to pay more for an organic product. On the other hand, Loureiro and Hine (2002) find a negative relationship between age and willingness to pay for organic food.

Further, willingness to pay of individuals may differ across elicitation methods. For example, Lusk and Schroeder (2006) reveal that WTP estimations for beef steaks in their CE are found to be more than twice as high as that in a BDM experiment. Also, a significant difference in WTP estimates for cured ham is found between CE and kth price auction (Gracia et al., 2011). Hamukwala et al. (2018) also compare BDM method and non-hypothetical choice experiment in estimating willingness to pay for a non-market good. In the BDM experiment, the group of individuals with more training opportunities than the others gives higher bids. On the other hand, in the non-hypothetical choice experiment, they reduce the estimated WTP due to their lexicographic behavior. On the other hand, Banerji et al. (2018) make a comparison of consumers' WTP among BDM, kth price auction, and CE, and they find no evidence of economically meaningful differences in WTP.

2.3. Methodology

2.3.1. Questionnaire

Before eliciting individuals' willingness to pay for the presented products and attributes, a short questionnaire is employed to reveal their perceptions about the importance of the given attributes of organic products.

The participants are introduced 14 items (adapted from Krystallis et al., 2006) related to organic products, including price, health claim, environmentally friendliness, animal welfare, and they are asked to rate the items on importance by using the five-point Likert scale ranging from 1 = very low importance 5 = very high importance. Further, their actual organic food purchasing behavior and its frequency are asked. Then, their knowledge level about organic products and their trust levels on organic product certification are asked by using the seven-point Likert-type scale. Further, their risk attitudes, in general, are asked by using the eleven-point Likert-type scale from 0 to 10. Socio-demographic profiles (age, gender, income) of the participants are also elicited.

2.3.2. Product

Organic meat, poultry, and eggs are made from animals raised under organic practices defined by USDA's national organic standards. All organically raised herds and flocks must be raised separately from their conventional counterparts. These animals cannot receive growth-producing hormones or antibiotics. They may get preventive medical care, such as vaccines, and dietary supplements of vitamins and minerals. They should be feed 100 percent organically grown feed, free of animal byproducts. Living conditions must be provided suitable for animals' health and natural behavior. Outdoors, shade, exercise areas, fresh air, and direct sunlight should be accessible and suitable to their species and stage of production. The producer must manage manure in a way that does not contribute to soil, water, or crop contamination. (Dimitri and Oberholtzer, 2009). In the scope of the current study, the egg product was chosen since it was a regularly consumed product by nearly all kinds of people. Also, it is available in conventional and natural product supermarkets, marketplaces, and local farmers market, and it can be produced by using different types of production principles.

2.3.3. Experimental Design

2.3.3.1. Choice Experiment

Choice Experiment (CE) is one of the most common stated-preference approach preferred in food marketing to elicit individuals' WTP for a certain good or service by considering different attributes and attribute levels (Gao and Schroeder, 2009; Bazzani et al., 2017). The frequent use of CEs might be attributable to certain factors. First, CEs are considered as flexible since they enable to a simultaneous valuation of various attributes. Second, CEs are consistent with the random utility theory (Ben-Akiva and Lerman, 1985) and Lancaster's (1966) theory of consumer's demand suggesting that individuals can derive utility from consumption of attributes embodied in a good. Third, CE scenarios mimic consumers' actual purchasing decision (Lusk and Schroeder, 2004). Since CE scenarios can closely reflect real life situations, they are less prone to hypothetical bias in WTP estimates (Lusk and Schroeder, 2004).

Lusk and Schroeder (2004) designed an experimental market with pre-determined prices to elicit WTP of individuals for differing quality attributes. They proposed five types of beef to the subjects of the study, and the subjects made their choices for seventeen pricing scenarios. The study also compared non-hypothetical and hypothetical responses to CE scenarios in terms of incentive compatibility. In both treatments, procedures and scenarios are all identical, yet in hypothetical scenarios, the subjects were told that an actual payment for the steak would not occur. To induce real economic incentives, the subjects assigned to the non-hypothetical treatment were given information about when they responded to all the questions in the CE, one of the questions would be randomly drawn as binding, and each subject had to purchase the steak they chose in the binding scenario and pay the posted price in that scenario. In the experiment instructions, the subjects were informed that an actual payment would occur for the binding scenario, and each scenario should be carefully

evaluated. Further, each scenario had an equal chance to be a binding scenario, and they were informed that they could also choose the no-buy option. If they chose the no-buy option in the binding scenario, no purchase would be made. The non-hypothetical choice experiments are very close to real life situations that consumers faced in grocery stores every day (Alfnes et al., 2006).

Several researchers posit that hypothetical choice experiments may not reflect the real choices of the individuals, and they lead hypothetical bias in the estimations of individuals' preferences (Cameron et al., 2002). Since individuals are not incentivized with an economic commitment, they are more likely to pay higher prices than they would actually pay (Lusk and Shogren, 2004). Several studies have shown that individuals' willingness to pay is significantly higher in hypothetical studies than non-hypothetical studies (Chang et al., 2009; Lusk and Schroeder, 2004; Yue et al., 2009). On the other hand, Zanoli (1998) asserts that surveys generally underestimate the real amount of the premiums because of the respondents' free-riding behavior. In the real market, consumers often pay much more premiums for organic products. Therefore, several researchers have started to use non-hypothetical or real choice experiments in order to reduce the hypothetical bias by giving the participants of the study real economic incentives (Gracia, 2014; Lusk and Schroeder, 2004; Alfnes et al., 2006; Lusk et al., 2008; Chang et al., 2009). In real choice experiments, in general, after all the choice scenarios have completed, one of them is randomly drawn as binding, and each participant has to buy the chosen alternative in the binding choice scenario and pay the price for the selected option. This procedure has been employed by several studies, and they show that giving real economic incentives provides truthfully for revealing their preferences (Alfnes et al., 2006; Chang et al., 2009; Lusk and Schroeder, 2004).

The current study also employs a non-hypothetical choice experiment where the subjects are presented different choices among two egg product alternatives differentiated by five attribute categories: type of product (organic

with certified and grown organically but not certified), price (13TL, 17TL, 21TL, 25TL), health claim (yes, no), environmental friendliness (yes, no), and animal welfare (yes, no). Certified organic products are labeled by the institutions authorized by the Ministry of Food, Agriculture, and Livestock of Turkey. The products that have an organic logo on them must be satisfied with certain requirements including organic farming, distribution, and processing. The products grown organically, but not certified are also compatible with organic agricultural practices, and these products are generally produced by the local farmers, and producers by using local grains without using any fertilizers, chemicals, and hormones during the production processes. The health claim is specified in general as that organic food consumption decreases the risk of chronicle and vascular diseases, certain types of cancers, a hormonal disorder in children, learning disorder in children.

Specific to organic egg product, the health claim is specified as that the egg product contains omega three fatty acids and a higher level of A+E vitamins with a positive influence on the cardiovascular system (Zakowska-Biemans and Tekien, 2017). The environmentally friendly claim is specified in general as that since fertilizers and chemicals are not used during the production of organic food products, environmental pollution decreases. Carbon output in the atmosphere which results in global warming reduces, and provides a public benefit. Specific to egg organic egg product, environmentally friendly claim is specified as that organic egg products produce less carbon output in the atmosphere than their conventional counterparts, which is favorable for decreasing global warming. Animal welfare claim is specified in general as that organic agricultural practices aim to prevent the pollution of water, soil, and environment, which also provides a positive contribution to animal health by using clean materials and techniques. Specific to organic egg products, animal welfare is protected by using clean materials and techniques during the production.

The prices of egg products are determined by searching several grocery stores to reflect real market prices. However, the suggested price range was selected much wider than the actual market prices to prevent the subjects from considering the differences in the prices as irrelevant (Bazzani et al., 2017). Table 27 demonstrates the attributes and attribute levels for the egg product.

Table 27. Attributes and Attribute Levels

Attributes	Attribute Levels
Price	13TL
	17TL
	21TL
	25TL
Type of Product	Certified Organic
	Grown organically, but not certified (locally produced)
Health Claim	Present
	Absent
Environmental Claim	Present
	Absent
Animal Welfare	Present
	Absent

Note: TL (Turkish Lira)

A full factorial design including all the possible combinations of the selected attribute levels enables to estimate all the main effects and all possible interaction effects. However, as the number of attributes and attribute levels increase, it will be practically impossible to ask all the scenarios to the subjects of the study. To decrease this complexity, a fractional factorial design should be selected from the full factorial design, and an orthogonal design is generally preferred since orthogonal designs imply that the attributes are not correlated across the profiles (Jansen et al., 2011).

According to the selected product attributes and their levels, a full factorial design generates a total of 64 possible product profiles (2 product labels × 2 health claim × 2 environmentally friendly × 2 animal welfare × 4

price). However, asking all the scenarios to the subjects of the experiment is not practical, so an orthogonal main effect plan (OMEP) to generate the profiles was preferred in the first option of the choice sets. The OMEP was calculated from SPSS orthoplan (also used by Gracia, 2014), and 12 profiles are generated.

Orthogonal designs allow that main effect estimates are uncorrelated under the assumption that all interactions are negligible (Addelman, 1962). On the other hand, Street et al. (2005) propose that in orthogonal designs, the estimates of the main effects or the main effects plus two-factor interactions from the choice experiment are more likely to be uncorrelated. In the current study, only main effects are considered, and two-factor and all other interactions are mainly neglected.

After generating the first choice profile with an OMEP, a systematic set of level change with a difference vector (1111) was chosen to get from the profiles in the first option to the profiles in the second option (Street et al., 2005; Bunch et al., 1996). The main advantage of this systematic approach is to make the design optimal for the estimation of main effects meaning that the efficiency of the design is high (Street et al., 2005).

Another desired property in choice experiment designs is level balance implying that all levels of an attribute appear an equal number of times in all the presented profiles (Jansen et al., 2011). Table 28 demonstrates an example of a choice set.

Each subject is asked to make choices for 12 choice sets. Each choice set consists of three alternatives. One of the alternatives is certified organic egg with changing attributes, the second one is non-certified organic with changing attributes, and the third one is none of the products presented. The inclusion of opt-out option more realistically reflects true market conditions (Sackett et al., 2012). Further, a no-choice option is recommended since it is an obvious element of choice behavior (Adamowicz et al., 1998).

Table 28. Example of a Choice Set

Attribute	Alternative A	Alternative B	Alternative C
Type of product	Organic with Certified	Grown organically, but not certified, locally grown	None of the alternatives
Health Claim		Contain omega three fatty acids and a higher level of A+E vitamins with a positive influence on the cardiovascular system	
Environmentally Friendly		Produce less carbon output in the atmosphere than their conventional counterparts which are favorable for decreasing global warming	
Animal Welfare	During the production of organic egg, animal health is protected by using clean materials and techniques		
Price	25TL	21TL	
I prefer*	☐	☐	☐

*please check only one of the alternatives

2.3.3.2. BDM Mechanism

On the other hand, BDM mechanism which is one of the most preferred auction methods in experimental studies is used in many other studies to elicit individual valuations (Starmer and Sugden, 1991; Hey and Lee, 2005; Drehmann et al., 2007). BDM is an incentive compatible mechanism that ensures an economic incentive for decision makers to demonstrate their true value of assets, and the mechanism is the optimal strategy that decision makers can reveal their true price of assets (Keller et al., 1993). Further, the mechanism is easy, and it avoids competition between subjects (Ginon et al., 2014). Further, Lusk et al. (2007) state that suboptimal bidding in BDM punishes both underbidding and overbidding symmetrically.

136

In the present study, we used the BDM mechanism in two ways. First, the BDM mechanism was used in a non-hypothetical choice experiment in order to determine the market price of the product. Second, we asked the subjects' reservation prices for the given choice tasks and they gave their WTP estimates for each alternative, and then made a choice among them.

2.3.3.3. Experiment Procedure

In the present study, a conventional real choice experiment, a real choice experiment with BDM treatment, and an experiment elicited the subjects' reservation prices with the BDM mechanism are performed by using a between-subject design approach. The experiments are taken place in three separate sessions. In the first session, a conventional choice experiment procedure is followed to elicit the subjects' willingness to pay. In the second session, the BDM mechanism is employed to elicit the subjects' willingness to pay for egg product. In the third session, choice experiment with BDM treatment is applied to elicit the subjects' willingness to pay for an egg product.

At the very beginning of the experiment, the subjects are informed about the experimental procedure, product alternatives, attributes, payment procedure, and elicitation method. Besides the participation gift (a pencil on which is written the name of the university), they are all given an initial endowment worth at 100 TL (Turkish Lira), and they are wanted to make their buying decisions with this budget. They were also informed that an actual payment would occur for the binding scenario, and each scenario should be carefully evaluated. Further, each scenario had an equal chance to be a binding scenario, and they were informed that they could also choose the no-buy option. If they chose the no-buy option in the binding scenario, no purchase would be made (Lusk and Schroeder, 2004).

For the subjects allocated to conventional choice experiment session, payment procedure is described as follows: After the subjects complete all the choice scenarios, one of the scenarios is randomly drawn as binding, and one of

137

the subjects will be randomly selected. For the binding scenario, the chosen subject pays the listed price in that scenario according to the chosen product alternative. The subjects allocated to choice experiment with BDM treatment is described as follows: After the subjects complete all the choice scenarios, a selling price is randomly drawn from a distribution of prices with support on an interval from zero to a price greater than the maximum prices that the subjects could pay (Noussair et al., 2004). The procedure is the same as the conventional choice experiment procedure except how the paid price will be determined for the chosen product (Bazzani et al., 2017). Last, the subjects allocated to the BDM experiment is described as follows: After the subjects complete all the choice scenarios, a selling price is randomly drawn from a distribution of prices with support on an interval from zero to a price higher than the anticipated maximum willingness to pay of the subjects (Noussair et al., 2004). If the randomly drawn price is lower than the posted price for the chosen product alternative in the binding choice set, then the subject buys egg product at a cost equal to the randomly drawn price. If the randomly drawn price is equal to or higher than the price indicated for the chosen product alternative in the binding choice set, the chosen subject cannot buy any product (Bazzani et al., 2017; Richards et al., 2014). In this point of the experiment, we had to make a modification in the payment procedure. Since the sample consists of the students, some of them may prefer cash money instead of a commodity, so they may not be willing to purchase any egg products although they normally consume them. To mimic the real-life situation, we have made a modification proposing that if they do not purchase any egg product, they may face a disease due to the lack of necessary protein intake with the probability that equals to the expected values the subjects are exposed. This intervention enables to prevent individuals give too low prices for egg products to retain their budgets more.

In the first stage of the experiment, the subjects are given 12 choice sets without providing any detailed information regarding the type of product, health claims, environmental claims, and animal welfare claims, and the subjects can

decide only according to the labels in the given alternatives. In the second stage of the experiment, they are given the prompted information about the production methods, and the claims of the health, environmentally friendly, and animal welfare. They are totally asked the same 12 scenarios, and thus, it is aimed to be examined the information effect on their preferences.

The current study emphasizes three main research questions. First, we compare three elicitation methods in terms of willingness to pay estimates of individuals with a between-subject design. Then, the information effect is tested on the subjects' willingness to pay estimates and their preferences. Last, we examine which attributes are significant for the subjects and how much they are ready to pay.

Table 29. The Subject Design and Research Questions

Experimental Design	Research Question
Between-Subject	Is there any significant difference among elicitation methods in terms of willingness to pay estimates?
Within-Subject	Does information treatment significantly affect willingness to pay estimates and preferences?
Within-Subject	Which attributes of organic products are significant for the subjects and how much they are ready to pay?

2.3.4. Econometric Models

2.3.4.1. Multinomial Logit Model

Choice experiments are based on the Random Utility Theory (Thurstone, 1927) suggesting that individuals try to maximize their utility when they make choices among different alternatives. A choice behavior study is identified as (1) the objects of choice and sets of alternatives available to decision-makers, (2) the observed attributes of decision makers, and (3) the model of individual choice, behavior, and distribution of behavioral pattern in

the population (McFadden, 1974). The choice that is preferred by the individuals provides them highest utility (Louviere et al., 2000; McFadden, 1974). In accordance with Lancaster's Consumer Theory (Lancaster, 1966), the utility of a product is assumed to consist of different product attributes. According to the random utility framework (Mc Fadden, 1974), a consumer's utility function can be specified as follows;

$$U_{ijk} = V_{ijk} + \varepsilon_{ijk} \tag{1}$$

where U_{ijk} is defined as the unobserved utility of individual i who chooses alternative j in choice situation k, V_{ijk} is defined as the observable or deterministic component of utility, and ε_{ijk} is unobservable or random component of utility.

