

Consumer attitudes and behavior towards organic products: Evidence from the Lithuanian market*

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Abstract

Purpose: The paper analyzes consumer attitudes and related behavior towards organic products and determines the factors affecting consumer attitudes towards organic products and Lithuanian consumers' choices. **Methodology:** Previous scientific works are analyzed and generalized in order to provide scientific substantiation for the research. A questionnaire survey is provided in order to approve the theoretically established factors in the Lithuanian market of organic products. The questionnaire is comprised of 23 statements representing eight latent variables: six possible reasons for the choice of an organic product (health issues; environmental concerns; food safety and quality; economic reasons; social reasons; psychological reasons) and two possible outcomes (intentions to choose organic products; actual organic product purchases). The survey results are based on the answers of 269 respondents representing the population of the four biggest cities in Lithuania. **Findings:** The results indicate the structural differences between theory and its application for the Lithuanian market; therefore, the factors are reestablished. The research results show the high level of Lithuanian consumers' environmental consciousness; also, a willingness to share information relating to environmental issues with friends; and active engagement in sharing information about environmentally related issues. However, consumer awareness of the relationship between organic products, and health and quality issues is lower, indicating the necessity to be managed. Also, consumers do not express high agreement that organic products have to be more expensive; they do not intend to pay a higher price for them. Research results show that Lithuanian consumers do not choose organic products often and they also do not express conformable behavior (resulting from organic product purchases).

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Implications for theory and practice: *The research results enable the ability to compose a clear framework of Lithuanian consumer attitudes and behavior towards organic products. The established factors affecting consumer attitudes and behavior can be further explored and modeled according to different market situations.*

Originality and value: *Based on the results, companies can elaborate on effective marketing strategies fostering consumer attitudes and behavior in a particular way.*

Keywords: *consumer attitudes, consumer behavior, consumer choice, ecologic consumption, environment-friendly, environmentally-friendly, organic products*

INTRODUCTION

According to statistics presented by The World Organic Agriculture Statistics and Emerging Trends (2018), the consumption of organic produce is growing impressively; global sales of organic products in 2016 were almost 90 billion US dollars. The European market for organic products in 2016 was 35 billion US dollars. Ireland and France saw more than 20 percent growth in the consumption of organic produce, while in Switzerland, it grew by 8.4 percent. Sales of organic produce became common in Western Europe with Germany having organic produce sales of 10.4 billion US dollars and France 7.8 billion US dollars. The largest markets among countries in Europe were in Italy, the United Kingdom, Switzerland, and Sweden. Central and Eastern European countries such as Poland, Hungary and Lithuania emerged on the map of organic products as producers, even having market shares below 1 percent.

A growing organic produce market in the world shows that contemporary consumers are becoming aware of environmental problems and their solutions take shape in environmental protection or sustainable consumption; moreover, the modern consumer's shopping cart often 'faces' some organic product. A large body of studies has investigated consumer behavior in terms of organic produce purchases. Ventura-Lucas et al. (2008) and Sumathi and Gabriel (2017) argue that consumer attitudes towards 'organic' are often positive, showing that they believe that the organic food products are healthier, tastier, and provide higher quality than conventional foods. According to Sumathi and Gabriel (2017), the intention of Malaysian consumers regarding organic food purchases is highly impacted by the respondent's attitudes towards safety, health-related issues, environmental forces, and animal welfare. A study by Irianto (2015) reveals that human health and environmental consciousness act as the major factors encouraging consumers to choose organic production.

As the consumption of organic produce is growing, adequate decisions have to be taken in order to fulfill consumer priorities. Wang et al. (2013) argue that managing consumption is a principle action that has to be taken

in order to achieve sustainable development. Ecologically conscious behavior on consumption might encourage businesses to acquire a philosophy of green marketing in their activities. In addition, Hughner et al. (2007) argue that organic and conventional food-based industries have to monitor and appraise consumer motivators, perception, and attitudes towards organic products during the process of consumption. Such understanding will be beneficial in the long-term, as a result of higher quality and better meet consumer expectations. However, Khare (2014) emphasizes that contemporary consumers still misunderstand conceptions like 'recyclable,' 'earth-friendly,' and 'organic'; therefore, meeting consumer expectations related to the environment and attitudes towards organic consumption leads to the application of sustainable marketing strategies.

