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Original Article

Determining Factors Affecting Consumer's Decision to Purchase Organic Chicken Meat

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ABSTRACT

In the present study, the effect of consumers' perception levels (product, price, and benefit perception), consciousness levels (health, environment, and animal welfare), and sociodemographic characteristics on the purchase decision of organic chicken meat were examined. Logistic regression analysis was used to determine the relationship between the purchase decision of organic chicken meat and the perception level, consciousness level, sociodemographic characteristics. As a result of the analyses made, it has been determined that organic chicken meat naturalness perception, value-quality perception, health control awareness, awareness of animal life quality, and income level havestatistically significant effects on the probability of purchasing organic chicken meat.In conclusion, to raise consumer awareness the issues that need to be emphasized are that organic meat is natural, reliable, healthy and suitable for animal welfare.

INTRODUCTION

The organic food market is a sector, development of which is steered by the consumer preferences and that tends to grow continously on a global scale. Knowing consumers' consumption characteristics helps to achieve the most effective use of marketing resources and finding solutions to the problems of marketing management (Ustaahmetoğlu & Toklu, 2015). Consumers' decision-making processes for organic products are highly complex. The studies conducted reveal that organic food can be perceived as healthier and safer and organic practices can be perceived as more environmental friendly (Jolly, 1991; O'Donovan & McCarthy, 2002; Magnusson *et al.*, 2003; Van Loo *et al.*, 2010). As for the consumers who are sensitive to behaviors towards animals; while buying animal products, they pay attention to the fact that they are obtained by rearing practices that are compliant with animal welfare (Harper & Makatouni, 2002; Toma *et al.*, 2011).

In Turkey, a limited number of studies have been carried out on organic products and organic meat consumption. There are fewer studies to determine the factors that affect the consumption of organic chicken meat (Armağan & Özdoğan, 2005; Gündüz & Bayramoğlu, 2011; Ayhan, 2014). A large part of the studies conducted in Turkey examined the willingness for consuming and paying for organic chicken meat depending upon sociodemographic variables such as price, income level, and education level. However, this study has the feature of being a comprehensive analysis in which consumer's consciousness levels (health, environment, and animal welfare consciousness levels) and perception levels (product, price, benefit perceptions) are also included in the model.

In the present study, the effect of consumers' perception levels (product, price, benefit perception), consciousness levels (health, environment, and animal welfare), and sociodemographic characteristics on the purchase decision of organic chicken meat were examined. The aim of this study is to determine which factors affect preference of organic chicken meat consumption and to give way to future studies to increase consumers' organic chicken meat consumption.

Within the scope of the study, the perception level was examined in three dimensions in terms of product price, product features, and product benefits. Consumers' consciousness levels were evaluated within three main dimensions as health consciousness, environmental consciousness, and animal welfare. Sociodemographic characteristics were also included in terms of gender, marital status,education level, age, and income level.When the literature was reviewed, it was identified that individuals who preferred organic animal products differed in their levels of perception, levels of consciousness about organic production processes and sociodemographic characteristics when compared to those who didn't prefer (O'Donovan & McCarthy, 2002; Fotopoulos & Krystallis, 2002; De Magistris & Gracia, 2008; Hughner *et al.*, 2007); and for this reason, the level of perception, the level of consumer consciousness and sociodemographic characteristics were included in the scope of the study.

Consumer perception level

In the studies conducted in terms of the consumption preferences of organic meat products, it is observed that the studies generally discussed the variables such as the consumer perception of the different characteristics of the marketing mix that are related to price, distribution, and product (such as price, the confidence in the product, and accessibility) and the attitude towards these concepts (Jolly, 1991; Magnusson *et al.,* 2001).

It is seen that the benefit perception with regards to the product is effective when the consumers prefer the product more than its alternatives. In the study, the questions aimed at assessing benefit perception in terms of health were added to the perception scale. Therefore, in order to determine whether there was particularly a health-based benefit perception regarding organic meat products; it was aimed to measure the perception in terms of price, product specifications, and product-related benefit perception, by means of adding questions to the scale to measure product benefit perception (Lee & Yun, 2015; Jolly, 1991; O'Donovan & McCarthy, 2002).

Consumer consciousness level

It is stated that individuals with improved health consciousness display common features such as trying to prevent diseases (Newsom *et al.,* 2005), paying attention to the changes in health status, and avoiding addictions and behaviors that could pose health risks (Michaelidou & Hassan, 2008).