Assuming that the data can be analyzed in a random utility framework, the utility of individual i of choosing alternative j in choice situation k can be described as follows;

$$U_{ijk} = \beta' X_{ijk} + \varepsilon_{ijk} \tag{2}$$

where X_{ijk} is the observed variables vector related to alternative j, and individual i, β' is the parameters vector which differentiates the choices, and ε_{ijk} is the unexplained portion of utility. Individuals are assumed to choose the alternative among the choice set that maximizes their utilities. For individual i, choosing alternative j within a choice set, C, the probability of choosing alternative j becomes equal to the probability of the utility of alternative j which is defined as $Uijk$ which is greater than or equal to the utilities of all other alternatives in the choice set.

$$Prob\ \{ind.\,i, alt.\,j, choice\ sit.\,k\} = \Pr(U\_ijk \geq U\_imk +$$
$$\varepsilon\_imk, for\ all\ m \in C, j \neq k \tag{3}$$

$$Prob\ \{ind.\,i, alt.\,j, choice\ sit.\,k\} = \Pr(V_{ijk} + \varepsilon_{ijk} \geq V_{imk} +$$
$$\varepsilon_{imk}, for\ all\ m \in C, j \neq k) \tag{4}$$

When the ε_{ijk} term is assumed to be independently and identically distributed, the probability of individual *i,* choosing alternative j, within the choice situation *k,* is specified by the multinomial logit model (MNL) as follows (Lusk and Schroeder, 2004);

$$Prob\ \{ind.\,i, alt.\,j, choice\ sit.\,k\} = \frac{\exp(\beta' X_{ijk})}{\sum_{m=1}^{J} \exp(\beta' X_{imk})} \tag{5}$$

MNL models are often preferred in choice modeling due to their convenience, but at the same time these models propose several assumptions such as (1) independent of irrelevant alternatives (IIA) implying that a change in the attributes of one alternative may change the probabilities of the other alternatives, (2) preference homogeneity in the sample meaning that the coefficients of all attributes in the utility function are assumed to be the same for all individuals, and (3) the assumption of independent errors over time (Phanikumar and Maitra, 2007; Van Loo et al., 2011).

The estimated model is used to calculate individuals' willingness to pay for each attribute. Willingness to pay for each attribute is calculated as the negative ratio of the partial derivative of the utility function for the related attribute, divided by the derivative of the utility function with respect to the price variable (Gracia et al., 2009; Morrison et al., 2002; Van Loo et al., 2011) specified as follows;

$$WTP_{attribute} = \frac{\frac{\partial U_{ijk}}{\partial attribute}}{\frac{\partial U_{ijk}}{\partial price}} \qquad (6)$$

Willingness to pay for each attribute is simply calculated as dividing the negative value of the coefficient of attribute n (β_n), to the price coefficient (β_p), specified as follows;

$$WTP_n = -\frac{\beta_n}{\beta_p} \qquad (7)$$

In the current study, the observed utility is estimated by the product attributes including, price (PRICE) which is coded as a continuous variable; certified organic egg (CERT) is coded as (1 0 0); locally produced non-certified organic egg (NON-CERT) is coded as (0 1 0); no buy option is coded as (0 0 1); health claim (HEALTH) is coded as a binary variable (1 if yes, 0 if no); environmentally friendly claim (ENVFRND) is coded as a binary variable (1 if yes, 0 if no); animal welfare claim (ANMWEL) is coded as a binary variable (1 if yes, 0 if no), ε_i is the unobserved portion of the utility, and utility function is illustrated as below;

$$U_{ijk} = \beta_{ijk} + \beta_{price}PRICE_{ijk} + \beta_{cert}CERT_{ijk} + \beta_{non-cert}NON-$$
$$CERT_{ijk} + \beta_{health}HEALTH_{ijk} + \beta_{envfrnd}ENVFRND_{ijk} +$$
$$\beta_{anmwel}ANMWEL_{ijk} + \varepsilon_{ijk} \qquad (8)$$

2.3.4.2. Tobit Model

For the BDM data, the common practice used in BDM studies was followed and a Tobit model censored at zero is estimated (Lusk and Shogren, 2007; Alponce and Alfnes, 2017). Further, we estimated a Tobit model with

left-censored observations where the latent variable becomes zero. The following Tobit model is described as follows:

$$WTP_i = \beta_i + \beta_{non-cert}NON - CERT_i + \beta_{health}HEALTH_i +$$
$$\beta_{envfrnd}ENVFRND_i + \beta_{anmwel}ANMWEL_i + v_i + \varepsilon_i \qquad (9)$$

where *WTPi* is the WTP of participant i; *vi* is the individual specific random term, and *εi* is the normally distributed error term.

2.3.5. Sample

The subjects of the study were recruited from students of the Middle East Technical University by using the Online Recruitment System for Economic Experiments (ORSEE) and poster announcement. A total of 95 subjects participated in the experiment in three different sessions. 32 subjects were assigned to the non-hypothetical choice experiment (nHCE), 34 subjects were assigned to the BDM experiment, and 29 subjects were assigned to the nHCE-BDM treatment.

Table 30 presents the descriptive statistics for the participants. The participants' ages ranged from nineteen to thirty-nine, with an average of twenty-three years. 46.3 percent of the participants were female, and average monthly household income was approximately 4,900 TL ranging from 1,000 TL to 14,000 TL.

Table 30. Descriptive Statistics for the Sample

Variable	Definition	N	Mean	Std. Dev.	Min.	Max.
Gender	Gender of the participants female=1; male=2		1.54	0.501	1	2
	Female	44				
	Male	51				
Age	Age of the participants (in years)		22.85	2.432	19	39
Income	Monthly household income of the participants in TL (Turkish Lira)		4,898.95	2,506.61	1,000	14,000

N=95

The participants are also asked to rate the given attributes of organic foods. As the percentages of the participants indicated, they perceive the properties of organic foods which are healthier (42.1 percent), pure/natural (45.3 percent), chemical residual-free (53.7 percent), and additive-free (48.4 percent) as very high importance while they perceive the properties of organic foods which are healthier (43.2 percent), fresher (54.7 percent), cleaner (40 percent), and more rich source of nutrients (44.2 percent) as high importance implying that the most important attributes are related to the individual's health. Further, they perceive the properties of organic foods which are more environmentally friendly (28.4 percent), more suitable for animal welfare (29.5 percent), more beneficial for soil (27.4 percent), more beneficial for underground water (28.4 percent), and less carbon output (29.5 percent) as moderate importance implying that environment-related, and animal-related attributes have of moderate significance for the participants of the study. 34.7 percent of the participants give moderate importance to the fact that organic foods are more expensive. Further, the average score for each attribute of organic food is reported. The attributes which are healthier, chemical residual-free, and pure/natural were considered to be the most important ones while the attributes which are more beneficial for underground water, less carbon output,

and more expensive were considered to be the least important ones by the participants of the study.

Table 31. Participants Ratings for the Attributes of Organic Food

Item	very low importance (%)	low importance (%)	moderate importance (%)	high importance (%)	very high importance (%)	Mean importance level for each item
Healthier	-	1.1	13.7	43.2	42.1	4.26
Tastier	1.1	12.6	33.7	31.6	21.1	3.59
Fresher	-	5.3	11.6	54.7	28.4	4.06
Cleaner	2.1	4.2	18.9	40	34.7	4.01
Pure/natural	1.1	4.2	18.9	30.5	45.3	4.15
Chemical residual-free	2.1	5.3	11.6	27.4	53.7	4.25
Additive-free	2.1	6.3	16.8	26.3	48.4	4.13
More rich source of nutrients	2.1	4.2	23.2	44.2	26.3	3.88
More environmentally friendly	4.2	8.4	28.4	33.7	25.3	3.67
More suitable for animal welfare	5.3	14.7	29.5	21.1	29.5	3.55
More beneficial for soil	4.2	14.7	27.4	30.5	23.2	3.54
More beneficial for underground water	9.5	17.9	28.4	27.4	16.8	3.24
Less carbon output	5.3	15.8	29.5	27.4	22.1	3.45
More expensive	6.3	15.8	34.7	25.3	17.9	3.33

N=95

46.3 percent of the participants never buy organic food, 13.7 percent of the participants seldom buy organic food, 25.3 percent of the participants sometimes buy organic food, 11.6 percent of the participants often buy organic food, and 3.1 percent of the participants always buy organic food. Their average information level about organic products is 3.98 while their average trust level in organic product certificate is 3.95 which are in moderate levels. Last, their average risk attitude, in general, is 5.95 indicating a moderate level of risk attitude.

145

Table 32. More Details about the Participants

Item	Percentage of the participants	Mean
How often do you purchase organic food?		
Never	46.3	
Seldom	13.7	
Sometimes	25.3	
Often	11.6	
Always	3.1	
Please indicate the level of information you have about organic products (asked with 7 point Likert-type scale)		3.98
Please indicate your level of trust in organic product certificate (asked with 7 point Likert-type scale)		3.95
Please indicate your risk attitude in general (asked with 10 point Likert-type scale)		5.96

N=95

2.4. Results

The hypothesized model is estimated using Multinomial Logit (MNL) specification for the nHCE and nHCE-BDM treatment, and Tobit Model for the BDM data with the software package STATA 13. Each participant completed 12 choice scenarios before information treatment and 12 choice scenarios after information treatment, and each scenario consisted of three alternatives (alternative A, alternative B, or none) resulting in 1152 and 1044 observations for the nHCE and nHCE-BDM treatment, respectively. Further, the subjects' willingness to pay were elicited for 12 choice tasks, and each consists of two alternatives resulting in 816 observations, and 408 observations for only the chosen alternative for the BDM experiment.

2.4.1. Multinomial Logit Model Results

Table 33 specifies the MNL results reporting that the estimated parameters, standard errors, and their significance for only attributes of the product. The overall goodness of the model fit was found to be significant with Pseudo R square values of 0.341, 0.416, 0.226, and 0.272 for the nHCE, and nHCE-BDM treatment, respectively, in the case of both without information and with information.

The Pseudo R square values indicate that the percentage of the total variability can be explained with the hypothesized multinomial logit models. The models were highly significant, as indicated by McFadden's adjusted Pseudo R square statistics (Louviere et al., 2000). Likelihood ratio tests were performed to test the null hypothesis that all the coefficients in the model were equal to zero. All the probability values from the Likelihood ratio tests were significant indicating that the coefficients were not jointly equal to zero in the hypothesized multinomial logit models. All the coefficients were also significant for the nHCE and nHCE-BDM treatment.

Since the opt-out option was taken as reference in the choice experiment, both the coefficients of certified and non-certified locally produced organic egg could be revealed. Both the attributes of the certified and non-certified locally organic were found as significant, yet there seems to be no significant difference between the organic egg with certified and the organic egg without certified. The constant term was found to be significant indicating that an individual would rather buy certified or non-certified organic egg than none at all. The price parameter was found to be negative indicating that an increase in price would decrease the utility of the egg product. Health, environmentally friendly, and animal welfare attributes played essential roles in the participants' food choices. Further, the highest utility increment occurs due to the presence of health claim, followed by the animal welfare claim, and environmentally friendly claim.

Table 33. Multinomial Logistic Model Estimates by Elicitation Method

Attributes	nHCE		nHCE-BDM Treatment	
	Before Info.	After Info.	Before Info.	After Info.
Certified Organic	2.933***	4.117***	1.732***	2.131***
	(.475)	(.519)	(.469)	(.485)
Non-certified Organic	2.977***	4.136***	1.491***	1.955***
	(.485)	(.525)	(.487)	(.505)
Health	2.255***	2.596***	2.113***	2.283***
	(.195)	(.217)	(.190)	(.202)
Environmentally Friendly	.633***	.667***	.589***	.745***
	(.189)	(.205)	(.188)	(.197)
Animal Welfare	1.477***	1.818***	.879***	1.199***
	(.199)	(.197)	(.198)	(.209)
Price	-.158***	-.228***	-.113***	-.147***
	(.022)	(.025)	(.022)	(.023)
Constant	-2.444***	-2.629***	-1.735***	-1.849***
	(.187)	(.203)	(.150)	(.156)
N	1152	1152	1044	1044
Log likelihood chi-square (6)	499.56	610.68	300.15	361.79
Probability	.000	.000	.000	.000
Pseudo R square	.341	.416	.226	.272
Log likelihood	-483.483	-427.926	-514.444	-483.625

Note. * p<0.10, ** p<0.05, *** p<0.001; Standard errors in parentheses.

Then, the MNL results reporting the estimated parameters, standard errors, and their significance by including information and trust levels of individuals regarding organic products, risk attitudes in general, gender, and household income are portrayed in Table 34. In this specification, information level regarding organic products, trust levels of individuals on certification of organic products, risk attitudes in general, gender, and household income were not found to have any significant impacts on individuals' choices.

Both the attributes of the certified and non-certified locally organic were found to be significant, yet there seems to be no significant difference between the organic egg with certified and the organic egg without certified. The

constant term was found to be significant indicating that an individual would rather buy certified or non-certified organic egg than none at all. The price parameter was found to be negative indicating that an increase in price would decrease the utility of the egg product. Health, environmentally friendly, and animal welfare attributes played essential roles in the participants' food choices. Further, the highest utility increment occurs due to the presence of health claim, followed by the animal welfare claim, and environmentally friendly claim.

The models were highly significant, as indicated by McFadden's adjusted Pseudo R-square statistics (Louviere et al., 2000). Likelihood ratio tests were performed to test the null hypothesis that all the coefficients in the model were equal to zero. All the probability values from the Likelihood ratio tests were significant indicating that the coefficients were not jointly equal to zero in the hypothesized multinomial logit models.

Table 34. Multinomial Logistic Model Estimates by Elicitation Method with Survey Data

Attributes	nHCE		nHCE-BDM Treatment	
	Before Info.	After Info.	Before Info.	After Info.
Certified Organic	2.933***	4.117***	1.732***	2.131***
	(.475)	(.519)	(.469)	(.485)
Non-certified Organic	2.977***	4.136***	1.491***	1.955***
	(.485)	(.525)	(.487)	(.505)
Health	2.255***	2.596***	2.113***	2.283***
	(.195)	(.217)	(.190)	(.202)
Environmentally Friendly	.633***	.667***	.589***	.745***
	(.189)	(.205)	(.188)	(.197)
Animal Welfare	1.477***	1.818***	.879***	1.199***
	(.199)	(.197)	(.198)	(.209)
Price	-.158***	-.228***	-.113***	-.147***
	(.022)	(.025)	(.022)	(.023)
Information Level	.001	.002	.000	.000
	(.081)	(.087)	(.097)	(.100)
Trust	-.000	-.000	-.000	-.000
	(.067)	(.072)	(.078)	(.081)
Risk Attitude	.000	.000	.000	.000
	(.043)	(.047)	(.039)	(.041)
Gender	.002	.004	.000	.000
	(.174)	(.187)	(.174)	(.181)
Income	.000	.000	.000	.000
	(.000)	(.000)	(.000)	(.000)
Constant	-2.445***	-2.653***	-1.736***	-1.850***
	(.502)	(.542)	(.535)	(.556)
N	1152	1152	1044	1044
Log likelihood chi-square (6)	499.56	610.68	300.15	361.79
Probability	.000	.000	.000	.000
Pseudo R square	.341	.416	.226	.272
Log likelihood	-483.483	-427.925	-514.444	-483.625

Note. * $p<0.10$, ** $p<0.05$, *** $p<0.001$; Standard errors in parentheses.

2.4.2. Tobit Model Results

Table 35 presents the Tobit Model results for the BDM data. In this specification, only the attributes of the organic products were included in the model. The response variable is the bid submitted to purchase organic egg products by each individual for each alternative. Since there are two types of organic product (certified and non-certified), only non-certified organic was included in the model, and it was compared to the certified organic alternative. Individuals' WTP estimates were significantly higher for non-certified organic products than the certified organic counterparts. Further, individuals valued health attribute at most followed by animal welfare and environmentally-friendliness, respectively. Last, the WTP estimates seem to differ after giving the prompted information to the subjects. While the WTP estimates of non-certified organic decreased, the WTP of health, environmentally-friendliness, and animal welfare attributes increased, which will be analyzed later.