Despite the worldwide trend for sustainable consumption and ecologically conscious consumer behavior, differences in its essence are obvious among countries or regions; e.g. Malaysian consumers are health conscious and driven by perceived value (Shaharudin et al., 2010), while Tunisians are price sensitive in regard to organic product purchases (Ghali-Zinoubi & Toukabri, 2019). Research conducted by Spanish (Fraj & Martinez, 2006a, 2006b) and Belgian and Polish authors (Roosen & De Pelsmacker, 2000) detected that consumers' positive attitudes to environmentally-friendly products had no significant effect on their behavior. Bachnik and Szumniak-Samolej (2017) provided an example of the difference in consumer attitudes towards foods: some people saved time by consuming fast food; others enjoyed the process of slow food preparation. An assumption can be made that factors affecting organic product choices might be different in different countries; therefore, Lithuanian consumers might act in line with a specific tendency. Thus, this research seeks to contribute to the body of knowledge on organic production, sustainable consumption, and environmental consciousness by answering the following question: What are Lithuanian consumer attitudes and behavior regarding organic produce? The aim of the research is to determine Lithuanian consumer attitudes and behavior regarding organic products.

In order to reach the purpose raised for the research, the following methods were applied: a theoretical analysis of the essence of sustainable consumption and consumer behavior regarding organic products was based on the analysis of the scientific literature and related scientific research; an empirical investigation was provided by applying a quantitative survey, limited to the territory of the Republic of Lithuania. Looking to provide the research results clearly, the article is organized as follows: a conceptual framework for the research in the form of a theoretical analysis is provided in the Literature review; the Research methods section provides an explanation of the research

methodology; further, an analysis of the research results is provided. The discussion and conclusions are provided at the end of the article.

LITERATURE REVIEW

The essence of sustainable consumption

Liu et al. (2012) emphasize that a substantial part of sustainable consumption belongs to green purchases; such 'green' behavior diminishes the negative effect of humanity on the environment. Therefore, consumers are increasingly starting to consider environmental problems, engaging in energy-reducing consumption, using environmentally-friendly products, etc. Sustainable behavior expressed by consumers can be envisioned in the consumption of products and services fulfilling their basic needs and also bringing a higher quality of life, whilst at the same time reducing the use of natural resources, avoiding toxic materials, diminishing waste emissions and pollutants. In such a way, future generations' needs are being respected (Norwegian Ministry of the Environment, 1994). Therefore, consumers become increasingly aware of the effects of consumption on the natural environment and the welfare of humanity in the future (Kostadinova, 2016). Research by Hueber (1991) shows that over 70 percent of Americans support the protection of the environment; moreover, 49 percent of them would refuse to purchase products that could be environmentally unsafe or harmful.

Despite the sustainable consumption supporting results, the empirical evidence suggests that a strong consumer willingness to behave sustainably does not always result in any actual behavior (Carrigan & Attalla, 2001; Auger & Devinney, 2007). Seeking to understand the reasons for the latter differences, the research of factors affecting consumers' sustainable behavior is performed widely. A variety of scientific research on the latter issues comes with the evidence that social norms, values and individual beliefs are important factors affecting consumer choice of sustainable consumption (Allcott, 2011; Peattie, 2010; Thøgersen, 1999). Caruana (2007) emphasizes that during the choice process, in line with the price and quality of the products, consumers are guided by the norms, acquired values, and beliefs they possess. Another research provided by Poortinga, Steg, and Vlek (2004), reported that attitudes towards environmental products and related behavior resulted from consumer's values. Also, Stern, Dietz, and Guagnano (1995) argued that social values were a major factor in influencing different levels of sustainable consumption. Research provided by Şener and Hazer (2007), with a women sample in Turkey, provided evidence that the values had an

impact on environmental behavior. Consumers' perception of their personal influence on environmental changes also resulted in their environmental behavior (Roberts, 1996). On the other hand, research by Baldassare and Katz (1992) and SGuin, Pelletier, and Hunsley (1998) showed that the perception of a possible threat significantly influenced consumer environmental behavior in a positive way. Finally, it could be argued that social norms, values and individual beliefs have to be considered as important factors in expressing actual sustainable behaviors and sustainable consumption.