Some studies reveal that there might be a relationship between food habits and health consciousness levels of people. Some of the studies associating nutrition to health consciousness include the links between organic food consumption and health consciousness (Magnusson *et al.*, 2003).

The health consciousness scale included in the study was formed by combining the addictive habits, nutrition, and health quality variables in addition to the health consciousness scales of the previous studies (Kraft & Goodell, 1993; Newsom *et al.*, 2005).

The existence of environmental problems, which are directly connected to health, causes both environmental consciousness and health consciousness to be considered together in some studies. In addition to the above-mentioned consciousness levels related to organic product consumption, the level of environmental consciousness was also covered within the research variables. The scales for measuring the consumers' environmental consciousness were used based on the study of Canan & Ecevit (2005) who have previously tested Roberts' (1996) work on the basis of the consciousness of the damage done to the environment, product preferences in terms of the environment, and behaviors for preserving the environment.

Among those who prefer meat and meat products for a healthy and balanced diet, the number of those who consider it important that the animals should be kept in good conditions and then slaughtered by humane methods is increasing day by day. The living conditions of animals, meeting their nutrition and water requirements, animal care, meeting their requirements such as light, space, heat, air appropriately, and not torturing them during the stages of raising and slaughtering has now become important not only for breeder standards but also for many consumers (Magnusson, 2003; Michaelidou & Hassan, 2008). Therefore, animal welfare consciousness was also added to the study as a dimension, in order that the

relationship between the consciousness of animal welfare and organic meat consumption was to be understood.

MATERIAL AND METHODS

In the scope of the research, the questionnaire created online was sent to the consumers, who buy organic chicken meat and those who do not, through emails, Facebook groups, websites selling organic chicken meat.The questionnaire was applied in September and October 2018. Data was analyzed employing SPSS version 23.

The data obtained was evaluated in terms of missing values and outliers, the analysis was carried out with a total of 506 respondents, 239 respondents who bought organic chicken meat and 267 who did not buy organic chicken meat. 61.5% of those who buy organic chicken meat are women, 50.8% are in the age group between 41-67, 73.2% are married, 51.2% are university graduates, and 38.1% have household income over 10,000 Turkish Liras (TL). 55.7% of those who do not buy organic chicken meat are women, 40.5% are in the age group between 41-67, 62.9% are married, 52.6% are university graduates, and 23.5% have income between 2,001-4,000 TL.

In the study, logistic regression analysis (LR) was used to determine whether there is a significant relationship between organic chicken meat preference and perception level, consciousness level, and sociodemographic variables.Logistic regression analysis studies the association between a binary dependent variable which is coded as 0 or 1 for two possible categories and a set of independent variables. LR is used to describe data and to explain therelationship between a dependent binary variable and one or more nominal, ordinal, interval or ratio-level independent variables (Tabachnick & Fidell, 2012). Logistic regression function is

$$P(Y=1)=\frac{1}{1+e^{-(\beta_0+\beta_1X_1+\beta_2X_2+\ldots\beta_iX_i)}} \quad (1)$$

where P is the probability that the event Y occurs, Y is binary dependent variable (Y = 1 if event occurs; Y = 0 otherwise), "β"s are the logistic regression coefficients, and"X"s are independent variables.

In the study, if the customers buyorganic chicken meat, Y is equal to 1 (Y=1). Conversely, if the customers do not buy organic chicken meat, Y is equal to 0 (Y=0).

The perception level was measured in terms of product, price and benefit perception, and consciousness level in terms of the environment, health and animal welfare. The 5-point Likert scale (1. Strongly Disagree, 2. Disagree, 3. Undecided, 4. Agree, 5. Strongly Agree) was used and product perception was measured by 11 questions, price perception by 5 questions, and benefit perception by 12 questions. Environmental consciousness was measured by 23 questions, health consciousness by 17, and animal welfare by 15 questions. Sociodemographic factors were measured by "gender", "marital status", "education level", "age", and "income level".

Factor analysis was used for data reduction to identify a smaller number of the factors underlying a large number of observed variables. Factor analysis produces factor loadings, which are the Pearson correlation coefficient of an original variable or item with a given identified factor. Factor loadings of 0.30 are significant for sample sizes of 350 or greater. According to factor analysis results, it was found that all factor loadings surpassed the value of 0.30. Cronbach's alpha was used to check the reliability of each factor. It is a measure used to assess the reliability of a set of scales or test items.As a general rule of thumb Cronbach's alpha should exceed 0.70 (Hair *et al.*, 2014). Cronbach's alpha coefficients were obtained for all subscales of perception level and consciousness level ranging from 0.84 to 0.91.

