

How consumers' consciousness and perception levels affect purchase intention of organic chicken meat in Turkey

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Abstract: The main purpose of this study was to analyze the impact of consumers' consciousness levels through their perception levels on purchase intention towards organic chicken meat. While consciousness levels of organic chicken meat were handled in terms of animal welfare awareness and health, perception levels were dealt with in terms of food safety, price, and benefit. Structural equation modeling was used to find out which factors have a significant effect on purchase intention. As a result of the analysis, it was found that consumers' animal welfare awareness had a positive effect on food safety perception and health consciousness had a positive effect on benefit perception. It was established that food safety perception had a positive effect on benefit perception and benefit perception had a positive effect on price perception. Besides, it was found that food safety perception and price perception had a positive effect on purchase intention.

Key words: Food safety, animal welfare, organic chicken meat, structural equation modeling

1. Introduction

Today, the vast majority of societies question plant and animal production models and emphasize healthy products and environmentally friendly production instead of industrial production [1,2]. Consumers perceive organic food products as the products which are of higher quality compared to conventionally produced alternative products, do not pose a risk to human health, take into account animal welfare, and are also environmentally friendly [3–7]. Production and marketing strategies of organic food products, on the other hand, are determined by consumer beliefs, attitudes, their reactions to organically grown products, and the price premium they are willing to pay [8]. The willingness to pay a higher price for organic food, especially meat products, seems to be related with the pricing and convenience problems of the market [9]. In this case, the solution of the problems seems to be the demand created by the customers themselves. Therefore, the producer, marketing channel, and also the customer aspects needed to be studied for the development of the market. Especially in developing or underdeveloped countries, the customers' willingness is directly related with pricing but also could be enhanced by awareness level through the process [10].

In Turkey, there have been numerous studies regarding consumer behavior related to organic food products. These are studies that address the willingness to pay more for organic food [11–13], the attitudes of consumers towards organic food [14–19], and the main factors that motivate consumers to purchase organic food products [20–26].

There are quite a limited number of studies on how consumers' perceptions of organic food are formed, by which factors and to what extent they are affected, and interaction of these with their purchasing decisions. Aryal et al. [9] analyzed consumers' perceptions and attitudes towards organic foods and reported that consumers make their purchasing decisions according to their knowledge, attitude, and intention. Consumer perception plays a role in consumer actions, habits, attitudes, beliefs, and purchasing decisions [27,28]. Therefore, in the present study, the effect of consumers' consciousness levels (health consciousness and animal welfare awareness) on perception levels (food safety, price, and benefit) and the effect of their perception levels on purchasing intention were investigated. In addition, the sociodemographic structure of organic chicken meat consumers was revealed. The variables that have a significant impact on consumers' purchase intention were identified, and it was put forward

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which subjects the sector should primarily focus on in order to develop the potential market.

1.1. Literature review and hypotheses development

Consumer attitudes and purchasing behaviors towards organic food products differ compared to their industrial alternatives. The process of purchasing organic food products begins with the effort to have information about these products, the perception of the differences of these products from other products, and awareness.

Today, it has become important for the consumer that livestock farming is based on ecological methods carried out without disturbing the balance of nature and that provides better animal welfare conditions [4,29,30]. Consumers often want animals to be raised in accordance with the welfare conditions in order to obtain healthy and quality products [31]. In their study, Harper and Makatouni [6] explained animal welfare, one of the motivations of organic food buyers, as an indicator of healthy and safe food. Therefore, the relationship between animal welfare awareness level and food safety perception is stated by the following hypothesis.

H1: Consumers' animal welfare awareness level has a positive effect on food safety perception.

In the studies conducted, health awareness is at the top of the main factors that affect consumers' decision to purchase organic products [32–34]. Consumers with high health consciousness monitor health-related developments and try to reduce the risk of disease by taking the necessary measures to stay healthy [35]. The negative effects of industrial livestock farming practices on human and animal health and the environment have increased the interest in organic meat [4,6,36,37]. Animal diseases transmitted to humans, genetic manipulations, and the use of antibiotics and hormones in livestock farming have caused consumers to worry about health and food safety and therefore have increased the demand for organic meat [4,5]. Health consciousness, which evaluates the degree of readiness to take healthy actions, is a comprehensive concept used to determine if a person is prepared to do something for his/her own health [38]. It is believed that if an individual is ready to take measures to make himself/herself healthier, his/her attitude towards organic foods should be more positive [33]. Therefore, the relationship between health consciousness and consumers' benefit perception was investigated in the study.