Table 35. Tobit Model Estimates of the BDM Data

Attributes	Before Info.	After Info.
Non-certified organic (local)	2.012***	1.519***
	(.579)	(.647)
Health	4.671***	5.281***
	(.562)	(.629)
Environmentally Friendly	3.047***	3.257***
	(.562)	(.629)
Animal Welfare	3.209***	3.465***
	(.562)	(.629)
Constant	17.495***	18.197***
	(.604)	(.675)
Sigma Constant	7.912***	8.843***
	(.197)	(.221)
N	816	816
Log likelihood chi-square (4)	134.11	126.28
Probability	.000	.000
Pseudo R square	.023	.021
Log likelihood	-2835.94	-2921.879

Note. * $p<0.10$, ** $p<0.05$, *** $p<0.001$; Standard errors in parentheses.

Table 36 reports the Tobit Model results for the BDM data. In this specification, along with the attributes of the organic products, information and trust levels of individuals regarding organic products, risk attitudes in general, gender, and household income were included in the model for both in the absence and presence of information. The type of organic product (certified versus non-certified), health, environmentally friendly, and animal welfare attributes were found to affect individuals' WTP estimates significantly for both in the absence and presence of information. Each coefficient of attributes seems to change in the presence of information. It will be later examined whether the change is statistically significant.

Further, the information level that individuals have regarding organic products, gender, and household income were found to affect WTP estimates significantly. Women are more likely to pay higher prices for organic products and individuals with higher income are also ready to pay higher prices. Risk attitude was found to affect WTP estimates positively for only the model with provided information. While the sign of the risk attitude coefficient was negative in the absence of information, it turned out to be positive after getting information, which may be attributable to that individuals with higher risk attitudes were ready to pay more on organic products in the case of the prompted information. Self-reported information level of individuals also differed from before and after information situations. While it was found to be significant for both models, the sign of the coefficient turned out to be negative in case of the prompted information, which implies that individuals who have lower self-reported information level gave higher values on organic products in case of the prompted information.

Table 36. Tobit Model Estimates of the BDM with Survey Variables

Attributes	Before Info.	After Info.
Non-certified Organic	2.037***	1.536***
	(.541)	(.576)
Health	4.662***	5.247***
	(.525)	(.560)
Environmentally Friendly	3.066***	3.244***
	(.525)	(.560)
Animal Welfare	3.208***	3.450***
	(.525)	(.560)
Information Level	1.065***	-.789***
	(.263)	(.281)
Trust	.037	.089
	(.176)	(.188)
Risk Attitude	-.216	.746***
	(.154)	(.164)
Gender	-1.806***	-6.062***
	(.607)	(.647)
Income	.001***	.001***
	(.000)	(.000)
Constant	13.088***	18.736***
	(1.699)	(1.812)
Sigma Constant	7.390	7.879
	(.183)	(.195)
N	816	816
Log likelihood chi-square (9)	240.11	300.83
Probability	.000	.000
Pseudo R square	.041	.050
Log likelihood	-2782.937	-2834.603

Note. * $p<0.10$, ** $p<0.05$, *** $p<0.001$; Standard errors in parentheses.

After the subjects indicated their willingness to pay estimates for each alternative, we wanted them to choose one of the alternatives that they were presented. Table 37 illustrates the Tobit regression results for only the preferred alternative. The findings revealed that the willingness to pay estimates has increased to a considerable extent when only the chosen alternative of the subjects was considered. Contrary to the previous finding, WTP estimates

153

indicated that certified organic product does not significantly differ from the non-certified organic product. Consistent with previous findings, individuals valued health attribute at most followed by animal welfare and environmentally-friendliness attribute, respectively. Last, the WTP estimates seem to differ after giving the prompted information to the subjects, and WTP estimate for health attribute considerably increased after providing information to the subjects.

Table 37. Tobit Model Estimates of the BDM Data for Chosen Alternative

Attributes	Before Info.	After Info.
Non-certified Organic	.669	1.722
	(1.029)	(1.126)
Health	8.710***	15.386***
	(1.084)	(1.274)
Environmentally Friendly	5.882***	5.895***
	(.999)	(1.090)
Animal Welfare	6.483***	6.123***
	(1.010)	(1.094)
Constant	9.058***	4.972***
	(1.162)	(1.335)
Sigma Constant	9.739	10.485
	(.366)	(.399)
N	408	408
Log-likelihood chi-square (4)	149.51	214.99
Probability	.000	.000
Pseudo R square	0.0504	0.0709
Log-likelihood	-1409.828	-1407.732

Note. * $p<0.10$, ** $p<0.05$, *** $p<0.001$; Standard errors in parentheses.

Table 38 illustrates the Tobit regression results for only the preferred alternative, and in this specification, along with the attributes of the organic products, information and trust levels of individuals regarding organic products, risk attitudes in general, gender, and household income were included in the

model for both in the absence and presence of information. The type of organic product (certified versus non-certified) could not be found significant. However, health, environmentally friendly, and animal welfare attributes were found to affect individuals' WTP estimates significantly for both in the absence and presence of information.

Also, a remarkable increase was observed in health attribute in the presence of information, which might be attributable to that the subjects were exposed to health information first or extensive information concerning health was presented them compared to other attributes.

Further, gender and household income were found to affect WTP estimates significantly for both models. Women are more likely to pay higher prices for organic products and individuals with higher income are also ready to pay higher prices.

Risk attitude was found to affect WTP estimates positively for only the model with provided information. While the sign of the risk attitude coefficient was negative in the absence of information, it turned out to be positive after getting information, which indicates that individuals with higher risk attitudes were ready to pay more on organic products in the case of the prompted information. This finding is also compatible with the results of the model in which individuals valued two alternatives.

Different from the previous regression results, self-reported information level of individuals turned out to be insignificant in the presence of information as expected.

Table 38. Tobit Model Estimates of the BDM Data with Survey Variables for Chosen Alternative

Attributes	Before Info.	After Info.
Non-certified Organic	.672	1.011
	(.952)	(1.036)
Health	8.623***	13.672***
	(1.026)	(1.203)
Environmentally Friendly	5.485***	5.493***
	(.925)	(1.002)
Animal Welfare	5.466***	5.273***
	(.944)	(1.013)
Information Level	2.186***	.730
	(.458)	(.495)
Trust	.057	-.171
	(.312)	(.337)
Risk Attitude	-.132	.795***
	(.276)	(.294)
Gender	-2.454**	-6.296***
	(1.064)	(1.145)
Income	.000***	.001***
	(.000)	(.000)
Constant	1.780	3.048
	(2.895)	(3.129)
Sigma Constant	8.984	9.605
	(.337)	(.365)
N	408	408
Log likelihood chi-square (9)	213.84	285.34
Probability	.000	.000
Pseudo R square	0.072	0.094
Log likelihood	-1377.659	-1372.558

Note. * $p<0.10$, ** $p<0.05$, *** $p<0.001$; Standard errors in parentheses.

2.4.3. Willingness to Pay Estimates

In the nHCE and nHCE-BDM treatment, the participants compared the alternatives and preferred one of them while in the BDM method, the participants stated their reservation prices from their budget that was given to them. The estimates from the nHCE and the BDM experiments cannot be directly compared. In the BDM experiment, the participants give their bids directly which are interpreted as WTP specified as below (Lusk and Shogren, 2007):

$$WTP^* = BID_i = \beta X_i + \varepsilon_i \qquad\qquad (10)$$

where WTP* is the individual's willingness to pay, BID_i is the individual's bid; X_i is specified as a vector of explanatory variables; and ε_i is the error term.

In the nHCE, the participants do not give their bids directly on each attribute of organic egg, yet they make a choice among the given alternatives at different prices. Therefore, the regression coefficients do not directly reflect the participants' WTP. Instead, WTP per attribute is provided by dividing the attribute parameter by the negative value of the parameter for the price attribute after performing the regression (Lusk and Schroeder, 2006).

Table 39 presents the individuals' estimated WTP for organic egg products using three different elicitation methods. The comparison of the results across the elicitation methods proposed that the parameter estimates were similar in signs. However, the parameter estimates for health and animal welfare attributes are much higher in the nHCE and nHCE-BDM treatment than the parameter estimates in the BDM method while the parameter estimates for the type of product and environmentally friendly attributes are closer. While they gave more value to the attributes of health and environmentally friendly, they reduced the value of the animal welfare attribute for the nHCE and nHCE-BDM treatments. We reported WTP estimates for both all alternatives that the subjects

157

valued and only the alternative that they chose in the BDM experiment. The results for only preferred alternative provide higher WTP estimates than the estimates that the subjects valued the two alternatives. This may be attributed to that the subjects were previously informed about that only the chosen alternative would be effective in the final price determination. Since the market price is compared to the reservation price that the subject has given for the chosen alternative in the BDM mechanism, they probably did not consider the other alternative adequately.

Table 39. Willingness to Pay Estimates by Elicitation Methods

Attributes	nHCE		nHCE-BDM		BDM		BDM(chosen alternative)	
	Before Info.	After Info.	Before Info.	After Info.	Before Info.	After Info.	Before Info.	After Info.
Certified Organic	18.56	18.06	15.33	14.50	-	-	-	-
Non-certified Organic	18.84	18.15	13.19	13.30	2.04	1.53	0.67	1.72
Health	14.27	11.39	18.70	15.53	4.66	5.24	8.71	15.39
Environmentally Friendly	4.01	2.93	5.21	5.07	3.06	3.24	5.88	5.90
Animal Welfare	9.35	7.97	7.78	8.16	3.21	3.44	6.48	6.12
Constant	-15.44	-11.54	-15.40	-12.59	17.50	18.20	9.06	4.97

Note: nHCE denotes non-hypothetical choice experiment; nHCE-BDM denotes non-hypothetical choice experiment with BDM treatment; BDM denotes the reservation prices elicited with BDM, in TL= Turkish Lira.

We also tested whether any significant difference in WTP estimates across methods with ANOVA, and then performed Bonferroni Post-hoc test for multiple comparison. The findings revealed that WTP estimates for nHCE and nHCE-BDM treatment do not significantly differ from each other while WTP estimates of the BDM experiment differ from the nHCE and nHCE-BDM treatment significantly both in the absence and presence of information.

Table 40. Bonferroni Post-Hoc Test for WTP Comparison between Methods

Difference in Elicitation Method	Before Information			After Information		
	Difference in WTP	Std. Error	P-value	Difference in WTP	Std. Error	P-value
nHCE vs nHCE-BDM treatment	.932	.606	.373	.800	.646	.648
nHCE vs BDM	-7.057***	.582	.000	-8.833	.621	.000
nHCE-BDM treatment vs BDM	-7.990***	.598	.000	-9.633	.637	.000

Note. * p<0.10, ** p<0.05, *** p<0.001

2.4.4. Information Effect

Further, there seem differences in WTP estimates in case of the absence and presence of information, so to test whether individuals' WTP estimates statistically differ when the subjects are provided information, the Paired-sample t-test for dependent samples was performed in the BDM data. Table 41 presents the provided information to the participants regarding the attributes of the products had a significant impact on their estimates in the BDM experiment. This conclusion might be attributable to that the WTP estimates in the BDM experiment are direct bids of the participants. Therefore, they could reflect their valuation clearer in their choices. For the BDM method, information treatment had a significant impact on the participants' WTP estimates, and their values which were given for health, environmentally friendly, and animal welfare attributes increased while the valuation for the type of the product reduced.

Further, whether the prompted information had a significant impact on individuals' choices, the Wilcoxon Signed Ranks Test for dependent samples was employed in the nHCE and nHCE-BDM experiments. Since the WTP estimates for choice experiments are not direct bids, only their preferences on the alternatives were compared. Table 42 illustrates that the information effect on WTP estimates was not found to be significant in the nHCE and nHCE-BDM experiments.

Table 41. Paired Samples T-Test for Information Treatment

	Mean	Std. Dev.	Std. Error Mean.	N	t-value	Sig.
before info	21.940	8.532	.299			
after info	23.400	9.438	.330			
pair (before-after)	-1.466	6.965	.244	816	-6.011*	.000
For only chosen alternative						
before info	22.380	10.590	.524			
after info	24.050	12.004	.594			
pair (before-after)	-1.669	8.698	.431	408	-3.876*	.000

Note: * p<0.10, ** p<0.05, *** p<0.001

Table 42. Wilcoxon Signed Ranks Test for Information Treatment

Methods	Z-value	Asymp. Sig.	N
nHCE	-.426	.670	384
nHCE-BDM	-.178	.859	348

Note: nHCE denotes non-hypothetical choice experiment; nHCE-BDM denotes non-hypothetical choice experiment with BDM treatment.

Further, we investigated the information effect for pooled data in each elicitation method to see whether a significant difference has occurred in WTP estimates for each attribute. For this, the information effect was included in the models as a dummy variable, and interaction effects of information and each attribute were considered in the models. Table 43 illustrates the MNL Model estimates for the choice experiment data. For the model with conventional choice experiment data, information significantly affects the WTP estimates of certification and price attributes. WTP estimates of non-certified, health,

160

environmentally friendly, and animal welfare attributes were not affected by information that the subjects were presented.

Table 43. Information Effect on the Multinomial Logit Model Estimates

Attributes	nHCE	nHCE-BDM treatment
Certified Organic	2.933***	1.732***
	(.475)	(.469)
Non-certified Organic	2.977***	1.491***
	(.485)	(.487)
Health	2.255***	2.113***
	(.195)	(.190)
Environmentally Friendly	.632***	.589***
	(.189)	(.188)
Animal Welfare	1.477***	.879***
	(.199)	(.198)
Price	-.158***	-.113***
	(.022)	(.022)
Information Dummy	-.185***	-.114
	(.276)	(.216)
Interaction of info. and cert.	1.184*	.400
	(.703)	(.675)
Interaction of info. and non-cert.	1.160	.464
	(.715)	(.701)
Interaction of info. and health	.340	.171
	(.292)	(.277)
Interaction of info. and env.	.034	.156
	(.279)	(.272)
Interaction of info. and anm.	.341	.320
	(.297)	(.288)
Interaction of info. and price	-.070**	-.033
	(.033)	(.032)
Constant	-2.444***	-1.735***
	(.187)	(.150)
N	2304	2088
Log likelihood chi-square (13)	1110.24	661.95
Probability	.000	.000
Pseudo R square	0.379	0.249
Log likelihood	-911.41	-998.07

Note. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.001$; Standard errors in parentheses.

Further, we investigated the information effect for pooled data in the BDM method to see whether a significant difference has occurred in WTP estimates for each attribute. Table 44 illustrates the Tobit model estimates for the BDM data. For the model with BDM data for only chosen alternative, information effect increased only the WTP estimates of health attribute.

Table 44. Information Effect on the Tobit Model Estimates

Attributes	BDM for two choices	BDM for only chosen alternative
Non-certified Organic	2.037***	.703
	(.610)	(1.068)
Health	4.661***	8.795***
	(.592)	(1.125)
Environmentally Friendly	3.065***	5.921***
	(.592)	(1.038)
Animal Welfare	3.207***	6.523***
	(.592)	(1.049)
Information Dummy	.723	-3.738**
	(.901)	(1.746)
Interaction of info. and non-cert.	.505	.983
	(.862)	(1.523)
Interaction of info. and health	.578	6.454***
	(.838)	(1.658)
Interaction of info. and env.	.169	-.071
	(.838)	(1.476)
Interaction of info. and anm.	.233	-.451
	(.838)	(1.486)
Constant	17.473***	8.914***
	(.637)	(1.205)
Sigma Constant	8.334	10.114
	(.146)	(.271)
N	1632	816
Log likelihood chi-square (9)	270.32	373.06
Probability	.000	.000
Pseudo R square	.023	.062
Log likelihood	-5762.347	-2818.511

Note. * $p<0.10$, ** $p<0.05$, *** $p<0.001$; Standard errors in parentheses.

2.5. Conclusion and Discussion

In the second essay, we concentrate on the WTP estimates for organic egg product in an experimental setting using three different elicitation methods, namely, the conventional non-hypothetical choice experiment, the non-hypothetical choice experiment with BDM treatment, and the BDM mechanism where the reservation prices are directly elicited. The multinomial logit model results revealed that individuals are ready to pay a price premium for the organic egg products both for certified and non-certified. Also, health, environmentally friendly, and animal welfare attributes were found to significantly affect individuals' preferences for the nHCE and nHCE-BDM treatment. Self-reported information level, trust level of individuals on certification system, risk attitude in general, gender, and household income could not be found to have any significant impact on their choices. Also, Tobit model results indicated that individuals' WTP estimates were significantly higher for non-certified organic products than the certified organic counterparts. Further, individuals valued health attribute at most followed by animal welfare and environmentally-friendliness, respectively. Gender and household income were found to affect WTP estimates significantly for both models. Women are more likely to pay higher prices for organic products and individuals with higher income are also ready to pay higher prices. Risk attitude was found to affect WTP estimates positively for only the model with provided information while self-reported information level of individuals regarding organic products positively affect WTP estimates only in the absence of information.