When factor scores were named in consequence of the factor analysis with varimax rotation, it was observed that the product perception concentrated in one factor as "organic chicken meat naturalness perception", the price perception in one factor as "organic chicken meat value quality perception", and the benefit perception in one factor as "organic chicken meat health perception". It was identified that the environmental consciousness concentrated in 4 factors as "environmentally friendly behavior", "environmental awareness", "saving and recycling", and "electricity usage", health consciousness in 2 factors as "health awareness" and "health control awareness", and the consciousness of animal welfare in two factors as "treating animals appropriately" and "improving animals' life quality". In brief, a total of 11 factor scores (X1-X11) and sociodemographic variables (X12-X16) were obtained as a result of the validity analysis defined above the independent variables of the study (Table 1).

Table 1 – Variables of the logistic regression analysis.

Perception level	
Productperception	organic chicken meat naturalness credibility perception (X1)
Priceperception	organic chicken meat value-quality perception (X2)
Benefit perception	organic chicken meat health perception (X3)
Consciousness level	
Environmental consciousness	environmentally friendly behavior (X4)
	environmental awareness (X5)
	saving and recycling (X6)
	electricity usage (X7)
Health consciousness	health awareness (X8) (health maintenance behaviors)
	health control awareness (X9)
Consciousness of animal welfare	treating animals appropriately (X10)
	animals' life quality (X11)
Sociodemographic factors	
	Gender (X12)
	Marital status (X13)
	Education level (X14)
	Age (X15)
	Income level (X16)

RESULTS AND DISCUSSION

The forward selection method was chosen to overcome the multicollinearity issue of highly correlated variables in logistic regression analysis.Forward selection is a type of stepwise regression which begins with an empty model and adds in variables one by one. In each forward step, the variable that gives the single best improvement to the model is added. As a result of the analysis, SPSS built a model in 5 steps. The result of the last step can be seen in Table 2. It was identified that the variables in Table 2 were effective in the differentiation between the consumers who bought organic chicken meat and those who did not.

In the logistic regression analysis (LR), Wald statistics are used in the test of the coefficients; when Table 2 is examined, it is seen that X1 (p=.001), X2 (p=.000), X9 (p=.012), X11 (p=.000), and X16 (p=.000) added significantly to the model (p<0.05). The possibility of consuming organic chicken meat [P(Y=1)] is calculated as follows with the data obtained from Table 2.

Table 2 – Variables in the equation.

		B	S.E.	Wald	Df	Sig.	Exp(B)
Step 5	Constant	-1.923	0.293	43.192	1	0.000	0.146
	X1	0.385	0.115	11.166	1	0.001	1.470
	X2	0.416	0.114	13.229	1	0.000	1.516
	X9	0.287	0.114	6.352	1	0.012	1.333
	X11	0.548	0.137	15.921	1	0.000	1.729
	X16	0.411	0.066	39.23	1	0.000	1.508

**B, estimated coefficient; S.E., standard error; Wald, the ratio of B to S.E., squared; df, degrees of freedom; Sig., the level of statistical significance (p value); Exp(B), odds ratio.

$$P(Y=1) = 1/(1+e^{\uparrow(-(-1.923+0.385x1+0.416x2+0.287x9+0.548x11+0.411x16)}) \quad (2)$$

In the table, the odds ratio greater than 1 (Exp(B)) indicates that the probability of purchasing organic chicken meat [P(Y=1)] increases when the related independent variable increases, while the odds ratio smaller than 1 indicates that the probability of purchasing organic chicken meat is lower when the related independent variable increases. If1 is subtracted from the odds ratio and then multiplied by 100 [(odds ratio-1) x100], the values above 100 indicate an increase, while the values below that indicate a decrease.

For example, when 1 is subtracted from the odds ratio of the variable X11 and then multiplied by 100, the result is (1.729-1)*100 =72.9%. In short,if X11 increases by one unit, the consumer's probability of purchasing organic chicken meatincreases by a rate of 72.9%. One unit increase in the variable X2 increases the probability of purchasing organic chicken meat by the rate of 51.6% [(1.516-1)*100= 51.6%].