H2: Consumers' health consciousness level has a positive effect on the perception of benefit.

The product features that consumers pay attention to when buying food could be listed as nonuse of additive and preservative agents, no pesticides or chemical residues, high nutritional value of the product, and mode of production [4,39]. Van Loo [5] stated that the main motivation for the purchase of organic chicken meat

was that organic chicken meat contained fewer residues and was perceived as safer and healthier. In addition, the nutritional content and naturalness of foods are related to the utilitarian attitude of consumers [40]. Therefore, the third hypothesis (H3) is proposed.

H3: Consumers' perception of food safety has a positive effect on the perception of benefit.

Consumers tend to develop positive attitudes and behaviors towards some concepts that they consider valuable. The concept of value, far out of its financial meaning, is the assessment that the consumer appraises the benefit of the product he encounters and measures the benefit against the financial payment that is requested from him/her [41]. In order to understand the value perception, it is also important to measure the benefit perception that focuses on the concept of positive value. In their study, Lee and Yun [40] showed that consumers' tendencies to purchase organic products were determined by utilitarian attitudes. However, in this study, the utilitarian perception that determines the purchasing tendency is the benefit perception concerning nutrient content and animal welfare attributes. As for our study, questions aimed at measuring health-based benefit perception were taken into consideration. In her research, Sarıkaya [14] established that four factors became prominent in terms of consumers' organic product buying behaviors and attitudes. These were responsibility, trust, value, and benefit. Consumers are willing to pay higher prices for the products that they find beneficial for their health [42,43]. Therefore, the fourth hypothesis (H4) is proposed.

H4: Consumers' perception of benefit has a positive effect on price perception.

In the studies conducted, one of the factors that consumers attach utmost importance to for organic food product purchasing preference is food safety [29,44,45]. Therefore, the following hypothesis is suggested.

H5: Consumers' perception of food safety has a positive effect on purchase intention.

Consumers' perception of price also affects food consumption [46,47]. The high prices of organic foods negatively affect the intention to purchase organic food [3,5,16,42]. However, at the same time, it has been reported in many studies that consumers seem willing to pay more for organic products [42,43]. In addition, there are also studies reporting that thoughts about price have little impact on attitude [48] and that they have no significant effect [49,50]. The role of price in the purchase of organic food is observed in different ways and in a widespread manner [40,45]. Therefore, in this study, the price is regarded as an element that could affect the intention to buy organic chicken meat.

H6: Consumers' perception of price has a positive effect on purchase intention.

The following figure shows the conceptual model of this study, based on the six hypotheses proposed above (Figure).