We also tested whether any significant difference in WTP estimates across methods with ANOVA test, and then performed Bonferroni Post-hoc test for multiple comparison. The findings revealed WTP estimates for nHCE and nHCE-BDM treatment do not significantly differ from each other while WTP estimates of the BDM experiment differ from the nHCE and nHCE-BDM treatment significantly in both the absence and presence of information. In nHCE and nHCE-BDM treatment, WTP estimates for attributes are quite

similar while they are higher than the WTP estimates in the BDM experiment. The higher WTP estimates in non-hypothetical choice experiments are consistent with the findings of some other studies (Lusk and Schroeder, 2006; Gracia et al., 2011; Alphonce and Alfnes, 2017). This difference may be attributable to that the valuation techniques used to elicit individuals' preferences are different (Lusk and Schroeder, 2006). Further, design effects or specific context may play important roles in the WTP difference, and the effect of excluding the opt-out option should be examined (Alphonce and Alfnes, 2017).

Information effect on WTP estimates was also tested for each elicitation method. The provided information to the participants regarding the attributes of the products had a significant impact on their estimates in the BDM experiment. This conclusion might be attributable to that the WTP estimates in the BDM experiment are direct bids of the participants. Therefore, individuals could reflect their valuation clearer in their choices. Further, whether the prompted information had a significant impact on individuals' choices, the Wilcoxon Signed Ranks Test for dependent samples was employed in the nHCE and nHCE-BDM experiments. Further, we investigated the information effect for pooled data in each elicitation method to see whether a significant difference has occurred in WTP estimates for each attribute. For the model with conventional choice experiment data, information significantly affects WTP estimates of certification and price attributes. WTP estimates of non-certified, health, environmentally friendly, and animal welfare attributes were not affected by information that the subjects were presented. Further, we investigated the information effect for pooled data in the BDM method to see whether a significant difference has occurred in WTP estimates for each attribute. For the model with BDM data for only chosen alternative, information effect increased only the WTP estimates of health attribute.

The present study contributes to the organic food market in Turkey in several aspects. First, we make a clear distinction between certified organic egg

product and non-certified locally produced organic egg product since some consumers prefer the products with an organic label by given public authority. However, there are also some local producers operating in line with organic principles that they do not play a part of this certification process, and some consumers prefer to buy those products since they trust on their production principle. The findings reveal that the WTP estimates do not significantly differ between the two types of product in the nHCE and nHCE-BDM treatment. However, the WTP estimates of non-certified locally produced organic product significantly differ from the certified organic counterparts in the BDM experiment.

Second, the prompted information related to the attributes of the product plays a significant role in individuals' valuations, and it increases the WTP estimates in the BDM experiment. More specifically, the WTP estimate of health attribute was considerably increased in the presence of information.

Third, we observed that individuals value health attribute at most followed by animal welfare, and environmentally friendly attributes, respectively, for the three elicitation methods. This result is consistent with the participants' perceptions regarding the attributes of the organic products asked them at the beginning of the experiment. The attributes which are healthier, chemical residual-free, and pure/natural were considered to be the most important ones while the attributes which are more beneficial for underground water, less carbon output, and more expensive were considered to be the least important ones by the participants of the study. Animal-related attributes have moderate importance for the participants.

One limitation of the study is that the sample of the study consists of the university students, and the study was conducted within a laboratory and class experiment context. However, conducting a field experiment to the real organic consumers with their own money would give more realistic results. Therefore, we tried to reduce the hypothetical bias by giving them real money for their

purchasing decisions, and at the end of the experiment they could retain the remaining budget and buy the actual product.

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176

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APPENDICES

A. HUMAN SUBJECTS ETHICS COMMITTEE APPROVAL

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27 ŞUBAT 2018

Konu: Değerlendirme Sonucu

Gönderen: ODTÜ İnsan Araştırmaları Etik Kurulu (İAEK)

İlgi: İnsan Araştırmaları Etik Kurulu Başvurusu

Sayın Prof. Dr. Özlem ÖZDEMİR ve Özge DİNÇ CAVLAK ;

"Organik Ürün Satın Alma Davranışını Etkileyen Faktörler: Planlanmış Davranış Teorisi ve Sağlık İnanç Modeli Perspektifinden bir Türkiye Örneği" başlıklı araştırması İnsan Araştırmaları Etik Kurulu tarafından uygun görülerek gerekli onay **2017-SOS-118** protokol numarası ile **27.02.2018 - 30.12.2018** tarihleri arasında geçerli olmak üzere verilmiştir.

Bilgilerinize saygılarımla sunarım.

Prof. Dr. Ş. Halil TURAN
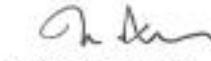
Başkan V

Prof. Dr. Ayhan SOL
Üye

Prof. Dr. Ayhan Gürbüz DEMİR
Üye

Doç. Dr. Yaşar KONDAKÇI
Üye

Doç. Dr. Zana ÇITAK
Üye

Yrd. Doç. Dr. Pınar KAYGAN
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Yrd. Doç. Dr. Emre SELÇUK
Üye

ORTA DOĞU TEKNİK ÜNİVERSİTESİ
MIDDLE EAST TECHNICAL UNIVERSITY

Sayı: 28620816 / 540

08 KASIM 2018

Konu: Değerlendirme Sonucu

Gönderen: ODTÜ İnsan Araştırmaları Etik Kurulu (İAEK)

İlgi: İnsan Araştırmaları Etik Kurulu Başvurusu

Sayın Prof.Dr. Özlem ÖZDEMİR ve Özge DİNÇ CAVLAK

"**Organik Ürün Satın Alma Davranışını Etkileyen Faktörler: Planlanmış Davranış Teorisi ve Sağlık İnanç Modeli Perspektifinden bir Türkiye Örneği**" sağlıklı araştırması   İnsan Araştırmaları Etik Kurulu Tarafından uygun görülerek gerekli onay **2017-SOS-118** protokol numarası ile **08.11.2018 - 21.05.2019** tarihleri arasında geçerli olmak üzere verilmiştir.

Bilgilerinize saygılarımla sunarım.

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Üye

209

B. THE QUESTIONNAIRE

Organik Gıda Anketi

Değerli Katılımcı,

Ekteki anket, bireylerin organik gıda satın alma davranışlarını incelemeyi amaçlamaktadır. Vereceğiniz cevapların doğruluğu, çalışmamız için büyük önem taşımaktadır. İsim vermeniz gerekmediği gibi tüm cevaplarınız gizli tutulacaktır. Çalışmanın sonuçları hakkında bilgi taleplerinizi e-posta yoluyla yapabilirsiniz.

Katkılarınız için teşekkür ederiz.

Saygılarımızla,

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Not: Bu anketteki "organik" kavramı; yapay hormon ve gübre kullanmadan, kimyasal katkı maddesi olmadan yapılan; doğal gübreleme ve atalık tohumların kullanıldığı gerçek organik tarımı tanımlamaktadır.

Bölüm 1.

1.Yaşınız
…..yıl

2.Cinsiyetiniz	
[ ] Kadın	[ ] Erkek

3.Eğitim Durumunuz	
[ ] İlkokul	[ ] Ortaokul
[ ] Lise	[ ] Ön Lisans
[ ] Lisans	[ ] Yüksek Lisans
[ ] Doktora	[ ] Diğer

4. Aylık hane halkı geliriniz	
[ ] 0-3000TL	[ ] 3001-6000TL
[ ] 6001-9000TL	[ ] 9000TL üzeri

5. Medeni haliniz	
[ ] Evli	[ ] Bekar

6. Kaç çocuğunuz var?
…..tane

7. Evde kaç kişi yaşıyorsunuz?
…..kişi

8. Ne sıklıkla yiyecek alışverişi yapıyorsunuz?	
[ ] Hiç yapmıyorum	[ ] Ayda bir kez yapıyorum
[ ] Haftada bir kez yapıyorum	[ ] Haftada birkaç kez yapıyorum

9. Lütfen aşağıdaki ifadelerden size uygun olanları işaretleyin.	
[ ] Yiyecek alışverişlerini pazardan yaparım	[ ] Yiyecek alışverişlerini süpermarketlerden yaparım
[ ] Yiyecek alışverişlerini hipermarketlerden yaparım	[ ] Yiyecek alışverişlerini yerel marketlerden yaparım
[ ] Yiyecek alışverişimi ekolojik, organik, doğal çiftliklerden ve marketlerden yaparım	[ ] Diğer

Bölüm 2.

Lütfen aşağıdaki ifadelerden size en uygun olanı işaretleyin	Kesinlikle katılmıyorum	Katılmıyorum	Kısmen katılmıyorum	Ne katılıyorum ne katılmıyorum	Kısmen katılıyorum	Katılıyorum	Tamamen Katılıyorum
Organik besin tüketimi, sağlığım için yararlıdır	O	O	O	O	O	O	O
Organik besin tüketimi, toprağın ve yeraltı sularının kirlenmesini önler	O	O	O	O	O	O	O
Organik besin tüketimi, atmosferdeki zararlı gaz salınımını azaltır	O	O	O	O	O	O	O
Organik besinlerin tadı, organik olmayan besinlerden daha güzeldir	O	O	O	O	O	O	O
Organik besinler, organik olmayan besinlerden daha besleyicidir	O	O	O	O	O	O	O
Organik besin tüketiminin çevremdeki insanlar arasında yaygınlaşmaya başladığını düşünüyorum	O	O	O	O	O	O	O
Yakın çevrem, organik besin tüketmemin sağlığım için daha yararlı olduğunu düşünür	O	O	O	O	O	O	O
Yakın çevrem, organik besin tüketimi için beni teşvik eder	O	O	O	O	O	O	O
Yakın çevrem, organik besin tüketimi için bana gerekli desteği sağlar (para, zaman, bilgi)	O	O	O	O	O	O	O
Organik besin satın almak tamamen benim kontrolüm altındadır	O	O	O	O	O	O	O
Organik besin satın almak istediğimde rahatlıkla yapabilirim	O	O	O	O	O	O	O
Organik besin satın almak için yeterli maddi gücüm vardır	O	O	O	O	O	O	O
Organik besin satın almak için yeterli zamanım vardır	O	O	O	O	O	O	O
Organik besin satın almak istediğimde nereden alacağım konusunda tam bilgim ve farkındalığım vardır	O	O	O	O	O	O	O
Organik besin tüketmem daha sağlıklı olmamı sağlar	O	O	O	O	O	O	O
Daha sağlıklı olmam önemlidir	O	O	O	O	O	O	O
Çevremdeki insanlar organik besin tüketmem gerektiğini düşünür	O	O	O	O	O	O	O
Söz konusu sağlığım olduğunda, çevremdeki insanların yapmam gerektiğini düşündüğü şeyleri yapmak isterim	O	O	O	O	O	O	O
Organik besinlere erişimin zor olması, organik besin tüketmemi zorlaştırır	O	O	O	O	O	O	O
Organik besinlere erişimin zor olma olasılığı yüksektir	O	O	O	O	O	O	O
Yakın gelecekte organik besin tüketmeyi düşünüyorum	O	O	O	O	O	O	O
Yakın gelecekte organik besin tüketmeyi istiyorum	O	O	O	O	O	O	O
Düzenli olarak organik besin tüketirim	O	O	O	O	O	O	O

Bölüm 3.

Lütfen aşağıdaki ifadelerden size en uygun olanı işaretleyin	Kesinlikle katılmıyorum	Katılmıyorum	Kısmen katılmıyorum	Ne katılıyorum ne katılmıyorum	Kısmen katılıyorum	Katılıyorum	Tamamen Katılıyorum
Sağlığımla ilgili konularda oldukça bilinçliyim	○	○	○	○	○	○	○
Daima sağlığımla ilgili konularda endişelerim vardır	○	○	○	○	○	○	○
Sağlık durumumla ilgili sorumluluk bana aittir	○	○	○	○	○	○	○
Yalnızca hasta olduğumda sağlığım için endişelenirim	○	○	○	○	○	○	○
Hastalıksız bir yaşam sürmek, benim için oldukça önemlidir	○	○	○	○	○	○	○
Sağlığım, kendime ne kadar iyi baktığıma bağlıdır	○	○	○	○	○	○	○
Hayatı mümkün olduğu kadar sağlıklı yaşamak, benim için oldukça önemlidir	○	○	○	○	○	○	○
Organik besin tüketimi, kronik rahatsızlıklar ve damar hastalıklarına yakalanma riskini azaltır	○	○	○	○	○	○	○
Organik besin tüketimi, bazı kanser türlerinin görülme riskini azaltır	○	○	○	○	○	○	○
Organik besin tüketimi, çocuklarda hormon bozukluğu görülme riskini azaltır	○	○	○	○	○	○	○
Organik besin tüketimi, çocuklarda öğrenme ve kavrama bozukluğu görülme riskini azaltır	○	○	○	○	○	○	○
Organik besin tüketimi, vücuda bir takım mineraller ve vitaminler sağlar	○	○	○	○	○	○	○
Organik tarım, hayvan ve bitki sağlığını dikkate alır	○	○	○	○	○	○	○
Organik tarım, yapay gübre ve hormon kullanılmasını kısıtlar	○	○	○	○	○	○	○
Günümüzde pek çok yiyecek kimyasal katkı maddesi ve yapay gübre kalıntısı içermektedir	○	○	○	○	○	○	○
Günümüzde pek çok yiyeceğin içine konan yapay katkı maddeleri ve koruyucular konusunda oldukça endişeliyim	○	○	○	○	○	○	○
Son zamanlarda pek çok yiyeceğin kalitesi ve güvenilirliği konusunda endişelerim var	○	○	○	○	○	○	○
Organik besin satın aldığım kişilerin bu besinlerle ilgili taahhütlerine güvenirim	○	○	○	○	○	○	○
Organik besin satın aldığım kişiler güvenilirdir	○	○	○	○	○	○	○
Organik besin satın aldığım kişilerin dürüstlüğüne ve etik anlayışına güvenirim	○	○	○	○	○	○	○

C. THE EXPERIMENT

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Organik Gıda Anketi ve Deneyi

Değerli Katılımcı,

Bu çalışma, bireylerin organik gıda için ödemeye razı oldukları fiyatı ölçmeyi amaçlayan kısa bir anket ve ekonomik bir deneyi içermektedir. Vereceğiniz cevapların doğruluğu, çalışmamız için büyük önem taşımaktadır. İsim vermeniz gerekmediği gibi tüm cevaplarınız gizli tutulacaktır. Çalışmanın sonuçları hakkında bilgi taleplerinizi e-posta yoluyla yapabilirsiniz.

Katkılarınız için teşekkür ederiz.

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Bölüm 1: Organik Ürün Algısı

1) Aşağıda **organik ürünlerle** ilgili bir takım özellikler yer almaktadır. Lütfen sizin için önem derecelerini belirtiniz.

	Hiç önemli değil	Biraz Önemli	Orta Derecede Önemli	Çok Önemli	Son Derece Önemli
Daha sağlıklı	1	2	3	4	5
Daha lezzetli	1	2	3	4	5
Daha taze	1	2	3	4	5
Daha temiz	1	2	3	4	5
Daha saf ve doğal	1	2	3	4	5
Kimyasal barındırmayan	1	2	3	4	5
Katkı maddesi barındırmayan	1	2	3	4	5
Besin değeri açısından daha yüksek	1	2	3	4	5
Daha çevre dostu	1	2	3	4	5
Hayvan refahına daha uygun	1	2	3	4	5
Toprak için daha faydalı	1	2	3	4	5
Yer altı suları için daha faydalı	1	2	3	4	5
Daha düşük karbon salınımı	1	2	3	4	5
Daha pahalı	1	2	3	4	5

2) Lütfen organik ürünler hakkında sahip olduğunuz bilgi düzeyini değerlendirin.

(Hiçbir bilgim yok)　1　2　3　4　5　6　7　(Oldukça bilgiliyim)

3) Organik yumurta satın alıyor musunuz?

Evet ○　　　Hayır ○

4) Cevabınız evet ise, ne sıklıkla satın alıyorsunuz?