When the same procedure was also applied to the other variables, it was determined that, according to the order of importance, one unit increase in X16, X1, X9 would increase the probability of purchasing organic chicken meat by the rates of 50.8%, 47%, 33.3%, respectively.

In consequence of the analysis, the goodness of fit was assessed by the Hosmer-Leme show test. This statistical test measures the correspondence of the actual and predicted values of the dependent variable. In this case, better model fit is indicated by a smaller difference in the observed and predicted classification (Hair *et al.,* 2014).The null hypothesis (H_0) for the Hosmer and Lemeshow test is that the data fit the model. In consequence of the test, H_0 was accepted, and it was determined that the obtained model was compatible with the datasetat the 0.05 level of significance (p=0.102).

It is very common to use the binomial logistic regression model to determinewhether cases can be correctly predicted from the independent variables. The classification table is a method to evaluate the predictive accuracy of the logistic regression model. The observed values for the dependent outcome and the predicted values (with the cut-off value of 0.500) are cross-classified in this table (Park, 2013). Table 3 has a subscript which states, "The cut off value is 0.500". This means that if the probability of a case being classified into the "yes" category is greater than 0.500, then that particular case is classified into the "yes" category. Otherwise, the case is classified as in the "no" category

When the classification Table 3 of the model is examined,

Table 3 – Classification table[a]

Observed			Predicted		
			Organic chicken meat buying status		
			No	Yes	Percentage correct
	Organic chicken meat buying status	No	194	73	72.7
		Yes	76	163	68.2
	Overall percentage				70.6

[a]The cut value is 0.500

194 of 267 individuals who did not consume organic chicken meat were correctly estimated through the model. It is observed that 72.7% of the consumers and 68.2% of those who consume are correctly estimated. The model correctly estimated the chicken meat purchase preference at the rate of 70.6%.

In the study, logistic regression analysis (LR) was used to determine whether there is a significant relationship between the organic chicken meat preference and the perception level (in terms of product, price, benefit perception), consciousness level (in terms of health, environment, and animal welfare), and sociodemographic variables.As a result of the analysis, it has been determined that the variables of "improving animal life quality", "organic chicken meat value-quality perception", "health control awareness", "organic chicken meat naturalness perception", and "income level" had influence over the purchasing preference.

The first factor that is the highest influential factor on organic chicken meat consumption was identified as "the consciousness of improving animals' life quality (X11)" within the scope of the consciousness of animal welfare.In some of the previous studies in which the causes of organic food consumption were determined, the consciousness of animal welfare, though it affected the consumption decision, was not identified as the main determinant (Harper & Makatouni, 2002; McEachern & Willock, 2004). In this study, the consciousness of animal welfare was found to be influential on organic chicken meat consumption. The obtained resultarises from the assumption that the consumers think that the meat of the animals which are grown according to animal welfare are healthy. This occurs because the consciousnessof animal welfare is not sufficiently developed in Turkey and the concept of animal welfare is perceived as a concept implying healthy and qualified animal production (İzmirli, 2009; Şeker, *et al.,* 2011). Where the reason for preferring the meat of animals that were reared in accordance with "animal welfare" should be determined by attaching importance to animal rights and environment, and wanting to support smaller suppliers (Michaelidou & Hassan, 2008; Napolitano *et al.,* 2010; Toma *et al.,* 2011). In this study, the variable "consciousness of improving animals'life quality (X11)" was identified as the variable with the highest effect on the purchase preference [EXP(B)=1.729)].

As the second factor, "organic chicken meat value-quality perception (X2)" was found to be effective [EXP(B)=1.516)]. The studies which surveyed the premium prices that consumers accept to give for organic products show that the value of quality reflects on the price (Jolly, 1991). In their study, Sarıkaya (2007) points out that according to consumers, the price is not a priority in terms of marketing organic products, indicating that consumers accept that organic products are expensive and they are ready to pay more for organic products than alternative ones. The premium price that consumers want to pay for organic chicken meat varies depending on the country, product, and time (Ayhan, 2014). In Turkey, a limited number of studies have been carried out on this subject.It was reported that the consumers are willing to pay 30% more for organic chicken meat in the city of Aydın, 6-10% in the city of Samsun, and 271% more in Kuşadası (Armağan & Özdoğan, 2005; Gündüz & Bayramoğlu, 2011; Ayhan, 2014). On the other hand,

the high price of organic chicken meat is stated as one of the factors that negatively affect the purchase decision (Jolly, 1991; Michaelidou & Hassan, 2008). In Turkey, the sustainability of organic livestock largely depends on reducing the product price to a level that large masses can afford it.