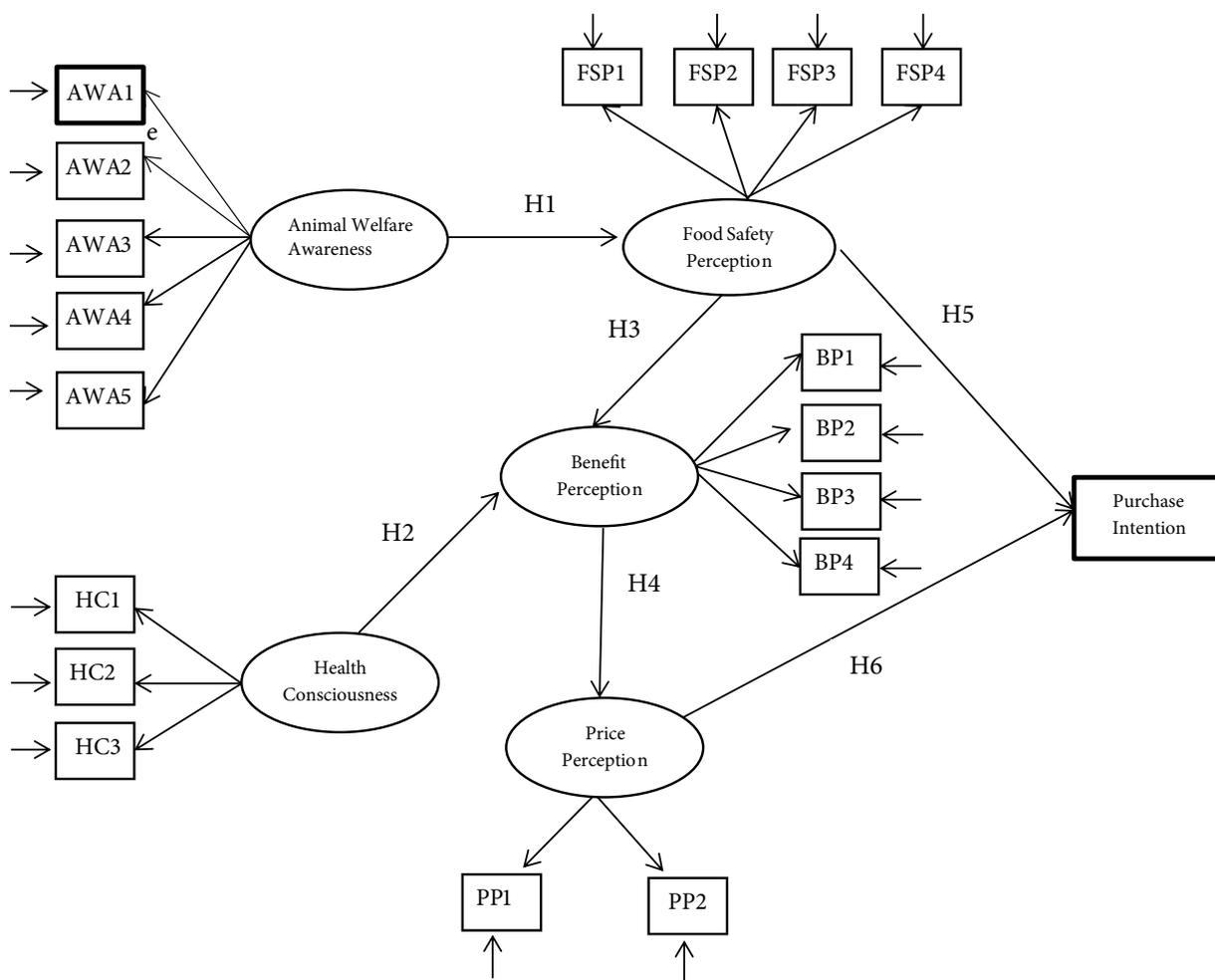
2. Materials and methods

Research data were obtained by sending an online questionnaire to consumers on the Internet via email, Facebook groups, and websites selling organic chicken meat. Consumers who live in Turkey and consume organic chicken meat participated in the research.

The data collected from the questionnaire were analyzed using the SPSS and AMOS software. The data obtained was evaluated in terms of missing values and

outliers; the analysis was carried out with a total of 239 people. The majority of the respondents were female (61.5%). Most of the respondents (50.8%) were between 41 and 67 years old. The majority of the respondents (73.2%) were married. Nearly, 51% of the consumers were bachelor's degree holders. According to the monthly average household income, 38.1% of the consumers had income over 10,000 Turkish Liras (TL).

Survey questions were determined by taking into consideration previous studies held in this field. All items were evaluated on a five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). In the study, animal welfare awareness was measured with scales consisting of five items



- Notes: H1: Consumers' animal welfare awareness level has a positive effect on food safety perception.
- H2: Consumers' health consciousness level has a positive effect on the perception of benefit.
- H3: Consumers' perception of food safety has a positive effect on the perception of benefit.
- H4: Consumer's perception of benefit has a positive effect on price perception.
- H5: Consumers' perception of food safety has a positive effect on purchase intention.
- H6: Consumers' perception of price has a positive effect on purchase intention.

Figure. Conceptual framework with hypotheses.

and health consciousness with scales of three items. A scale consisting of 4 items was used for benefit perception, a scale of 4 items for food safety perception, and a scale of 2 items for price perception. A single indicator (item) was employed for the purchase intention variable, and the participants were asked to give the variable a score between 0 and 100 (Table 1).

In the above table, constructs of consciousness level that we included in the analysis within the scope of our model are animal welfare awareness and health consciousness. The constructs concerning perception level are food safety, benefit, and price perceptions.

2.1. Data analysis

In this study, the analysis was divided into two parts, which were confirmatory factor analysis (CFA) and the structural equation modeling (SEM). Before the structural equation model was conducted, validity and reliability had been confirmed.

Validity is concerned with how well a measure reflects its unobservable construct whereas reliability is related to the consistency of the measure. CFA was employed to assess construct validity in terms of convergent validity and discriminant validity. Cronbach's alpha value was used to assess reliability measuring consistency amongst individual items in a scale [51].