Her zaman ○
Sıklıkla ○
Bazen ○
Nadiren ○

5) Lütfen organik ürün sertifikasına olan güven düzeyinizi belirtin. (yuvarlak içine alınız)

(Hiç güvenmiyorum)　1　2　3　4　5　6　7　(Son derece güveniyorum)

6) Kendinizi, genellikle risk almayı seven mi yoksa riskten kaçınan biri olarak mı tanımlarsınız? Lütfen 0 ve 10 arasında risk alma düzeyinizi belirtin. (yuvarlak içine alınız)

(risk almayı sevmem) 0 1 2 3 4 5 6 7 8 9 10 (risk almayı severim)

Bölüm 2: Kişisel Bilgiler

1)   Yaş

_____

2)   Cinsiyet

Kadın ☐   Erkek ☐

3)   Toplam Hanehalkı Geliri (yaklaşık olarak)

_____TL

Bölüm 3: Deney Açıklamaları

Bu bölümde farklı özelliklere sahip <u>10'lu paket</u> yumurta ürünü için, sizlerden seçim yapmanız istenecektir. Sizlere farklı senaryolar verilecek ve her bir senaryoda, ürünün farklı özellikleri farklı fiyatlarla yer alacaktır. Belirtilen özellikler dışında, ürünler diğer özelikler bakımından aynı varsayılacaktır (aynı renk, aynı boy gibi).

İki farklı yumurta çeşidi mevcuttur

- Sertifikalı Organik Yumurta
- Organik, fakat sertifikası olmayan, yerel olarak üretilmiş yumurta

Yumurta için dört farklı özellik belirlenmiştir
- Sağlıklı
- Çevre dostu
- Hayvan refahına uygun
- Fiyat (13 TL; 17 TL; 21 TL; 25 TL)

Deney Kuralları

- Katılımcıların deney süresince birbirleriyle konuşmaları kesinlikle yasaktır.
- Katılımcıların ödülleri alabilmesi için, tüm anket ve deney sorularını eksiksiz olarak cevaplamaları gerekmektedir.

Ödeme Mekanizması 1

- Çalışmanın başında, sizlere 100 TL değerinde bir bütçe verilecektir.
- Her senaryonun başında 100 TL'niz olduğunu farz edin.
- Tüm senaryoları cevapladıktan sonra, senaryolardan ve katılımcılardan **<u>yalnızca</u>** biri rasgele olarak seçilecektir.
- Seçilen katılımcı, belirlenen senaryoda yaptığı seçime göre ödemesini yapacak ve ürününü satın alacaktır.
- Eğer ürünü satın almazsanız → yumurta tüketmediğiniz için bir sağlık sorunu ile karşı karşıya kalabilirsiniz. Bu durumda;

  ❖ Yaptığınız seçimlere göre belirlenecek bir olasılıkla bir sağlık sorunu ile karşılaşacaksınız. Eğer bu olasılık gerçekleşirse 100 TL'lik bir sağlık harcamanız meydana gelecek ve bütçenizin tamamını kaybedeceksiniz.

- Lütfen gerçek ödeme yapılacağını ve bu ödemenin size verilen bütçeden yapılacağını unutmayın.
- Ayrıca tüm katılımcılar, katılım ödülünü alacaktır.

Örnek Senaryo

	SEÇENEK A	SEÇENEK B	SEÇENEK C
Ürün Özellikleri			
Üretim Metodu	Sertifikalı Organik	Organik, fakat sertifikası olmayan, yerel olarak üretilmiş	İKİSİNİ DE ALMIYORUM
Sağlık	Sağlıklı		
Çevre Dostu		Çevre Dostu	
Hayvan Refahına Uygun		Hayvan Refahına Uygun	
Fiyat	17TL	21TL	
Tercih*	☐	☐	☐

*lütfen seçeneklerden yalnızca bir tanesini seçin

Ödeme Mekanizması 2

- Çalışmanın başında, sizlere 100 TL değerinde bir bütçe verilecektir.
- Her senaryonun başında 100 TL'niz olduğunu farz edin.
- Tüm senaryolar tamamlandıktan sonra, senaryolardan ve katılımcılardan **yalnızca** biri rasgele olarak seçilecektir.
- Rasgele rakam seçen bir mekanizma kullanılarak, tercih edilen ürün için ödenecek fiyat belirlenecektir.
- Ürün için verdiğiniz fiyat ≥ Rasgele rakam → ürün için rasgele seçilen rakamı ödeyeceksiniz.
- Ürün için verdiğiniz fiyat < Rasgele rakam → ürünü satın alamayacaksınız.

218

- Eğer ürünü satın alamazsanız → yumurta tüketmediğiniz için belirli bir olasılıkla bir sağlık sorunu ile karşı karşıya kalabilirsiniz. Bu olasılık yapacağınız seçime göre belirlenecektir.
- Ayrıca tüm katılımcılar, katılım ödülünü alacaktır.
- Mekanizmayı daha iyi anlamak için, lütfen aşağıdaki örneği inceleyin. **Unutmamanız gereken önemli bir nokta:** Eğer çok düşük fiyat verirseniz ürünü satın alamayabilirsiniz ve bu durumda bir hastalıkla karşılaşabilirsiniz. Çok yüksek fiyat verirseniz ürünü hak ettiğinden daha yüksek fiyattan satın almak durumunda kalabilirsiniz. Bu nedenle, lütfen ürünün hak ettiğini düşündüğünüz gerçek fiyatını verin.

Örnek Senaryo

	SEÇENEK A	SEÇENEK B	SEÇENEK C
Ürün Özellikleri			
Üretim Metodu	Sertifikalı Organik	Organik, fakat sertifikası olmayan, yerel olarak üretilmiş	İKİSİNİ DE ALMIYORUM
Sağlık		Sağlıklı	
Çevre Dostu	Çevre Dostu		
Hayvan Refahına Uygun		Hayvan Refahına Uygun	
Fiyat	17TL	21TL	
Tercih*	☐	☐	☐

*lütfen seçeneklerden yalnızca bir tanesini seçin

Ödeme Mekanizması 3

- Çalışmanın başında, sizlere 100 TL değerinde bir bütçe verilecektir.
- Her senaryonun başında 100 TL'niz olduğunu farz edin.
- Tüm senaryolar tamamlandıktan sonra, senaryolardan ve katılımcılardan **yalnızca** biri rasgele olarak seçilecektir.
- Rasgele rakam seçen bir mekanizma kullanılarak, tercih edilen ürün için ödenecek fiyat belirlenecektir:

- Ürün için verdiğiniz fiyat $\geq$ Rasgele rakam $\rightarrow$ ürün için rasgele seçilen rakamı ödeyeceksiniz.
- Ürün için verdiğiniz fiyat $<$ Rasgele rakam $\rightarrow$ ürünü satın alamayacaksınız.

- Eğer ürünü satın alamazsanız $\rightarrow$ yumurta tüketmediğiniz için belirli bir olasılıkla bir sağlık sorunu ile karşı karşıya kalabilirsiniz. Bu olasılık yapacağınız seçime göre belirlenecektir.

- Ayrıca tüm katılımcılar, katılım ödülünü alacaktır.
- Mekanizmayı daha iyi anlamak için, lütfen aşağıdaki örneği inceleyin. **Unutmamanız gereken önemli bir nokta:** Eğer çok düşük fiyat verirseniz ürünü satın alamayabilirsiniz ve bu durumda bir hastalıkla karşılaşabilirsiniz. Çok yüksek fiyat verirseniz ürünü hak ettiğinden daha yüksek fiyattan satın almak durumunda kalabilirsiniz. Bu nedenle, lütfen ürünün hak ettiğini düşündüğünüz gerçek fiyatını verin.

Örnek Senaryo

	SEÇENEK A	SEÇENEK B	SEÇENEK C
Ürün Özellikleri			
Üretim Metodu	Sertifikalı Organik	Organik, fakat sertifikası olmayan, yerel olarak üretilmiş	
Sağlık	Sağlıklı		İKİSİNİ DE ALMIYORUM
Çevre Dostu		Çevre Dostu	
Hayvan Refahına Uygun		Hayvan Refahına Uygun	
Fiyat	TL	TL	
Tercih*	⬜	⬜	⬜

Organik Ürünler Hakkında Verilen Bilgi

Sertifikalı Organik

Organik üretim, sentetik gübre, tarım ilacı kalıntısı ve yapay hormon kullanılmadan yapılan üretimi ifade eder. Üretimde genetiğiyle oynanmış tohumlar kullanılmaz. Sertifikalı organik ürünlerin üzerinde, Tarım, Gıda ve Hayvancılık Bakanlığı'nın belirlediği kuruluşlar tarafından verilen organik tarım logosu bulunmaktadır.

Organik, fakat sertifikası olmayan yerel olarak üretilmiş

Organik üretim, sentetik gübre, tarım ilacı kalıntısı ve yapay hormon kullanılmadan yapılan üretimi ifade eder. Üretimde genetiğiyle oynanmış tohumlar kullanılmaz. Üretimde atalık yerli tohumlar kullanılır. Üretim, genellikle, yerel çiftliklerde yapılır. Organik sertifikaları yoktur, fakat üretim prensipleri, organik üretim prensipleriyle örtüşür. Tüketicilerin, yerel üretim yapan çiftliklere giderek üretim aşamalarını izleme fırsatları vardır.

Sağlıklı

Organik besin tüketimi genel olarak kronik ve damar hastalıkları, bazı kanser türleri, çocuklarda hormon bozukluğu ve öğrenme güçlüğü risklerini azaltır. Ayrıca, vücuda mineral ve vitamin sağlar. Organik yumurta özelinde ise, yüksek oranda omega 3, A ve E vitaminleri içererek kalp ve damar sistemi için fayda sağlar.

Çevre Dostu

Organik üretim esnasında yapay hormon ve kimyasal kullanımı kısıtlandığı için, çevre kirliliği riski azalır. Atmosferdeki karbon salınımı azalır. Böylelikle küresel ısınma riski azalır.

Hayvan Refahına Uygun

Organik prensiplere uygun olarak yetiştirilen hayvanlara büyüme hormonu ve antibiyotikler verilmez. Bu hayvanlar, organik yemlerle beslenir. Yaşam şartları hayvan sağlığı ve doğal davranışlarına uygun olmalıdır. Onlar için temiz hava ve güneş ışığı ulaşılır olmalı, ayrıca üreme ortamları elverişli olmalıdır. Organik yumurta üreten tavuklar, hem kümes içi hem kümes dışı alanlarda özgürce dolaşabilen tavuklardır.

D. CURRICULUM VITAE

DİNÇ-CAVLAK, ÖZGE

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Mobile: +90 505 5017427

Email: ozgedincoz@gmail.com

Personal

Date of Birth:	16/02/1985
Birth place:	Ankara
Marital Status:	Married
Nationality:	Turkish
Foreign Language:	English and German

Education

2012-2019   Middle East Technical University, ANKARA

Department of Business Administration, PhD.

2009-2012   Middle East Technical University, ANKARA

Department of Business Administration, MBA

with Thesis.

2003-2008   Hacettepe University, ANKARA

Department of Statistics, B.Sc Degree

GPA: 3.69 (Ranked First at Graduation in

Department)

Work Experience

2014-ongoing   Research Assistant at Ankara Hacı Bayram
                          Veli University

2010-2014   Research Assistant at Middle East Technical
                          University

2008   Central Bank of the Republic of Turkey
                          Examined Accounting, Foreign Exchange and
                          International Trade Services (internship)

Skills

Proficient in Microsoft Office packages (Word, Excel, and PowerPoint)
Proficient in English
Proficient in EQS, AMOS, SPSS, MiniTab, STATA, LIMDEP, WinQSB, Excel
Solver, Eviews, Forecast X, Microfit.

Research Interest
Quantitative Decision Methods
Psychological Decision Making
Behavioral Sciences
Decision Making under Risk
Theory of Planned Behavior
Structural Equation Modeling
Choice Experiments

Projects

BAP-08-11-2012-003, The comparison of risk reduction mechanisms in disaster risk management: Insurance available in the market and personal precautions, 2012, Özlem Özdemir, Burçak Başbuğ Erkan, Özge Dinç Cavlak.

BAP-04-02-2016-001, The Determinants of Voting Decisions from the Theory of Planned Behavior Perspective: An Evidence of Turkey, 2015, Sinan Gönül, Özge Dinç Cavlak.

International Conferences

An Experimental Investigation of Risk Reduction Mechanisms: An Evidence of Fire, 15th Eurasia Economic and Business Society Conference, Lisbon, Portugal, 2015.

Macroeconomic and Demographic Determinants of Economic Growth: An Evidence of Turkey, the First World Congress in Comparative Economics, Rome, Italy, 2015.

The Determinants of Voting Decision from the Theory of Planned Behavior Perspective: An Evidence of Turkey, 2nd International Conference on the Changing and Social Research, Barcelona, Spain, 2016.

An Examination of Schwartz's Cultural Value Orientations in terms of Social Progress Index, 2nd International Conference on the Changing and Social Research, Barcelona, Spain, 2016.

National Conferences

Dinç-Cavlak, Özge (2017). The Effects of Cultural Value Orientation on Gender Inequality, *Gazi Akademi Genç Sosyal Bilimciler Sempozyumu* (Özet Bildiri), 9-10 Mart, Ankara, Turkey

Publications

Dinç-Cavlak, Özge, Özdemir, Özlem, and Başbuğ-Erkan, Burçak (2017). Preferences for the Earthquake Risk Mitigation Mechanisms: An Experimental Evidence, *Natural Hazards Review*, 19(3), 04018007 (SSCI).

Dinç-Cavlak, Özge (2017). Macroeconomic and Demographic Determinants of Economic Growth: An Evidence of Turkey, International Journal of Business and Management Invention, 6(11), 17-23.

E. TURKISH SUMMARY/ TÜRKÇE ÖZET

Dünya nüfusundaki hızlı artış nedeniyle, bireylerin gıda ihtiyaçlarında önemli bir artış meydana gelmiştir. Bu ihtiyaçları karşılamak amacıyla tarım sektöründe genellikle konvansiyonel (alışılagelmiş) yöntemler tercih edilmiş, bu sayede tarımda verimliliği artırarak daha fazla ürün elde edilmesi amaçlanmıştır. Yapay gübre ve hormon kullanımının yanı sıra, pestisit adı verilen tarım ilaçlarının kullanılmasıyla üretim miktarlarında artış sağlanmış, fakat bu ürünlerin insan sağlığını ciddi bir şekilde tehdit ettiği, yapılan araştırmalar sonucunda ortaya konmuştur (Forget vd., 1990; Metcalf, 1970; Ault, 1989; Igbedioh, 1991; More, 2003). Bunun yanı sıra, konvansiyonel tarımda kullanılan pestisitler, kimyasallar ve yapay gübreler, yer altı sularının ve toprağın zarar görmesine neden olmakta ve atmosferdeki sera gazı salınımını arttırarak iklim değişikliğine yol açmaktadır (Mendelsohn ve Williams, 2006). Konvansiyonel tarımda kullanılan kimyasallar ve pestisitler nedeniyle, ekosistemin ve canlı çeşitliliğinin olumsuz yönde etkilendiği, yapılan çalışmalarla ortaya konmuştur (Fuller vd., 2005; Firbank vd., 2007). Konvansiyonel üretimin potansiyel zararları göz önünde bulundurulduğunda, gıda güvenliği kavramı hem organizmalar hem de çevre sağlığı için yaşamsal bir önem arz etmektedir. Bu nedenle, bu yöntemlere alternatif olarak, sürdürülebilir tarım yöntemleri geliştirilmeye başlanmıştır. Bu kapsamda, dünyanın çeşitli yerlerinde kullanılan, organik tarım, biyo- dinamik tarım, toprak işlemesiz tarım, kent ve kent çevresi tarımı, doğal tarım, eko-tarım, kalıcı tarım, entegre tarım sistemleri ve yüzen çiftlikler olarak sıralanabilecek sürdürülebilir tarım yöntemleri yaygınlaşmaya başlamıştır (Fukuoka, 1985; Sachchidananda ve Rajiv, 1999). Sürdürülebilir tarım yöntemlerinden biri olarak dünyanın pek çok yerinde uygulanan organik tarım, toprağın, suyun, ekosistemin ve insanların sağlığını koruyan ve sürdüren bir üretim sistemini ifade etmektedir. Bu bilgiler doğrultusunda, pek çok kuruluş, organik tarımın ne anlama geldiğini, amacını ve hangi prensiplerle yapıldığını ortaya koyan çalışmalarda bulunmuştur. Avrupa

Komisyonu Tarım ve Yerel Gelişim Direktörlüğü'nün tanımına göre, organik tarım, bitki nöbetleşmesi, yeşil gübre, kompost, biyolojik zararlı kontrolünü içeren ve toprak üretkenliğini sağlamada mekanik işlemeye dayanan; sentetik gübre, pestisit, hormon, hayvan yem katkıları ve genetiği değiştirilmiş organizmaların kullanımını reddeden veya sınırlayan bir tarım yöntemidir. Organik tarımda toprak ve su gibi doğal çevrenin tarım eliyle kirletilmesini engellemek, temiz malzeme ve teknikler kullanılarak üretilen tarım ürünleri ile insan, hayvan ve çevrenin sağlığı üzerinde olumlu katkı sağlamak amaçlanır. Organik tarım, toprağın yapısına zarar vermeden, hayvansal ve bitkisel üretimi bir bütün olarak ön gören, toprak ve su kaynaklarının korunmasını esas alan, işletme içerisinden sağlanan girdileri kullanmayı hedefleyen en son bilgi ve teknolojiden yararlanarak, tohumdan toprağa, girdiden işlemeye kadar belirli kurallar dahilinde denetim ve belgelendirmeyi gerektiren bir üretim sistemidir. Ayrıca, sürdürülebilir bir ekosistem, tüm canlılar için hakkaniyet, sosyal adalet ve beşeri ilişkiler anlayışı ile birlikte, aynı zamanda bir yaşam biçimidir (TC Gıda, Tarım ve Hayvancılık Bakanlığı, Türkiye Organik Tarım Stratejik Planı, 2012-2016). Bunun yanı sıra, organik tarım, toprağın, ekosistemin ve insanların sağlığını koruyan ve sürdüren bir üretim sistemi olarak tanımlanmaktadır. Ayrıca, olumsuz etkilere neden olan girdiler kullanmak yerine, yerel şartlara uyum sağlayan ekolojik süreçlere, biyo-çeşitliliğe ve döngülere dayanmaktadır. Gelenekleri, inovasyonu ve bilimi, ortak çevreye yarar sağlamak amacıyla kaynaştırmaktadır. Hakkaniyeti ve yüksek kaliteli bir yaşamı desteklemeyi amaçlamaktadır (Uluslararası Organik Tarım Hareketleri Federasyonu, 2017).