The terms of consumer 'ecological consciousness' or 'ecological awareness' express consumers' willingness to understand issues related to the 'natural world' with respect (Panov, 2013). These examples of ecologically conscious behavior could serve such behaviors as saving energy and resources; choice of non-toxic materials; or endeavors for waste reduction. Also, ecological shopping has to be considered as an indicator of this type of behavior (Dubihlela & Ngxukumeshe, 2016). However, being quite novel in the scientific literature, the issue requires theoretical as well as methodological establishment in terms of causes (antecedents) and outcomes in order to be properly managed.

Consumer behavior regarding organic products

A wide body of research regarding consumer behavior towards organic produce and its purchases can be found in the scientific literature. Ajzen and Fishbein (1980), in their study, mention that 'consumers with a positive attitude' towards organic foods might not necessarily show an intention to buy them; also, consumers do not agree to pay a premium price for organic food products (Grunert & Juhl, 1995). On the other hand, some research regarding green consumers tries to explore the contributing motives in order to predict consumer decisions and intentions to purchase organic products. The most broadly analyzed motives and factors affecting consumer purchases of organic products are health (Ghali-Zinoubi & Toukabri, 2019), environmental issues (Kim & Choi, 2005; Mei, Ling, & Piew, 2012; Prakash, Singh, & Yadav, 2018), produce safety, and its quality (Ghali-Zinoubi & Toukabri, 2019).

Health issues are the main motive in some researchers' works. Sumathi and Gabrial (2017) argue that consumers perceive organic products as environmentally-friendly food products; such food products are fresh, hygienic, and healthy. For the past few years, people have become more health-conscious and started approaching dietitians, nutritionists, gyms, etc. The increased concern to maintain a healthy lifestyle has also shaped consumer attitudes towards food; therefore, food without unsafe additives, preservatives, flavor and coloring has become popular (Shaharudin et al., 2010). According to a newly forming perception, hygienic and nutritional food gave good results for human

health; therefore, people started buying organic food products. Accordingly, an organic food product was established in consumer consciousness as a nutritional food that kept the human body healthy.

Other researchers (Rimal, Moon, & Balasubramanian, 2005) argued that consumers perceived organic products as having fewer pesticides, herbicides, and other substances harmful to the human body. A demand for organic products, in particular, evolved from the need for safety and health. In the consumer consciousness, each product could be characterized by a set of different attributes. When choosing a product, some of its features are more important than others; moreover, the characteristics of different consumer groups may vary. Therefore, while marketing a product and communicating with consumers, the most important features of that product have to be emphasized.

The main motives for consuming organic products such as the health issue, were also provided in the work of Tsakiridou et al. (2008). The researchers argued that Greek consumers were interested in information about the products' nutritional value; moreover, the demand for chemical residue-free products was increasing. On the other hand, Croatian consumers understood organic food products as being healthy, having a better quality, and being tastier than conventional foods. But despite that, when analyzing the economic side, such products were related to more expensive produce and were perceived as having a worse appearance (Radman, 2005). However, the extended use of antibiotics and hormones in the production processes was understood as having a negative impact on health, which could be avoided or minimized with the help of organic products. Analyzing consumer attitudes towards organic food, Stolz et al. (2011) suggested measuring health concerns by assessing consumer attitudes regarding: artificial flavors and additives; pesticide residues in fruits and vegetables; genetically modified food; and produce of animals kept outside in comparison to those kept indoors.

Environmental concerns are aggregated into a second important factor for many consumers. For instance, Bamberg (2003) showed that the level of environmental concern strongly influenced human behavior in terms of intentions to recycle and save energy, consumers' choice to purchase environmentally-friendly products, or even in the way people travel.