The third variable (X16) influencing purchasing preference is the consumer's level of income [EXP(B)=1.508)]. There are numerous researches examining the impact of demographic characteristics of consumers on organic food purchasing decisions. When the organic food buyers and nonbuyers were compared in terms of their demographic characteristics, the factors most correlated with the organic product purchasing attitude were found to be educational background and income level (Magnusson *et al.,* 2001; O'Donovan & McCarthy, 2002; Yiridoe *et al.,* 2005; Armağan & Özdoğan, 2005; Gündüz & Bayramoğlu, 2011). In some studies, it was stated that the income level has no significant effect on the organic food purchasing decision (Karabaş, 2012; Van Loo *et al.,* 2010). In our study, it was determined that only the income level (X16) among the sociodemographic characteristics had an effect on the organic meat buying behavior and it was identified that the income level increased the purchasing probability by the rate of 50.8%.

The fourth factor is the naturalness perception of organic chicken meat (X1). Since organic product consumers are aware of health consciousness, they want to buy natural and healthy products (Verbeke, 2004). The most important reason why consumers in many countries choose organic food is that they care about the quality, nutritive value, and safety (O'Donovan & Mc Carty, 2002; Michaelidou & Hassan, 2008). In the study conducted by Karabaş (2012) in the city of Samsun, the effect size of the feature of being natural and unadulterated, which is one of the factors that enable consumers to prefer organic food, on the consumption preferences was identified as 66.4%. In our study, it was determined that the variable of "organic chicken meat naturalness credibility perception (X1)" increased the probability of the purchasing preference by 47% [EXP(B)=1.470)].

The fifth factor is health control awareness (X9). In most of the studies conducted, it was reported that health consciousness was the main factor in buying organic food (Jolly, 1991; O'Donovan & McCarthy, 2002; Harper & Makatouni, 2002; Magnusson *et al.*, 2003). Although the health benefits are seen as the main motivation in most of the studies, it is stated in some studies that it is not very important and the health benefit has the lowest effect in the order of importance in purchasing organic food (Michaelidou & Hassan, 2008). In our study as well, it was found that when the variables that had an impact on the purchase preference were ranked according to their importance, "health control awareness (X9)" had less influence on preference than other variables [EXP(B)=1.333)].

CONCLUSION

Increasing organic chicken meat production and consumption in Turkey is important in terms of human health, animal welfare, and protection of the environment. Determining the factors affecting the purchasing decision will help in directing organic chicken breeders and sellers; and it will be instrumental in facilitating sales of organic food marketers to segment the market by taking consumer trends into account. As a result of the analysis, it has been determined that the variables of "improving animal life quality", "organic chicken meat value-quality perception", "health control awareness", "organic chicken meat naturalness perception", and "income level" had influence over purchasing preference. Therefore, in organic chicken meat marketing, the issues that need to be emphasized in terms of awareness raising of consumers are that organic chicken meats are natural,reliable, healthy and suitable for animal welfare.Furthermore, to increase the consumption of organic chicken meat, measures should be taken by the government to reduce costs and encourage production in addition to raising consumer awareness about organic food.

REFERENCES

Armagan G, Özdogan M. Consumption patterns of ecological egg and chicken meat and determining the consumer preferences. Journal of Animal Production 2005;46:14-21.

Ayhan RM. Consumer willingness to pay for organic chicken and milk in Kuşadası, Turkey

[thesis]. Ankara (TUR): Middle East Technical University; 2014.

Canan AY, Ecevit Z. Environmentally conscious consumers. Akdeniz University Faculty of Economics and Administrative Sciences Faculty Journal 2005;5:238-263.

De Magistris T, Gracia A. The decision to buy organic food products in Southern Italy. British Food Journal 2008;110:929-947.

Fotopoulos C, Krystallis, A. Purchasing motives and profile of the Greek organic consumer:a countrywide survey. British Food Journal 2002;104:730-765.

Gündüz O, Bayramoglu Z. Consumers' willingness to pay for organic chicken meat in Samsun province of Turkey. Journal of Animal and Veterinary Advances 2011;10:334-340.