Organik uygulamaların bu prensiplerinin, insanlar, diğer organizmalar ve çevre için pek çok yarar sağladığı yapılan çeşitli araştırmalarla ortaya konmaktadır. Organik gıda tüketiminin, yüksek oranda C vitamini, magnezyum, demir ve fosfor gibi vitamin ve mineral sağladığı ortaya konmuş (Crinnion, 2010), bunun yanı sıra, hodgkin dışı lenfoma (Bradbury vd., 2014), obezite ve kardiyovasküler hastalık risklerini azalttığı saptanmıştır (Forman ve Silverstein, 2012). Aynı zamanda, organik besinlerin, düşük oranda nitrat içermesi nedeniyle sindirim sistemi ile ilgili

226

kanser riskini azalttığı (Williams, 2002) ve organik besinlerin yüksek oranda fenol içermesi nedeniyle antioksidan etkisine sahip olduğu görülmüştür (Asami vd., 2003). Bunun yanı sıra, üretim sırasında genetiği değiştirilmiş organizmalar kullanılmadığı için gıda kaynaklı hastalıklara daha az rastlanmaktadır. Organik tarımın, minimum düzeyde kullanılan pestisitler (bakteriyel toksin, bakır sülfat, zirai kükürt) nedeniyle sera gazı salınımını azaltarak iklim değişikliğini engellediği ve çevre korumasına katkı sağladığı gözlenmektedir (Birleşmiş Milletler Tarım ve Gıda Örgütü, 2017). Bunun yanı sıra, organik tarımın esası olan nöbetleşe ekim, birlikte ekme, erozyon örtü bitkileri, organik gübre ve minimum düzeyde toprak sürme gibi faaliyetler, toprak hayvanlarını ve bitkilerini korumakta, toprak formasyonunu ve yapısını geliştirmekte ve daha istikrarlı bir sistem meydana getirmektedir. Bununla birlikte, besin ve enerji dönüşümü sağlanarak toprağın besin tutma gücü arttırılmakta, bu da toprak erozyonu yönetiminde önemli bir rol oynamaktadır. Böylelikle, toprağın biyo-çeşitliliği arttırılarak ve besin kayıpları azaltılarak, toprağın verimliliği önemli ölçüde arttırılmaktadır (Birleşmiş Milletler Tarım ve Gıda Örgütü, 2017). Konvansiyonel yöntemler kullanılan tarım alanlarında, yapay gübre ve pestisit kullanımları nedeniyle yeraltı sularında görülen kirlilik önemli bir sorun teşkil etmektedir. Buna karşın, organik tarımda kullanılan organik gübre, hayvan gübresi ve yeşil gübre sayesinde biyo-çeşitlilik sağlanmakta ve böylelikle su, toprağa etkin bir biçimde geçebilmektedir. Bu sayede, yeraltı sularının kirlenme riski de önemli ölçüde azalmaktadır (Birleşmiş Milletler Tarım ve Gıda Örgütü, 2017).

Birçok tüketici, organik olarak yetiştirilen gıdaların konvansiyonel muadillerinden daha güvenli ve daha sağlıklı olduğuna inanmaktadır (Jolly vd., 1989). Dahası, sağlık ve gıda güvenliği ile ilgili endişelerin yanı sıra, çevre bilinci insanları konvansiyonel tarım yöntemlerini sorgulamaya yönlendirmektedir (Saba ve Messina, 2003). Bu nedenle, organik tüketimin yararlarından ve konvansiyonel yöntemlerin dezavantajlarından haberdar olan bireyler, özellikle sağlık ve gıda güvenliği endişeleri nedeniyle beslenme alışkanlıklarını değiştirmeye başlamışlardır. Tüketiciler, tüketim alışkanlıklarını değiştirerek, daha doğal, daha

227

sağlıklı ve çevreye duyarlı ürünlere doğru yönelmekte ve çoğunlukla bu ürünleri, organik çiftlikler, pazarlar ve yerel marketlerden almayı tercih etmektedirler.

Tüketicilerin bu değişen yönelimi, dünyanın çeşitli yerlerinde organik uygulamaların hızla benimsenmesine neden olmakta ve organik ürün tüketim oranları tüm dünyada artmaya başlamaktadır. Avrupa ülkelerindeki organik ürün tüketimi incelendiğinde, kişi başına düşen tüketimin en yüksek olduğu ülkeler, İsviçre (262,2 Euro), Danimarka (190,7 Euro), İsveç (177,1 Euro), Lüksemburg (170 Euro), Lichtenstein (142,4 Euro), Avusturya (127 Euro), Almanya (105,9 Euro), Fransa (83,3 Euro), Norveç (68,1 Euro) ve Hollanda (63,4 Euro) olarak görülmektedir (Willer ve Lernoud, 2017). Ayrıca, ABD'de de organik tüketim oranları artış eğilimindedir. Gıda Pazarlama Enstitüsü'nün (2006) yayınladığı rapora göre, 2001 yılında ABD'li tüketicilerin yüzde 44'ü organik gıda satın alırken, bu oran 2006'da yüzde 51'dir. Ancak, dünya genelinde organik ürün tüketimin oranlarında görülen artışın aksine, Türkiye'de organik tüketim oldukça sınırlı kalmaktadır. Ekolojik Tarım Örgütü, 2015 yılında Türkiye'de kişi başına düşen organik ürün tüketiminin, 1 Euro'nun altında olduğunu açıklamıştır. Türkiye, sahip olduğu ekilebilir araziler ve dinamik işgücü ile organik üretim için yeterli üretim olanaklarına sahiptir, ancak organik üretiminin büyük bir bölümünü başta ABD, Kanada, Avustralya, Irak, İsviçre ve Japonya olmak üzere dış ülkelere ihraç etmektedir (USDA Foreign Agricultural Service, 2016). Organik üretimin yüzde 80-85'i ihraç edilirken, sadece yüzde 15-20'si iç pazarda kalmaktadır (Willer ve Lernoud, 2017). Mevcut olanaklara rağmen, iç pazardaki yetersiz organik tüketim düzeyi, ülke halkının endüstri, ekonomi ve refahı için oldukça önemli bir sorun haline gelmektedir. Bu nedenle, bu çalışma, temel olarak olarak bireylerin organik gıda satınalma davranışlarını, psikolojik bir model geliştirerek açıklamayı ve bireylerin organik gıda tüketimini iç pazarda da artırmayı amaçlamaktadır.

Organik tarım ve ürün üretimi son yıllarda oldukça hızlı bir şekilde büyüme göstermiş ve dünyanın pek çok yerinde yaygınlaşmaya başlamıştır. Bireylerin hangi nedenlerle organik ürünlere yöneldiği ve bireylerin organik ürünleri tercih etmelerinde rol oynayan faktörleri ortaya koyan pek çok çalışma mevcuttur.

228

Literatür taramasında, bireylerin organik gıda satınalma davranışları, çeşitli modelleri, bireysel faktörleri, durumsal faktörleri, çevre ile ilgili faktörleri ve sosyodemografik faktörleri ele alarak önemli ölçüde incelenmiştir. Mevcut literatür, mümkün olduğunca detaylı bir şekilde incelenmeye çalışılmakta ve çeşitli çalışmaların sonuçları tartışılmaktadır. Aertens vd. (2009), organik ürün tüketiminin kişisel belirleyicileri adlı makalelerinde oldukça geniş bir literatür incelemesi yaparak, bu faktörleri planlanmış davranış teorisi ve değer teorisi çerçevesinde incelemişlerdir. Planlanmış davranış teorisi (Ajzen, 1991), davranışa karşı tutum, öznel normlar ve algılanan davranışsal kontrol boyutlarını, davranışı gerçekleştirmeye yönelik niyetin belirleyicileri olarak ifade eden bir model olarak geliştirilmiştir. Örneğin, Saba ve Messina (2003) bireylerin, organik meyve ve sebze tüketimine yönelik tutum ve inançlarını inceleyen bir anket çalışması gerçekleştirmişler ve araştırmanın bulguları, organik ürünlere karşı olan tutumun organik meyve ve sebze tüketiminde önemli bir faktör olduğunu ortaya koymuştur. Ayrıca, organik meyve ve sebze tüketimine yönelik olumlu tutum takınan bireylerin, bu ürünleri daha sağlıklı, çevre dostu ve daha lezzetli bulduğu görülmüştür. Zagata (2012), Çek Cumhuriyeti'nde yürüttüğü çalışmasında, organik ürünlerin bireylerin sağlığına olumlu etkileri olduğuna dair inançları, çevre dostu üretim yapılması ve organik ürünlerin tadının daha iyi olması gibi nedenlerle, bireylerin organik ürün tüketimi davranışı gösterdiklerini ortaya koymaktadır. Bunun yanı sıra, bireylerin organik ürün davranışını, planlanmış davranış teorisi çerçevesinde inceleyerek, niyetin en önemli belirleyicilerinin davranışa karşı tutum ve sosyal normlar olduğunu göstermiştir.

Bu çalışmaların yanı sıra, değer teorisi (Rokeach, 1973; Schwartz, 1992), bireylerin organik ürün tüketimini açıklamada sıklıkla kullanılmaktadır. Değerlerin, bireylerin kavramsal sistemleriyle bağlantısı olması nedeniyle tutumlarla karşılaştırıldığında daha istikrarlı olduğu belirtilmiş (Rokeach, 1973) ve dünyanın her yerindeki farklı kültürler dikkate alınarak on farklı değer (güç, başarı, hazcılık, uyarılım, özyönelim, evrenselcilik, iyilikseverlik, geleneksellik, uyma ve güvenlik) oluşturulmuştur (Schwartz, 1992). Yapılan pek çok çalışmada, güvenlik

değeriyle doğrudan ilişkisi olan sağlık tutumunun, organik ürün satın almayı pozitif yönde etkilediği görülmektedir (Schifferstein ve Oude Ophuis, 1998; Harper ve Makatouni, 2002; Gracia ve de Magistris, 2007).

Bunun yanı sıra, sağlık inanç modelinin (Rosenstock vd., 1988) bireylerin organik ürün satın alma davranışına etkilerini inceleyen bir çalışma, yarar algısının, öz etkiliğin ve engel algısının, bireylerin organik ürün kullanma isteği üzerinde önemli etkileri olduğunu ortaya koymaktadır (Yazdanpanah vd., 2015).

Planlanmış davranış teorisi, sağlık inanç modeli ve değer teorilerinin yanı sıra, organik ürün satınalma davranışını etkileyen pek çok faktör mevcuttur. Schwartz (1973)'a göre, bireyin kendini belirli bir yönde davranışa ikna etmesine karşılık gelen kişisel normlar, bireylerin belirli bir davranış göstermesinde sosyal normlara göre daha etkili olmaktadır. Thogersen ve Olander (2006), tutum-norm-davranış ilişkisini incelediği çalışmasında kişisel normların organik ürün satınalma davranışı üzerindeki gücü arttıkça ve tüketicilerin organik ürünlerin pahalı olduğuna ilişkin algıları azaldıkça, organik ürün satınalma olasılıklarının arttığını iddia etmişlerdir. Bunun yanı sıra, Dean vd. (2008) tüketicilerin ahlaki kaygılarının, organik elma ve organik pizza satın almaya dair niyetlerine olan etkisini araştırmışlardır. Araştırmanının bulguları, pozitif ahlak unsurunun, her iki ürünü satınalma niyetini önemli ölçüde belirlediğini ortaya koymuştur.

Organik ürün satınalma davranışında psikografik faktörlerin yanı sıra, sosyoekonomik faktörler de yapılan pek çok çalışmada ele alınmıştır. Gracia ve de Magistris (2007), organik ürün satın almada etkili olan faktörleri araştırdıkları çalışmalarında, gelirin ve organik ürün bilgisinin, organik ürün satın almayı pozitif yönde etkilediğini ortaya koymuşlardır. Bunun yanı sıra, cinsiyetin, organik ürün satın almada önemli rol oynadığı, yapılan pek çok çalışmayla görülmektedir. Buna göre, kadınların sağlık ve çevre kaygısının erkeklere oranla daha yüksek olduğu görülmüş ve bu kaygının organik ürüne yönelik pozitif tutumu arttırdığı belirtilmiştir (Lea ve Worsley, 2005; Stobbelaar vd., 2007). Ayrıca, sahip olunan çocuk sayısı da organik ürün satınalma davranışını etkileyen önemli bir faktör olarak ortaya konmaktadır. Araştırma sonuçları, çocuk sahibi olan ailelerin daha

fazla organik ürün satın alma eğiliminde olduklarını belirterek, (McEachern ve Willock, 2004; Freyer ve Haberkorn; 2008; Yue vd., 2008) çocuk sahibi annelerin beslenme alışkanlıklarını değiştirerek, çocuklarının sağlıklarını koruma güdüsüyle organik ürün satın alma davranışı gösterdiklerini ortaya koymaktadır (Riefer ve Hamm, 2008). Bunların yanı sıra, yapılan çalışmalar, yaş değişkenin de organik ürün satın almada önemli bir etken olduğunu göstermektedir. Buna göre, Mintel (2000), Birleşik Krallık özelinde yaptığı çalışmasında, en çok 45-54 yaş arası bireylerin organik sebze satınalma davranışı gösterdiklerini ileri sürerken, Magnusson vd. (2001), en çok 18-25 yaş grubunun organik ürün satın almaya yönelik pozitif tutum sergilediklerini ortaya koymaktadır. Son olarak, bireylerin eğitim düzeyinin organik ürün satınalma davranışı üzerinde etkili olduğunu ileri süren bir takım çalışmalar yapılmış olmakla birlikte birbirine karşıt iki görüş mevcuttur. Bazı çalışmalar, eğitim düzeyi ve organik ürün tüketimi arasında pozitif ilişki olduğunu ileri sürerken (Jolly, 1991), iki değişken arasında negatif ilişki olduğunu süren çalışmalar da mevcuttur (Thompson ve Kidwell, 1998).