Convergent validity and discriminant validity were checked for each construct. For convergent validity, all standardized factor loadings should be statistically significant and should be 0.5 or higher, and ideally 0.7 or higher. In addition, the average variance extracted (AVE) value should be greater than or equal to 0.5 and the construct reliability value (CR) should be greater than or equal to 0.7 and [51,52]. As shown in Table 2, Convergent validity was achieved since all the constructs fulfilled these three requirements.

Cronbach's alpha values ranged from 0.81 to 0.93, all of which were higher than the acceptable level of 0.70 [53].

Table 2 presents the loadings, construct reliability, average variance extracted, Cronbach's α values of the five constructs and goodness of fit measures of the CFA model.

Discriminant validity is achieved when the square root of AVE for each construct is higher than the correlation coefficients among the constructs [51,54]. Referring to Table 3, this condition has been satisfied.

Structural equation modeling was used to test the proposed model and hypotheses (Figure). The effects of the consciousness levels (health, animal welfare) and organic chicken meat consumer perceptions (food safety, price, and benefit), which can be measured by more than one indicator, on the purchase intention were simultaneously included in the model and the results of the analysis were interpreted.

3. Results

When the regression coefficients of the model were examined in Table 4, it was detected that the regression coefficients pertaining to all coefficients were significant ($P < 0.05$).

The standardized regression coefficient between animal welfare awareness and food safety perception was determined as 0.18, the effect of health consciousness on benefit perception as 0.22, the effect of food safety perception on benefit perception as 0.50, the effect of benefit perception on price perception as 0.45, the effect of price perception on purchase intention as 0.27, and the effect of food safety perception on purchase intention as 0.21.

To assess the model fit, the following six goodness-of-fit indices were used: χ^2 per degree of freedom (χ^2 / df), the comparative fit index (CFI), the normed fit index (NFI), the Tucker-Lewis index (TLI), the root mean square error of approximation (RMSEA), and the standardized root mean square residual (SRMR). We compared the fit of each model using the chi-square difference test. The χ^2 / df ratio of less than 2 indicates a good fit, whereas the range of 2 to 5 indicates an acceptable fit [55]. The CFI, NFI, and TLI fit indices range from 0 to 1, with values exceeding 0.90 indicating a good fit to data [56,57]. For the SRMR and RMSEA, values below 0.05 indicate a good fit and values between 0.05 and 0.08 represent an acceptable fit [58,59].

The χ^2 / df for this model was 1.83 ($df = 146$), which was smaller than 2 and therefore indicates good fit. Other fit indexes also showed a good fit for the measurement model. The CFI was 0.95 which is greater than the recommended value of 0.90. Furthermore, the NFI was 0.90, and TLI was 0.94, which exceeds the recommended cut-off level of 0.90. Finally, RMSEA and SRMR were 0.06 and 0.07, respectively, which are also less than or equal to the suggested acceptable fit to the data.

4. Discussion

Through the marketing perspective of an organic market, all of the players of the channel should get the benefit of better quality, pay, and conditions to encourage the system. Organic production costs are higher than the regular production, which leads to higher pricing. This is usually discouraging for the consumers. However, the research reveals that the benefit perception of any product is not only limited to the price [48]. Therefore, defining the benefit perception of a consumer and learning the ways to positively influence it towards the healthier or greener or more animal-friendly direction requires the researchers to define and understand the connections between these dimensions.

Table 1. List of items used for each construct.

Constructs		Items
Animal welfare awareness (AWA)	AWA1	It is important that the animals from which the meat I consume is obtained are slaughtered without suffering.
	AWA2	It is important that the animals from which the meat I consume is obtained consume healthy and sufficient water.
	AWA3	It is important that the animals from which the meat I consume is obtained consume healthy and sufficient feed.
	AWA4	The animals from which the meat I consume is obtained must not be subjected to violence or torture.
	AWA5	The animals from which the meat I consume is obtained must have been provided with adequate health care during the rearing process.
Health consciousness (HC)	HC1	It is important for me to take care of my health.
	HC2	I am very sensitive about changes in my health.
	HC3	I eat healthy foods to be healthy.
Food safety perception (FSP)	FSP1	Since antibiotics are not used in organic chicken breeding, chicken meat does not harm the consumers.
	FSP2	Organic chicken meat is hormone-free.
	FSP3	In the organic chicken breeding, animals are fed on genetically unmodified feeds.
	FSP4	Organic chicken meat does not contain harmful chemicals.
Benefit perception (BP)	BP1	Consuming organic chicken meat protects me against diseases.
	BP2	Those who consume organic chicken meat have stronger immune systems.
	BP3	Consuming organic chicken meat protects a person against cancer.
	BP4	Consuming organic chicken meat protects a person against chronic diseases such as heart, blood pressure, and diabetes.
Price Perception (PP)	PP1	The price I pay for organic chicken meat is not much for my health.
	PP2	Organic chicken meat is worth the price I pay.
Purchase Intention (PI)		I intend to consume organic chicken meat for the rest of my life. (Please give a score between 0 and 100)