A variety of scientific research (e.g., Roberts, 1996; Chan & Lau, 2000) has shown the links between environmental concern and some ecologically conscious behaviors. The research provided by Mei, Ling, and Piew (2012) found that environmental attitude was a significant factor affecting green purchase intentions. Analyzing the issue, Kim and Choi (2005) highlighted that there was a higher possibility that more environmentally concerned consumers would buy environmentally-friendly products when compared

to less concerned people in this respect. The results of their research showed that: *'humans must live in harmony with nature in order to survive'* and respondents were *'extremely worried about the state of the world's environment and what it will mean for their future.'*

However, other studies showed that environmental issues were not so important for consumers when buying organic produce. Studies provided in some countries suggested that consumers think that environmental factors need to be addressed by the government. Fraj and Martinez (2006a, 2006b) analyzed lifestyle and values as the factors affecting ecological behavior among Spanish consumers. In a framework of the latter research, environmental patterns and self-fulfillment values were found to determine consumers' ecological behavior. Respondents' environment-related attitudes were found to be positive; however, their impact on purchasing or acquiring only environmentally-friendly products was not supported. Consumers assumed that environmental protection had to be performed by the government and public institutions. Also, Roozen and De Pelsmacker (2000) provided similar evidence from Belgium and Poland. According to the research results, environmental attitudes did not always result in the purchase of green products.

Food safety and quality are also important motives to purchase organic produce in some countries. For example, in Spain, consumers are becoming more interested in information about nutrition, health, and food quality (Gil, Garcia, & Sanchez, 2000). Accordingly, the main factors influencing consumers' choices when buying food products were determined to be as follows: freshness, flavor, appearance, security (whether it was a healthy product, or a reliable manufacturer, or known product brand), and assortment. The research by Stolz et al. (2011) demonstrated that consumers who chose organic products (in comparison with those who chose conventional food) were likely to be more informed regarding food ingredients.

The appearance of the product always indicates the freshness of the product. It can be argued that no user buys a favorite product if they notice that its expiration date has passed. The deadlines for the realization of organic products are much shorter than for conventional ones; therefore, this issue requires special attention. In addition, if a product is stored, transported, or displayed on store shelves for a long period of time, its nutritional qualities can change dramatically.

One of the indicators of food safety is its packaging. Research provided in Poland found the safety of packaging was the most critical socio-economic need for consumers (Cholewa-Wójcik et al., 2019). Analyzing attitudes towards organic foods in Sweden, Magnusson et al. (2001) determined that it was difficult for consumers to distinguish between product labels: some consumers did not distinguish between labels for organic vs. conventional

food. In addition, D'Souza (2004) argued that consumers were often unaware of the requirements for producers of organic food labels. Therefore, the basis for trust in organic products consisted of trust in the system (institutional reconciliations, labeling, and certification of food products), personal confidence (close links between consumers and producers, influence of social ties), and the pragmatic degree of confidence in food (personal experience with natural foods) (Truninger, 2006). Stoltz et al. (2011) suggested assessing consumer concerns about the ingredients by asking if they were checking the list of ingredients, avoiding artificial additives or preservatives.

Numerous research (Kushwah et al., 2019; Stolz et al., 2011) has been conducted worldwide regarding stances and motives of consumer attitudes towards organic products. Aspects of consumer attitudes towards organic products could be determined by a *consumer profile*. Providing the profile of a green consumer, D'Souza et al. (2007) described such a consumer as a young, educated, and wealthy citizen. People with better education could understand the importance of healthy nutrition better. Moreover, higher education resulted in consumer willingness to know more about the organic foods and which ones to choose (Idda, Madau, & Pulina, 2008); also, consumer attitudes towards organic foods was positively influenced by a degree of knowledge of the consumers (Yiridoe, Bonti-Ankomah, & Martin, 2005). Therefore, Stolz et al. (2011) suggested introducing extensive and constant education and information-based programs and communication strategies in order to develop positive organic food-related consumer attitudes. Schwegker and Cornwell (1991) defined the green consumer as one with a high income and higher education diploma. Gracia and de Magistris (2007) found that purchase intention was influenced by 'subjective knowledge,' i.e., a higher level of subjective knowledge resulted in a more positive intention when buying organic foods. In addition, a study by Irianto (2015) showed that different genders' consumer intentions also differed in their buying behavior regarding organic product: females were more conscious towards health and environment than males. The impact of consumers' age on their perception of product packaging's safety was detected in the research provided by Cholewa-Wójcik et al. (2019): consumers aged between 26–35 years and 36–45 years considered the safety of product packaging as being important. The respondents represented mainly urban women samples.