Bu çalışma, temel olarak organik gıda satınalma davranışını öngörmede daha kapsamlı bir psikolojik model geliştirmeyi amaçlamaktadır. Bu doğrultuda, planlanmış davranış teorisi temel alınarak, modelin genişletilmesi amaçlanmaktadır. Planlanmış davranış teorisi, akla dayalı davranış teorisinden yola çıkılarak, insan davranışlarını anlamayı ve açıklamayı amaçlayan bir teoridir. Bu nedenle, öncelikle akla dayalı davranış teorisi incelenecektir. Akla dayalı davranış teorisi (Fishbein ve Ajzen, 1975), insan davranışlarının, davranışa karşı tutumun ve öznel (sosyal) normların bir fonksiyonu olan davranışsal niyetler tarafından yönlendirildiğini ileri sürmektedir. Fishbein ve Ajzen (1975), davranışa karşı tutumu, bireyin davranışla ilgili olumlu ya da olumsuz duyguları olarak tanımlamaktadır. Bu tutum, bireyin, olayın sonuçları hakkındaki değerlendirmesinin yanı sıra, bu sonuçların istenilebilirliği yoluyla belirlenmektedir. Öznel normlar ise, bireyin ilgili davranışı gerçekleştirmesiyle ilgili olarak, diğer insanların düşüncelerini dikkate alması olarak tanımlanmaktadır. Böylelikle, davranışa karşı tutum ve öznel normlar, fiili

davranışın temsilcisi olan davranışsal niyeti oluşturmaktadır. Oldukça iyi yapılandırılmış olmasına rağmen, akla dayalı davranış teorisinde bir takım sınırlamalar da mevcuttur. Bunlardan ilki, tutumlar ve normlar arasındaki geçiş riskidir. Bazı durumlarda, tutumlar norm, normlar da tutum olarak algılanabilmektedir. Başka bir kısıt ise, sınırsız hareketle sonuçlanabilecek olan, niyetin davranış olarak kabul edilmesidir. Diğer bir deyişle, bireylerin ilgili davranışı gerçekleştireceklerini ileri sürerken, sınırsız bir yeteneğe ve zamana sahip olduklarını farz ederek karar vermeleridir. Bunun yanı sıra, akla dayalı davranış teorisi, bireylerin davranışlarının tamamen gönüllü olduğunu varsaymaktadır, fakat her davranış gönüllü ve bireyin kendi kontrolü altında gerçekleşmemektedir. Bu kısıtlar doğrultusunda, akla dayalı davranış teorisi genişletilerek, planlanmış davranış teorisi geliştirilmiştir (Ajzen, 1991). Planlanmış davranış teorisi, ancak belirlenen davranış kasıtlı ise bireylerin davranışlarını tahmin edebilmektedir. Ayrıca, bu teori, tutumların, sosyal normların ve algılanan davranışsal kontrolün bir fonksiyonu olan davranışsal niyetin, fiili davranışı yönlendirdiğini ortaya koymaktadır. Bu çerçevede; davranış, bireylerin gerçekleştirme ya da gerçekleştirmeme seçeneğine sahip oldukları hareket olarak tanımlanmıştır. Kasıt ya da niyet, davranış ile aynı anlama gelmez fakat davranışı tahmin etmede, kasıt, davranışın bir temsilcisi olarak kullanılabilmektedir; davranışa yönelik tutum (davranışsal inançlar ve sonuç değerlendirmesi), bireyin davranış hakkında yaptığı genel bir değerlendirme olarak tanımlanmaktadır. Bunun yanı sıra, bireyin, davranışın sonuçlarıyla ilgili inançlarını ve davranışın sonuçlarıyla ilgili olarak olumlu ya da olumsuz değerlendirmelerini içermektedir; sosyal normlar (normatif inançlar ve razı olma güdüsü), bireyin davranışı gerçekleştirirken, etrafındaki insanların kendisinin nasıl davranmasını beklediklerine yönelik sosyal baskıyı ifade etmektedir; algılanan davranışsal kontrol (kontrol edilen inançlar ve etkileri), bireylerin davranış üzerinde sahip oldukları kontrolü ve davranışı gerçekleştirip gerçekleştirememe konusundaki yeteneklerine olan güveni ifade etmektedir.

Bu doğrultuda, mevcut çalışma, bireylerin organik gıda satın alma davranışlarını, en bilinen psikolojik modellerden biri olan Planlanmış Davranış Teorisi kapsamında, modele geri plan faktörler dahil ederek, ayrıntılı bir biçimde incelemeyi amaçlamaktadır. Model, gıda güvenliği endişesi, güven, sağlık bilinci, bireylerin organik gıdalar hakkında sahip oldukları bilgiler ve sosyo-demografik özellikleri geri plan faktörler olarak ele alacak şekilde genişletilmiştir. Böylelikle, bireylerin organik gıda satınalma davranışını yordayan faktörler ortaya konabilecektir. Ayrıca, bu değişkenlerin davranış üzerindeki aracı ve düzenleyici rollerinin incelenmesi amaçlanmaktadır. Bazı değişkenler davranış üzerinde hem doğrudan hem de dolaylı etkilere sahip olabileceğinden, bu ilişkileri incelemek, fiili davranışı açıklamanın daha iyi anlaşılmasını sağlamaktadır. Böylelikle, organik gıda satınalma kararlarında bireylerin motivasyonları hakkında daha derin bir anlayış elde edilebilecektir. Ayrıca, bireylerin psikolojik karar verme süreçlerini anlamak, politika yapıcıların iç pazarda organik gıda tüketimini teşvik edebilecek gerekli müdahaleleri yapmalarını sağlamaktadır. Organik gıda tüketimindeki artış, ülke genelinde sosyal bir etki yaratarak, organik üretim faaliyetlerinin tetiklenmesi hedeflenmektedir.

Çalışma ayrıca politika yapıcılar için bazı öneriler sunmayı amaçlamaktadır. Mevcut çalışma, bireylerin organik ürünlerle ilgili algılarını ve bireylerin, davranışları üzerindeki bazı kişisel, durumsal ve çevresel faktörlerin etkilerini ortaya koymaktadır. Böylelikle, davranışı etkileyen psikografik, sosyo-ekonomik ve durumsal faktörler, ayrıntılı olarak anlaşılabilecek, bireyleri organik ürün tüketimi konusunda motive eden ve organik ürün tüketmelerini engelleyen faktörler ayrıntılı olarak anlaşılabilecektir. Böylelikle, hem devlet hem de özel sektör tarafından alınması gereken eylemler, gerekli müdahalelerin geliştirilmesi için belirlenebilecek ve bireyleri organik ürün satınalmaya motive eden faktörler üzerinde yoğunlaşılarak, konvansiyonel gıdalardan organik muadillerine geçiş yapılabilecektir. Dolayısıyla, bireylerin organik gıda satınalma davranışları, genişletilmiş model sayesinde, daha detaylı olarak anlaşılabilecektir.

Orta Doğu Teknik Üniversitesi çalışanlarına (akademik, idari, teknokent) uygulanan anket çalışması sonucunda, organik kavramının, tarım kimyasallarının, sentetik gübrenin ve hormonların çoğunlukla reddedildiği, atalık tohumlarla yapılan organik faaliyetleri tanımladığını göstermektedir. Bu nedenle, bu çalışma, bahsedilen organik gıda tanımını benimseyen bireyleri hedeflemektedir. Bu doğrultuda, Türkiye Nazilli ilinde faaliyet gösteren, yerel bir çiftlik olan İpek Hanım Çiftliği müşterilerine web tabanlı bir anket uygulanmıştır.

Anketin bağlantısı tüm müşterilere gönderilmiş ve 594 kişi iki hafta içinde anket sorularını yanıtlamıştır. Anket iki bölümden oluşmaktadır. Birinci bölümde, katılımcılara sosyo-demografik bilgileri (yaş, cinsiyet, eğitim düzeyi, hanehalkı geliri, medeni durum ve aile yapısı); gıda satınalma alışkanlıkları (süpermarketler, hipermarketler, marketler, yerel pazarlar, ekolojik veya organik çiftlikler); ve gıda satın alma sıklıkları sorulmaktadır. İkinci bölümde, katılımcıların organik gıda ile ilgili tutum, öznel norm, algılanan davranışsal kontrol, niyet, inanç, güven, gıda güvenliği endişesi, sağlık bilinci ve organik ürünler hakkındaki bilgi düzeyleriyle ilgili bir takım sorular, yedili Likert tipi ölçek kullanılarak (1=kesinlikle katılmıyorum; 7=tamamen katılıyorum) sorulmaktadır.

Örneklem 523 kadın ve 71 erkek katılımcıdan oluşmakta olup, yaş ortalaması 42,31'dir. Örneklemin yarısından fazlasının (yüzde 54,9) hanehalkı geliri 9.000 TL'den yüksektir. Evli katılımcıların oranı yüzde 84,7 iken katılımcıların yüzde 15,3'ü bekardır. Katılımcıların büyük bir bölümü yüksek eğitime sahiptir. Katılımcıların yüzde 53,9'u lisans derecesine sahip, katılımcıların yüzde 25,9'u yüksek lisans ve yüzde 9,8'i doktora derecesine sahiptir. Katılımcıların ortalama çocuk sayısı 1,10 iken, ortalama hanede yaşayan kişi sayısı 3,06'dır. Katılımcıların büyük çoğunluğu, genellikle gıda alışverişi yaptığını ifade ederken, haftada bir kez gıda alışverişi yapanların oranı yüzde 41,2, haftada birden çok gıda alışverişi yapanların oranı ise yüzde 55,8'dir.

İlk olarak, ölçme modeli adı verilen, gözlenen değişkenlerin faktörlerle ilişkisini ortaya koyan modelin doğrulanması gerekmektedir. Ardından, EQS yazılımı 6.1 versiyonu ile yapısal bir denklem modellemesi yapılmakta ve

değişkenler arasındaki nedensel ilişkiyi gösteren yapısal model sonuçları rapor edilmektedir. İncelenen model kapsamında kullanılacak değişkenler, doğrudan gözlenemeyip, çok sayıda değişken tarafından temsil edilen gizil değişkenler olarak adlandırılmaktadır. Bu nedenle, gizil değişkenler arasındaki ilişkileri ortaya koymak amacıyla çok değişkenli istatistiksel analiz yöntemler kullanılmıştır. Ayrıca, değişkenler arasındaki nedensellik ve tek yönlü ilişkiyi inceleyen regresyon eşitlikleri kullanılarak, model sınama yaklaşımlarına başvurulmuştur. Yapısal eşitlik modeli (YEM), değişkenler arasındaki nedensellik ilişkisi ortaya koyan regresyon modelini ve gizil faktör yapılarını inceleyen faktör analizini tek bir analiz altında toplamaktadır (Sümer, 2000). Ayrıca YEM analizi, ölçüm hatalarını en aza indirerek kitle parametrelerine çok yakın değerler elde etmesi nedeniyle birçok araştırmacı tarafından tercih edilen bir model halini almıştır (Sümer, 2000).

Kullanılan ölçeklerin geçerlilik ve güvenilirlik analizleri SPSS ve EQS programları vasıtasıyla test edilmiştir, doğrulayıcı faktör analizi kullanılarak ölçeklerde yer alan ifadelerin gizil değişkenleri yeterince açıklayıp açıklamadığı ortaya konmuştur. Yapısal eşitlik modellemesi varsayımları incelenmiş, çok değişkenli normallik varsayımı sağlanamamıştır. Bu nedenle, sonuçlar yorumlanırken, EQS programının verdiği, dayanıklı (robust) istatistikler kullanılmaktadır.

Araştırmanın sonuçları, genişletilmiş Planlanmış Davranış Teorisinin, bireylerin organik gıda satınalma davranışlarını açıklamak amacıyla kullanılabileceğini göstermektedir. Modele, gıda güvenliği endişesi, sağlık bilinci, güven, organik bilgi ve sosyo-demografik özelliklerin (sadece gözlemlenen değişken model için) dahil edilmesinin, modelin tahmin gücünü ve fiili davranışta açıklanan varyans oranını artırdığı kanıtlanmıştır. Gizil değişken modeli, verilerle uyumludur (CMIN/df=1.562; CFI=.957; RMSEA=.025; CI=.025-.036) ve regresyon katsayıları, organik bilgi, sağlık bilinci ve gıda güvenliği ile ilgili endişelerin tutum üzerinde olumlu bir etkisi olduğunu göstermektedir. Bunun yanı sıra, gıda güvenliği endişesi, sağlık bilinci ve güvenin, algılanan davranışsal

235

kontrol üzerinde olumlu etkileri olduğu görülmektedir. Öte yandan, öznel normlar üzerinde yalnızca bireylerin organik ürünler hakkında sahip oldukları bilginin olumlu etkisi vardır. Ayrıca, Planlanmış Davranış Teorisi'nin öne sürdüğü gibi, tutumlar, öznel normlar ve algılanan davranışsal kontrol, organik gıda satınalma niyetini önemli ölçüde yordamaktadır. Son olarak, fiili organik gıda satın alma davranışı sadece davranışsal niyetle açıklanabilir ve niyet, fiili davranıştaki değişimin yüzde 91,6'sını açıklamaktadır. Bununla birlikte, güvenden algılanan davranışsal kontrole giden yolu kaldırdığımızda, güvenin davranış üzerinde anlamlı ve doğrudan bir etkisi olduğu görülmektedir, aksi takdirde, güven, fiili davranışı, algılanan davranışsal kontrol yoluyla etkileyen bir aracılık ilişkisine işaret etmektedir.

Gözlemlenen değişken modelde, bireylerin organik gıda satınalma davranışlarını daha ayrıntılı bir biçimde incelemek amacıyla modele sosyo-demografik özellikler eklenmiştir. Hipotezlenen model, verilerle iyi bir uyum sergilemekte (CMIN/df=1.976; CFI=.987; RMSEA=.041; CI=.020-.061) ve bulgular organik bilgi, sağlık bilinci ve gıda güvenliği ile ilgili endişelerin gizil değişken modelin sonuçları doğrultusunda, tutumları olumlu yönde etkilediğini göstermektedir. Ayrıca organik bilgi, sağlık bilinci ve hanehalkı geliri öznel normları olumlu yönde etkilemektedir. Yaş, hanehalkı geliri, organik bilgi, sağlık bilinci ve güven faktörlerinin de algılanan davranışsal kontrol üzerinde olumlu etkileri vardır. Ayrıca, teoriyle uyumlu olarak, tutumlar, öznel normlar ve algılanan davranışsal kontrolün, davranışsal niyet üzerinde olumlu etkileri olduğu bulunmuştur. Gizli değişken model sonuçlarından farklı olarak, davranışsal niyetle birlikte algılanan davranışsal kontrol ve güven, hipotezlenen modelin önerdiği gibi bireylerin fiili organik gıda satınalma davranışları üzerinde doğrudan olumlu etkiye sahiptir. Ayrıca, güven, algılanan davranışsal kontrol ve niyetin aracılık ettiği organik gıda satınalma davranışını pozitif yönde etkilemektedir.

Mevcut çalışma, literatüre çeşitli yönlerden katkıda bulunmayı amaçlamaktadır. Çalışmanın temel katkısı, bireylerin organik gıda satınalma davranışlarının incelenmesi amacıyla, gıda güvenliği endişesi, sağlık bilinci, güven

236

ve organik bilgiyi geri plan faktörler olarak ele alan, genişletilmiş Planlanmış Davranış Teorisinin test edilmesidir. İkinci olarak, niyet ve davranış arasında oluşabilecek boşluğu doldurmak için, güven değişkeninin fiili davranış üzerindeki doğrudan etkisi incelenmektedir. Planlanmış Davranış Teorisi, temel olarak davranışsal bir niyetin oluşumunu belirleyen motivasyon süreçlerine odaklandığından ve istemli süreçlere daha az odaklandığından, davranışsal niyetlerin fiili davranışa nasıl dönüştüğünü belirleyen istemli süreçler dikkate alınarak, güvenin davranış üzerindeki rolünü araştırmak amaçlanmıştır (Armitage, 1998). Dolayısıyla, model, güveni ayrı bir yapı olarak ekleyerek hem motivasyonel hem de istemli etkileri dikkate alabilmektedir. Üçüncüsü, gizil değişken modelle birlikte, bireylerin organik gıda satınalma davranışlarını daha iyi anlamak için gözlemlenen değişken model de kullanılmıştır ve modele sosyo-demografik özellikler eklenmiştir. Geri plan faktörü olarak, hanehalkı gelirinin öznel normları ve algılanan davranışsal kontrolü pozitif yönde etkilediği ve yaşın algılanan davranışsal kontrol üzerinde pozitif bir etkisi olduğu bulunmuştur. Diğer bir deyişle, hanehalkı geliri arttıkça, bireyler organik gıda satınalma kararları üzerinde daha fazla kontrol sahibi olduklarını düşünmektedirler; bu da organik gıda satın alımında önemli bir engeli ortadan kaldırmaktadır. Planlanmış Davranış Teorisi modeline dahil edilen bu geri plan faktörler, tutumların, öznel normların ve algılanan davranışsal kontrolün kökenlerini daha iyi anlamamıza yardımcı olmaktadır.