Defining the consumer profile demographically, behaviorally, or geographically remains incapable in explaining the consumption and purchase decision. Therefore, it is also important to determine the perception of the nature of the relevant product or product group and the marketing components related to it by the consumer. A potential consumers' behavioral decision-making chain towards purchase begins with the "perception" step relating to the consumers' marketing mix. Understanding and managing these perceptions well might mean directing consumers to desired behaviors (purchasing, repurchasing, increasing consumption, etc.). On the other hand, the accumulation of knowledge plays a major role in shaping perception.

The present study enabled to determine which factors are effective in the organic chicken meat purchase intention of the consumers in Turkey. In the study, it was found that consumers' animal welfare awareness had an effect on their food safety perception, and health

consciousness had an effect on the perception of benefit. It was determined that food safety perception had an effect on benefit perception and benefit perception had an effect on price perception, and it was shown that safety perception and price perception had a direct effect over purchase intention.

In this study, it was found that animal welfare awareness had a positive effect on food safety perception, but level of the effect was not very high (0.18). The effective loadings on animal welfare awareness were found to be AWA2, AWA3, AWA1, AWA5, and AWA4, respectively (Tables 1 and 2).

It was also shown in previous research that animal welfare awareness is influential in consumer decisions for consumers who buy organic food, although not as much as health concerns [28,40,45,60]. Honkanen et al. found that environmental and animal welfare concerns had a strong impact on the attitude towards organic foods [61]. McEachern and McClean emphasized that environmental

Table 2. Results of convergent validity and goodness of fit measures of the model.

Constructs	Items	Standardized loadings	Construct reliability	Average variance extracted (AVE)	Cronbach's alpha
AWA	AWA1	0.78	0.92	0.71	0.93
	AWA2	0.94			
	AWA3	0.93			
	AWA4	0.77			
	AWA5	0.78			
HC	HC1	0.83	0.81	0.59	0.81
	HC2	0.81			
	HC3	0.66			
FSP	FSP1	0.66	0.84	0.58	0.84
	FSP2	0.76			
	FSP3	0.80			
	FSP4	0.82			
BP	BP1	0.72	0.87	0.92	0.87
	BP2	0.78			
	BP3	0.88			
	BP4	0.80			
PP	PP1	0.74	0.79	0.66	0.79
	PP2	0.88			

Notes: Goodness-of-fit indexes: $\chi^2/df = 1.78$ (222.19/125), CFI = 0.96, NFI = 0.92, TLI = 0.95, RMSEA = 0.06, SRMR = 0.05

Table 3. Results of discriminant validity analysis.

Construct	AWA	HC	FSP	BP	PP
AWA	0.84				
HC	0.50	0.77			
FSP	0.18	0.20	0.76		
BP	0.06	0.32	0.53	0.96	
PP	0.13	0.27	0.41	0.44	0.81

Note: The square root of AVE value for each construct is indicated along the diagonal while the correlation coefficient between each pair of constructs is presented the off-diagonal element.

AWA: Animal welfare awareness; HC: Health consciousness; FSP: Food safety perception; BP: Benefit perception; PP: Price perception

and animal welfare concerns explained the high demand for organic foods [62]; on the other hand, Michaelidou and Hassan, in their research, underlined that consumers' tendency to act ethically due to ethical and environmental concerns affects attitudes and purchase intentions towards organic foods [29]. Research results conclude that the

benefit logic of the consumers is stronger than their animal welfare concerns. Even though increasing of animal welfare concerns of the consumer could have a positive angle on their purchase intentions, the marketing channel should focus on the idea shift on emphasizing the benefit aspect.