Hair JF, Anderson RE, Tatham RL, Black WC. Multivariate data analysis. 7th ed. Londres: Pearson Education; 2014.

Harper GC, Makatouni A. Consumer perception of organic food production and farm animal welfare. British Food Journal 2002;104:287-299.

Hughner RS, McDonagh P, Prothero A, Shultz CJ, Stanton J. Who are organic food consumers? A compilation and review of why people purchase organic food. Journal of Consumer Behaviour:An International Research Review 2007;6:94-110.

İzmirli SA. Survey on animal welfare attitudes of veterinary surgeries, veterinary students, animal owners and society in Turkey[thesis]. Konya (TUR): Selçuk University; 2009.

Jolly D. Differences between buyers and nonbuyers of organic produce and willingness to pay organic price premium. Journal of Agribusiness 1991;9:97–111.

Karabas S, Gürler AZ. Predicting of the factors affecting consumer behavior the choice of organic products by logit regression analysis. Adıyaman Üniversitesi Sosyal Bilimler Enstitüsü Dergisi 2012;3:60-64.

Kraft FB, Goodell PW. Identifying the health-conscious consumer. Marketing Health Services 1993;13:18.

Lee HJ, Yun ZS. Consumers' perceptions of organic food attributes and cognitive and affective attitudes as determinants of their purchase intentions toward organic food. Food Quality and Preference 2015;39:259-267.

O'Donovan P, McCarthy M. Irish consumer preference for organic meat. British Food Journal 2002;104:353–370.

Magnusson MK, Arvola A, Koivisto Hursti UK, Aberg L, Sjödén PO. Attitudes towards organicfoods among Swedish consumers. British Food Journal 2001;103:209–226.

Magnusson MK, Arvola A, Hursti UKK, Åberg L,Sjödén PO. Choice of organic foods is related to perceived consequences for human health and to environmentally friendly behavior. Appetite 2003;40:109-117.

McEachern MG,Willock J. Producers and consumers of organic meat:A focus on attitudes and motivations. British Food Journal 2004;106:534-552.

Michaelidou N, Hassan LM. The role of health consciousness, food safety concern and ethical identity on attitudes and intentions towards organic food. International Journal of Consumer Studies 2008;32:163-170.

Napolitano F, Girolami A, Braghieri A. Consumer liking and willingness to pay for high welfare animal-based products. Trends in Food Science and Technology 2010;21:537-543.

Newsom JT, McFarland BH, Kaplan MS, Huguet N, Zani B. The health consciousness myth:implications of the near independence of major health behaviors in the North American population. Social Science and Medicine 2005;60:433-437.

Park, H. An introduction to logistic regression: from basic concepts to interpretation with particular attention to nursing domain. Journal of Korean Academy of Nursing 2013;43(2):154-164.

Roberts JA. Green consumers in the 1990s: profile and implications for advertising. Journal of Business Research 1996;36:217-231.

Sarıkaya NA. A field study on factors and attitudes affecting organic product consumption. Kocaeli Üniversitesi Sosyal Bilimler Enstitüsü Dergisi 2007;14:110-125.

Şeker İ, Özen A, Güler H, Şeker P, Özden İ. Red meat consumption behavior in elazığ and consumers' opinion in animal welfare. Journal of the Faculty of Veterinary Medicine, Kafkas University 2011;17:543-550.

Tabachnick BG, Fidell LS. Using multivariate statistics. Londres: Pearson Education; 2012. v.6.

Toma L, McVittie A, Hubbard C,Stott WA. Structural equation model of the factors ınfluencing British consumers' behaviour toward animal welfare. Journal of Food Products Marketing 2011;17:261–278.

Ustaahmetoğlu E, Toklul T. A survey on the effect of attitude, health consciousness and food safety on organic food purchase intention. AİBÜ-İİBF The International Journal of Economic and Social Research 2015;11:197-211.

Van Loo E, CaputoV, Nayga Jr RM, Meullenet JF, Crandall PG, Ricke SC. Effect of organic poultry purchase frequency on consumer attitudes toward organic poultry meat. Journal of Food Science 2010;75:384-397.

Verbeke W, VackierI. Profile and effects of consumer involvement in fresh meat. Meat Science 2004;67:159-168.

Yiridoe EK, Bonti-Ankomah S, Martin R. Comparison of consumer perceptions and preference toward organic versus conventionally produced foods:A review and update of the literature. Renewable Agriculture and Food Systems 2005;20:193–205.