The other factors behind organic food purchases can also be found in the scientific literature. One group of such factors is *economic*. Shaharudin et al. (2010) provided research on Malaysian consumers and found that such factors as health consciousness and perceived value were much more important than food safety concerns or the religious factors. Stolz et al. (2011) detected that respondents who were choosing organic products were

willing to pay price-premiums to obtain organic food and ensure food quality. However, Ghali-Zinoubi and Toukabri (2019) emphasized the expensiveness of organic produce compared with conventional ones; therefore, their research in Tunisia demonstrated the impact of price sensitivity on intentions to buy organic products. Also, Hjelm (2011) argued that the differences in pricing of conventional and organic products had to be minimal. The other group of factors is *social* (e.g., ecologically conscious purchases, ecologically conscious lifestyle, fashion, situational factors). The latter factors were researched by Stern, Dietz, and Guagnano (1995), Panov (2013), and Wang et al. (2013). Research by Mei, Ling, and Piew (2012) found peer pressure as a significant factor in encouraging green purchases. Finally, research on *psychological* factors can also be found in the scientific literature. A study by Curvelo, de Moraes Watanabe, and Alfinito (2019) showed that purchases of organic foods can be affected by emotional value, consumer trust, and 'sensory appeal,' or even preference, as shown by Stolz et al. (2011). Moreover, research provided by Hjelm (2011) demonstrated the impact of consumer's political or ethical views on organic consumption: it could even be affected by consumer's concerns about animal welfare or national origin.

Despite the evidence that consumer motives (e.g., health issues, environmental concerns, concerns about food safety and quality, economic, social, or psychological reasons) for buying organic food might be different, a global trend for organic consumption is evident. Therefore, the determination of consumer attitudes and behavior towards organic products in a particular market leads to a better understanding of the consumer and enables the elaboration of educative and persuasive marketing strategies to affect their behavior.

RESEARCH METHODS

As the theoretical analysis revealed, factors affecting ecologically conscious consumer attitudes and behavior (in our case – organic product choice by consumer) might be different in different markets. Therefore, an assumption was made that Lithuanian consumer attitudes leading to choice behavior could be driven by a different set of factors. In order to determine the latter factors and their structure, a questionnaire survey was provided.

The questionnaire was composed of 23 manifest variables representing eight latent variables: six possible reasons for organic product choices (health issues; environmental concerns; food safety and quality; economic reasons; social reasons; psychological reasons) and two possible outcomes (intentions to choose organic products; actual organic product purchases). Statements

in the questionnaire were presented in a random order, without connecting them into item-related groups.

All the variables were established after a detailed analysis of the questionnaires used in the analyzed literature. Finally, the questionnaires applied by Kim and Choi (2005), Mei, Ling, and Piew (2012), and Stolz et al. (2011) were chosen and combined for further research. As all the analyzed questionnaires were provided in English, they had to be translated into the mother tongue language of the respondents (i.e., Lithuanian). Therefore, to avoid possible errors of translation, a translation method suggested by Tsang, Royse & Terkawi (2017) was applied: (1) a translation committee was formed out of two academic professionals in the field and one bilingual language specialist; (2) the composed questionnaire was translated into Lithuanian and the three translations were compared and discussed to establish the Lithuanian working version; (3) the approved version of the Lithuanian questionnaire was translated backwards into English in order to check that the statements didn't lose their meaning. After all these procedures, the pre-final version of the questionnaire was set. In the elaborated questionnaire, respondents had to evaluate the provided statements (manifest variables) on a 10-point Likert scale ('1' meant absolute disagreement with a statement; '10' meant absolute agreement with a statement). Before starting the survey, a pilot questionnaire was given to university students for preliminary testing to avoid any possible confusion about the statements and get suggestions for possible improvements of them. After all the necessary procedures, the final version was established. A convenience sampling method was applied and the sample was composed of 300 randomly selected mature respondents living in the four biggest cities of Lithuania (Vilnius (100 respondents), Kaunas (75 respondents), Klaipėda (70 respondents), and Šiauliai (55 respondents)) by asking people face-to-face to complete the questionnaire at the information desk in shopping malls; 269 questionnaires (response rate almost 90 percent) were returned filled without errors (i.e., missing values or dual evaluation of the statement). Respondents were participating in the survey voluntarily, without extra incentives. The sample size was considered as sufficient, as the confidence interval was six, and the confidence level was 95 percent. The research period accounted for two weeks in May of 2018. For the analysis of the results, the IBM SPSS Statistics V.20 software package was chosen.