It was identified that health consciousness had a positive effect on the benefit perception (0.22). In our study, the effective loadings on health consciousness were found to be HC1, HC2, and HC3 and on benefit perception as BP3, BP4, BP2, and BP1, respectively (Tables 1 and 2). Magnusson et al. emphasized that health consciousness influenced attitude and purchase intention for organic products [4]. In his research, Chen stated that health and environmental consciousness were important factors in organic food consumption, and in addition, a healthy lifestyle had a mediating effect between health consciousness, environmental attitude, and consumers' attitude towards organic food [33].

On the other hand, there are some studies in which the relationship between health consciousness and the attitude towards organic foods is not supported [50,63]. Similarly, in a research conducted in Spain [64], it was found that consumer attitude towards organic food was formed by the influence of subjective norms, environmental and health

Table 4. Statistical results of the structural model.

Hypothesis	Structural paths		Unstandardized coefficients	Standardized coefficients	Standard error	t-value	P-value	
H1	AWA	→	FSP	0.22	0.18	0.09	2.44	0.015
H2	HC	→	BP	0.34	0.22	0.10	3.28	0.001
H3	FSP	→	BP	0.64	0.50	0.09	6.88	***
H4	BP	→	PP	0.38	0.45	0.07	5.20	***
H5	FSP	→	PI	10.09	0.21	3.35	3.02	0.003
H6	PP	→	PI	11.88	0.27	3.21	3.70	***

Note :*** P < 0.001

AWA: Animal welfare awareness; FSP: Food safety perception; HC: Health consciousness;

BP: Benefit perception; PP: Price perception; PI: Purchase intention

concerns, and subjective knowledge; however, health and environmental consciousness did not explain the attitude towards organic food. In their study, Kvatchadze and Akıncı identified the effect of consumers' health consciousness, environmental consciousness, and organic food knowledge on their purchase intention through their attitudes towards organic foods [65].

In our study, the effect of food safety perception on benefit perception was established as 0.50. Consumers think that safe foods are beneficial for their health [44]. Lockie et al. established that consumers bought organic products because they perceived that these products would not have any chemical residues and would be better for their health [32]. Besides, in the study, it was identified that benefit perception had an effect on price perception (0.45). The effective loadings on price perception were found to be PP2 and PP1, respectively. In a study conducted by Rodriguez et al. in Argentina, it was suggested that the willingness to pay for organic foods was related to being an organic food consumer, the availability of products in the market, and consumers' health perceptions about hormone and pesticide use [66].

The effect of food safety perception on purchase intention was found to be 0.21. The effective loadings on food safety perception were determined as FSP4, FSP3, FSP2, and FSP1, respectively (Tables 1 and 2). Wee et al. identified food safety as the perception that had the highest impact on the intention to purchase organic food [28]. The food safety perception of the consumers could be enhanced by showing good auditing performances of organic certification associations, providing the market with more clear information about the control and the promises of organic certification and how these audit efforts could lead to safer food.

As a result of the study, it was found that price perception regarding organic chicken meat also had an effect on purchase intention (0.27). This finding is

consistent with previous study results. Armağan and Özdoğan found that consumers had the intention to pay 30% more for organic meat and eggs in comparison with conventional alternatives [2]. Organic product consumers reported that they were willing to pay more because they were concerned about food safety.

According to the results of our study, it was determined that health consciousness had a positive effect on the benefit perception, and animal welfare awareness had a positive effect on the food safety perception. In addition, it was found that consumers' food safety perception and price perception had an effect over purchase intention and benefit perception had an effect over purchase intention through price perception.

From the point of practitioners, it is important to know the factors that affect the formation of the perception of organic foods and the effect levels of those factors. In order to persuade consumers to purchase organic food, it may be recommended to conduct informative promotional activities in accordance with the study findings. These promotions should imply that organic chicken meat is a safer, beneficial, and value-for-money product and should aim to raise health and animal welfare consciousness. If food safety perception increases, it increases benefit perception, so that it will affect the value-for-money perception and increase purchase. Furthermore, as the health consciousness increases, the benefit perception increases, and likewise, as the animal welfare awareness increases, so does the food safety perception, which will again lead to a positive impact on purchase intention. The antiadvertisement of nonorganic consumption to promote food safety over pesticide and genetically modified organisms, or to emphasize negative effects of hormone usage on meat products could not be directly done, but they may be implied to raise awareness of the benefits and food safety and also the animal welfare and health consciousness.

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