Çalışmanın bulguları, tüketicileri organik gıda satın almaya motive eden birtakım kavramların olduğunu göstermektedir. Özellikle, organik gıda satınalma davranışı gösteren bireyler için sağlık temel konulardan biridir. Daha yüksek sağlık bilincine sahip olan bireylerin, organik gıdaları tercih ettikleri söylenebilir. Sağlık bilinci kavramı, bireylerin organik gıda tüketimini teşvik edebilecek halk sağlığı kampanyaları kapsamında düşünülmelidir. Ayrıca, politika yapıcılar, bireylerin organik gıda satınalma kararını teşvik etmek için, organik gıda tüketiminin birey sağlığına olan faydalarına vurgu yapmalıdır.

Bireylerin, gıda satınalma kararı alırken dikkat ettikleri bir diğer unsur da gıda güvenliği kavramıdır. Gıda güvenliği konularında, özellikle de gıdalardaki pestisit kalıntıları konusunda halkın endişe duyduğu açıktır (Williams ve Hammit, 2001). Tüketiciler, konvansiyonel olarak yetiştirilen ürünlerin tüketimi ve üretimi ile ilişkili olarak yüksek düzeyde risk algılamaktadırlar. Ayrıca, organik olarak yetiştirilen ürünleri kullanırlarken algılanan risklerde, önemli ölçüde bir azalma olduğu görülmektedir (Williams ve Hammit, 2001). Çalışmanın sonuçları, gıda güvenliği konusunda daha fazla endişeye sahip bireylerin, organik gıdalar almayı tercih ettiklerini ortaya koymaktadır. Politika yapıcıların, tüketicilerin gıda güvenliği konusundaki endişelerini dikkate alarak, gıda üretiminde sentetik gübre, hormon ve böcek ilaçlarının kullanımını kontrol etmeleri ve tarımsal faaliyetleri düzenlemeleri gerekmektedir.

Bireyleri organik gıda satın almaya teşvik eden bir diğer faktör ise güvendir. Başka bir deyişle, gıda tedarikçisine olan güven, bireyleri organik gıdaları daha fazla satın almaya yönlendirmektedir. Güven, organik satın almayı teşvik etmede gerekli olan ilişkinin kurulması için bir ön şarttır (Cheng vd., 2008; Bonn vd., 2016) ve bazı çalışmalar, daha yüksek düzeyde güvenin, alıcılar ve satıcılar arasında daha iyi ilişkilerle oluşabileceğini ileri sürmektedir (Doney ve Cannon, 1997; Emiliani, 2000). Bulgularımız ayrıca güvenin, algılanan davranışsal kontrol ve niyetin aracılık ettiği fiili davranış üzerinde sadece dolaylı bir etkisi olmadığını, aynı zamanda davranış üzerinde doğrudan bir etkiye sahip olduğunu da öne sürmektedir. Bu bulgu, perakendecilere veya üreticilere bağlılığın, organik gıda alımında esas teşkil ettiğini göstermektedir. Bunun için, üreticilerin daha detaylı bir etiketleme sistemi oluşturarak veya tüketicilere organik uygulamalar ve ürünler hakkında daha ayrıntılı bilgi vererek, daha güçlü ilişkiler kurmaları gerekmektedir. Sertifikalı organik ürünler yetkili kurumlar tarafından etiketlenmiş olmasına rağmen, bir grup insan bu etiketleme sistemine yeterince güvenmemektedir. Bunun yerine, organik ilkelerle uyumlu üretim yapan yerel çiftliklerden, pazarlardan ya da marketlerden alışveriş yapmayı tercih

etmektedirler. Bu nedenle, politika yapıcılar da bu tüketici modelini dikkate almalı ve tüketicilerin güvendiği yerel üretimi teşvik etmelidir.

Son olarak, çalışmanın bulguları, organik gıda hakkında sahip olunan bilginin, bireylerin organik gıda satın almalarında önemli rol oynadığını ortaya koymaktadır. Organik üretim faaliyetlerini arttırmak için öncelikle politika yapıcılar, tüketicilere organik ürün tüketiminin, bireysel sağlık, çevresel faydalar ve hayvan refahı gibi bir takım faydaları konusunda bilgi vermelidir. Çalışmamızın bulgularının da gösterdiği gibi, organik gıda hakkında daha fazla bilgi sahibi olan bireyler, daha fazla organik gıda satın almayı tercih etmektedir. Biel vd. (2005), davranışsal bir değişikliğin bilinçli bir karar gerektirdiğini ileri sürmekte ve bireylerin zihinlerinde var olan şey ile ilişkili olarak bir eylemde bulunduklarını ifade etmektedir. Bu nedenle, olası yeni kararlar verilirken, bireylere sunulan bilgiler oldukça faydalı olmaktadır. Ayrıca, bilgi kampanyasının davranışsal değişimi uyarmaya yardımcı olabileceğini öne sürülmektedir (Dahlstrand ve Biel, 1997).

Bir diğer önemli bulgu ise tutum ve niyet arasındaki güçlü pozitif ilişkidir. Tutumların niyete ve niyetin de davranışa dönüşme sürecinde, yapılacak müdahaleler oldukça önem arz etmektedir. Politika yapıcıların, organik gıdalar hakkında elektronik, basılı veya sosyal medya aracılığıyla gerekli bilgileri sağlamaları ve tüketicilerin organik gıda anlayışını derinleştirmek için düzenli kampanyalar yapmaları gerekmektedir. Böylelikle, bireylerin tutumları, sürdürülebilir tarım faaliyetlerine önemli ölçüde katkıda bulunan organik gıdaya güven oluşturarak değişebilir (Chen ve Hung, 2016).

Öznel norm, organik gıda satınalma niyetinin önemli bir göstergesidir. Dahlstrand ve Biel (1997) bu bulguyu desteklemekte ve sosyal normların sadece davranışsal değişimin ilk aşamasında etkili olmayacağını, aynı zamanda yeni davranışlarla ilerlemek açısından da önemli olabileceğini ileri sürmektedirler.

Sonuç olarak, bu çalışma bireylerin psikolojik bir çerçeveden organik gıda satınalma davranışlarını belirleyen temel faktörlere dikkat çekmektedir. Bunu yaparak, faktörler arasındaki nedensellik ilişkilerini ortaya çıkarmakta ve

nihayetinde, bireylerin organik gıda satınalma kararı verme süreçlerini daha iyi anlamamıza yardımcı olan psikolojik karar verme adımlarını belirlemektedir. Bu da, bireylerin organik gıda satınalma kararlarında, bireylerin motivasyonları hakkında daha derin bir anlayış elde etmemizi sağlamaktadır. Bireylerin psikolojik karar verme süreçlerini anlamak, politika yapıcıların iç pazarda organik gıda tüketimini artırabilecek gerekli müdahaleleri yapmalarını sağlayacak ve organik gıda tüketimindeki artış, ülke genelinde sosyal bir etki yaratarak, organik üretim faaliyetlerini tetikleyecektir.

Çalışmanın ikinci bölümünde ise, bireylerin, organik gıdaların sahip olduğu bir takım özellikler için ödemeye razı oldukları fiyatların, üç farklı yöntem kullanılarak karşılaştırılması amaçlanmaktadır. Bunlar, geleneksel varsayımsal olmayan seçim deneyi, BDM (Becker-DeGroot-Marschak) mekanizmasının kullanıldığı seçim deneyi ve gerçeğe uygun değerlemelerin elde edilmesi için, BDM mekanizması ile oluşturulan rezervasyon fiyatlarının karşılaştırılması olarak tanımlanmaktadır.

Seçim Deneyi, farklı özellikleri ve nitelik seviyelerini göz önünde bulundurarak, bireylerin ödemeye razı oldukları fiyatı, belirli bir mal veya hizmet için ortaya çıkarmak amacıyla gıda pazarlamasında tercih edilen en yaygın yaklaşımlardan biridir (Gao ve Schroeder, 2009; Bazzani vd., 2017). Seçim deneylerinin sık kullanımı bazı faktörlere atfedilebilir. İlk olarak, seçim deneyleri, esnek olarak değerlendirilir çünkü çeşitli özelliklerin eşzamanlı olarak değerlendirilmesine olanak tanır. İkincisi, seçim deneyleri, rastgele fayda teorisi (Ben-Akiva ve Lerman, 1985) ve Lancaster'ın (1966) tüketici talebi teorisi ile tutarlıdır, ki bu bireylerin bir malda bulunan niteliklerin tüketiminden fayda elde edebildiklerini göstermektedir. Üçüncü olarak, seçim deneyi senaryoları, tüketicilerin fiili satınalma kararlarını taklit etmektedir (Lusk ve Schroeder, 2004). Seçim deneyi senaryoları gerçek yaşam durumlarını yakından yansıtabildiğinden, bireylerin ödemeye razı oldukları fiyatın tahmin edilmesinde varsayımsal önyargıya daha az eğilimlidirler (Lusk ve Schroeder, 2004).

Bazı araştırmacılar, varsayımsal seçim deneylerinin, bireylerin gerçek seçimlerini yansıtmayabileceğini ve bireylerin tercihlerini tahmin etmede varsayımsal önyargılara yol açtığını öne sürmektedir (Cameron vd., 2002). Bireyler ekonomik bir taahhütle teşvik edilmediklerinden, gerçekte ödediklerinden daha yüksek fiyatlar ödeyeceklerdir (Lusk ve Shogren, 2004). Bazı araştırmalar, bireylerin ödeme istekliliğinin varsayımsal çalışmalarda, varsayımsal olmayan çalışmalardan anlamlı olarak daha yüksek olduğunu göstermiştir (Chang vd., 2009; Lusk ve Schroeder, 2004; Yue vd., 2009). Öte yandan, Zanoli (1998), ankete katılanların serbest bırakma davranışı nedeniyle anketlerin genellikle primlerin asıl tutarını hafife aldığını iddia etmektedir. Reel piyasada, tüketiciler genellikle organik ürünler için çok daha fazla prim öderler. Bu nedenle, birçok araştırmacı, araştırmaya katılanlara gerçek ekonomik teşvikler vererek varsayımsal önyargıları azaltmak için varsayımsal olmayan ya da gerçek seçim deneylerini kullanmaya başlamıştır (Gracia, 2014; Lusk ve Schroeder, 2004; Alfnes vd., 2006; Lusk vd., 2008; Chang vd., 2009). Gerçek seçim deneylerinde, genel olarak, tüm seçim senaryoları tamamlandıktan sonra, bunlardan biri rastgele bir şekilde bağlayıcı olarak seçilir ve her katılımcı, bağlayıcı seçim senaryosunda seçilen alternatifi satın almak ve seçilen seçenek için fiyatı ödemek zorundadır. Bu prosedür çeşitli araştırmalar tarafından uygulanmıştır ve gerçek ekonomik teşvikler vermenin, bireylerin gerçek tercihlerini açıklamada etkili olduğunu göstermektedir (Alfnes vd., 2006; Chang vd., 2009; Lusk ve Schroeder, 2004).

Mevcut çalışmada, beş öznitelik kategorisine göre farklılaştırılmış iki ürün alternatifi için deneklere farklı seçenekler sunularak, varsayımsal olmayan bir seçim deneyi uygulanmıştır. Bunlar, ürün tipi (organik sertifikalı ve organik yetiştirilmiş ancak sertifikalı değil), fiyat (13TL, 17TL, 21TL, 25TL), sağlıklı (evet, hayır), çevre dostu (evet, hayır) ve hayvan refahı (evet, hayır) olarak belirlenmiştir.

Öte yandan, deneysel çalışmalarda en çok tercih edilen açık artırma yöntemlerinden biri olan BDM mekanizması, bireylerin değerlemelerini ortaya çıkarmak için kullanılmaktadır (Starmer ve Sugden, 1991; Hey ve Lee, 2005;

Drehmann vd., 2007). BDM, karar vericilere varlıklarının gerçek değerlerini gösterebilmeleri için ekonomik bir teşvik sağlayan, teşvik edici, uyumlu bir mekanizmadır ve mekanizma, karar vericilerin gerçek varlık fiyatlarını gösterebilecekleri en uygun stratejidir (Keller vd., 1993). Ayrıca, mekanizma denekler arasındaki rekabeti önler (Ginon vd., 2014).

Varsayımsal olmayan seçim deneyinin yanı sıra, mevcut çalışmada, BDM mekanizması iki farklı şekilde kullanılmaktadır. İlk olarak, BDM mekanizması, varsayımsal olmayan bir seçim deneyinde, ürünün piyasa fiyatını belirlemek için kullanılmaktadır. İkinci olarak, deneklerin verilen senaryolar için ödemeye razı oldukları fiyatı kendilerinin belirlediği ve sonra aralarında bir seçim yapmaları şeklinde kullanılmaktadır.

Mevut çalışma, Türkiye'deki organik gıda pazarına çeşitli yönlerden katkıda bulunmaktadır. İlk olarak, ödemeye yönelik gerçek bir istekliliğin sağlanması amacıyla, kuramsal olmayan bir çerçevede, bireylere gerçek ekonomik teşvikler verilmektedir, böylelikle, bireylerin satınalma tercihlerini gerçek hayattakine uygun olarak yapmaları sağlanmaya çalışılmaktadır. Bu doğrultuda, mevcut çalışma, geleneksel gerçek seçim deneyi, BDM mekanizmasının kullanıldığı seçim deneyi ve bireylerin ödemeye razı oldukları fiyatları kendilerinin belirlediği BDM mekanizması olarak tanımlanan üç yöntemi karşılaştırmış ve gıda ürünleri için daha gerçekçi değerlemeler elde etmeye çalışmıştır.

Bunun yanı sıra, bireylerin organik gıda tercihlerini önemli ölçüde etkileyen faktörlerin ve bunların bireyler tarafından nasıl fiyatlandırıldıklarının incelenmesi amaçlanmıştır. Bunun için, çalışmanın katılımcılarına iki ürün alternatifi sunulmaktadır. Ürün, sertifikalı (organik logolu) ve organik prensiplere uygun olarak yetiştirilen ancak sertifikalandırılmamış (yerel organik) olarak sınıflandırılmıştır. Böylelikle bireylerin farklı ürünlere olan tercihlerinin ve bu ürünler için bir fiyat primi ödemeye istekli olup olmadıklarının ortaya konulması amaçlanmıştır. Bulgular, bireylerin ödemeye razı oldukları fiyatın, geleneksel gerçek seçim deneyi ve BDM mekanizmasının kullanıldığı seçim deneyinde önemli ölçüde farklılık göstermediğini ortaya koymaktadır. Bununla birlikte,

242

sertifikasız ve yerel olarak üretilen organik ürünlerin fiyat tahminleri, BDM deneyindeki sertifikalı organik muadillerinden önemli ölçüde farklılık göstermekte ve daha yüksek bulunmaktadır.

Bilindiği üzere, organik, yeşil, yerel olarak üretilen ve çevre dostu olarak adlandırılan ürünler, geleneksel muadillerinden daha pahalıdır. Bu nedenle, bireylerin bu ürünlere bir fiyat primi ödemeye razı olmaları için, bireysel sağlık, toplum, diğer organizmalar ve çevre üzerinde birtakım yararları olduğunu düşünmeleri gerekmektedir. Bununla birlikte, bireylerin bu ürünlerin ilgili özelliklerini nasıl fiyatlandırdıkları ve hangi niteliklerin onlar için öncelikli olduğu merak konusudur. Çalışma, ayrıca, organik ürünlerin iddia ettikleri, sağlıklı olma, çevre dostu olma ve hayvan refahına uygun olma özellikleri için, bireylerin ödeme istekliliğini ortaya koymaktadır. Çalışmanın bulguları, bireylerin en çok sağlık özniteliğine, ardından hayvan refahı ve son olarak çevre dostu özniteliklerine değer verdiklerini ortaya koymaktadır.

Son olarak, organik ürünlerle ilgili verilen bilginin, bireylerin tercihleri ve ödemeye razı oldukları fiyat üzerinde anlamlı bir etkisi olup olmadığı incelenmiştir. Bulgular, ürünün özellikleri ile ilgili verilen bilginin, geleneksel gerçek seçim deneyi ve BDM mekanizmasının kullanıldığı seçim deneyinde önemli ölçüde farklılık göstermediğini ortaya koymaktadır. Bunun karşılık, organik ürünlerle ilgili verilen bilginin, bireylerin BDM mekanizması kullanılarak oluşturulan rezervasyon fiyatlarında önemli bir artışa neden olduğu görülmektedir.

F. TEZ İZİN FORMU / THESIS PERMISSION FORM