RESULTS

To proceed with the data analysis, a factor analysis was provided. The data was checked and considered as being suitable to perform a factor analysis

on (all the assumptions were met). Based on Sarstedt and Mooi's (2019) recommendation, Kaiser Meyer Olkin's (KMO) measure of sampling adequacy and Bartlett's test of sphericity were calculated: the KMO measure obtained was mediocre (0.657 is higher than 0.5) and the Bartlett criterion was $p < 0$. Therefore, the data was found to be reliable and suitable for factor analysis.

In order to obtain clear factors for further analysis, an exploratory factor analysis (as the most common factor analysis used by researchers to determine the structure of the phenomenon) was performed. To determine the factors' variation in the sample, initial eigenvalues were calculated and rotated. The factors having eigenvalues higher than 1 were considered as suitable for further analysis (Young and Pearce (2013) emphasize that Kaiser's criterion, which suggests retaining all factors that have an eigenvalue above 1, is often used to determine the number of factors to retain). The factor eigenvalues and their rotations are provided in Table 1.

Table 1. Total variance explained

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.141	26.702	26.702	3.063	13.318	13.318
2	2.653	11.535	38.237	2.494	10.844	24.162
3	2.013	8.753	46.990	2.443	10.620	34.782
4	1.596	6.937	53.927	2.258	9.816	44.598
5	1.329	5.778	59.705	1.945	8.458	53.056
6	1.197	5.202	64.907	1.939	8.430	61.485
7	1.054	4.581	69.488	1.841	8.002	69.488
8	.958	4.164	73.652			
9	.868	3.774	77.425			
10	.766	3.330	80.755			
11	.729	3.170	83.925			
12	.606	2.635	86.560			
13	.492	2.138	88.698			
14	.448	1.950	90.648			
15	.399	1.734	92.382			
16	.368	1.598	93.980			
17	.352	1.531	95.511			
18	.247	1.075	96.587			
19	.226	.981	97.568			
20	.205	.892	98.460			
21	.137	.594	99.054			
22	.126	.548	99.602			
23	.091	.398	100.000			

The data provided in Table 1 showed that after rotation seven factors explained almost 70 percent of the variance: from 13.318 to 8.002. The

communalities of all variables obtained were higher than 0.2, in the range of 0.533 to 0.831. After component rotation (based on Varimax (according to Gorsuch’s (1983) recommendation) with Kaiser Normalization (see Annex), all 23 components were re-attached to factors. Out of eight theoretically established factors, only two – ‘economic reasons’ and ‘intentions to choose organic product’ – remained unchanged. The primarily established factors ‘health issues’ and ‘food safety and quality’ were merged into a factor ‘search for a healthy quality’; the initially established factor ‘environmental concerns’ had reduced in the number of components; however, factors of ‘social reasons’ and ‘psychological reasons’ were redesigned. The factor ‘psychological reasons’ was changed and renamed ‘active engagement.’ Also, a component was added to the factor ‘actual organic product purchases’. All the structural changes are demonstrated in Table 2.

Table 2. Final factors

Statement	Initial factor	Final factor	Name	
Pesticide residues in fruit and vegetables are harmful to human health	Health issues	Search for a healthy quality	HQ1	
Genetically modified food is a danger to human health			HQ2	
Artificial flavors and additives in food are harmful to human health			HQ3	
Produce of animals kept outside (at pasture) are healthier than of those kept indoors			HQ4	
I only buy food produced without artificial additives			HQ5	
I generally do not buy products that include preservatives	Food safety and quality		HQ6	
When I buy products, I often check the list of ingredients			HQ7	
It is very important to raise environmental awareness among people	Environmental concerns	Active engagement	ENG2	
I strongly agree that more environmental protection work is needed in Lithuania			ENV2	
Humans must live in harmony with nature in order to survive		Environmental concerns		ENV3
I am extremely worried about the state of the world’s environment and what it will mean for my future				ENV1
It is essential to promote green living in society		Social reasons	Social behavior	SOC3
I learn so much about environmental products from my friends	SOC2			
I often share information regarding environmental products with my friends	SOC1			

Statement	Initial factor	Final factor	Name
I am willing to pay considerably higher prices for food which has considerably higher quality standards	Economic reasons	Economic reasons	ECO1
I think that organic products have to be expensive			ECO2
I love discussions about nutrition and health	Psychological reasons	Active engagement	ENG1
I prefer to buy organic food			ACT2
I have switched products for ecological reasons.	Actual organic product purchases	Actual organic product purchases	ACT1
When I have a choice between two equal products, I purchase organic			ACT3
I would definitely intend to buy those products that are environmentally friendly			INT2
I would absolutely consider buying those products that are environmentally friendly	Intentions to choose organic products	Intentions to choose organic products	INT1
I would absolutely plan to buy those products that are environmentally friendly			INT3

Source: Authors' elaboration based on Kim and Choi (2005), Mei, Ling, and Piew (2012), and Stolz et al. (2011) and research results.

The reestablished factors were used for further analysis describing Lithuanian consumer attitudes towards organic products. Respondent attitudes, in the form of agreement or disagreement with the statements (items) provided in the questionnaire and expressed in a 10-point evaluation scale, were analyzed in a framework of five factors, namely: 'search for a healthy quality' (7 items); 'environmental concerns' (3 items); 'social behavior' (3 items); 'economic reasons' (2 items); and 'active engagement' (2 items). Further research results are presented and analyzed by calculating the factor evaluations.

To analyze the research results, the item evaluation rating was adapted from Bueno (2013). Accordingly, based on their evaluation means (a level of respondent agreement with a statement describing the item) all the items were attached to a particular category of attitude:

- 1) *Favorable attitude.* In this category, evaluation means ranged from 8.01 to 10. Very high respondent evaluation emphasized the favorable consumer attitudes towards the variable (respondents expressed strong agreement with the statement). Items attached to this category require exceptional attention by organic product producers in terms of management, communication, and marketing.
- 2) *Fair Attitude.* In this category, evaluation means ranged from 6.01 to 8. Items evaluated as having fair consumer attitudes were those evaluated

- positively (respondents somehow agreed with the statement); however, the agreement level was not strong. Managing items attached to the latter category, companies have to consider them, but investments into them would not be efficient. However, marketing communication provided for the purpose of changing consumer attitudes might be a solution.
- 3) *Indifferent attitude*. In this category, evaluation means ranged from 4.01 to 6. It was recommended to include the items having an average evaluation mean into this category. Average evaluation meant that respondents did not have an opinion about the item: they neither agreed, nor disagreed with the statement describing it.
 - 4) *Adverse attitude*. In this category, evaluation means ranged from 1 to 4. Respondents disagreed with the statements attached to a latter category. Such results meant that investment into items in this category would be harmful to a company.

The first and largest factor of the research was found to be ‘search for healthy quality’. The latter factor was supposed to reflect consumer attitudes regarding food safety in terms of different additives, possibly harmful for human health and the body, or genetically modified produce. The results of respondents’ evaluations are provided in Table 3.

Table 3. Evaluation of the factor ‘Search for healthy quality’

Statement	Evaluation mean	Factor evaluation mean
Pesticide residues in fruit and vegetables are harmful to human health	8.07	
Genetically modified food is a danger to human health	8.02	
Produce of animals kept outside (at pasture) is healthier than of those kept indoors	7.94	
Artificial flavors and additives in food are harmful to human health	7.66	7.69
I only buy food produced without artificial additives	7.60	
I generally do not buy products that include preservatives	7.54	
When I buy products, I often check the list of ingredients	7.01	

Research results provided in Table 3 gave several indications about Lithuanian consumer attitudes towards organic products in relation to health

issues. The factor's evaluation mean was 7.69, indicating that the factor could be categorized as having *fair attitudes* formed in the consumers' mind. Moreover, analyzing the results by items, two items from the category could be classified as causing a favorable shift in attitude: respondents highly agreed that '*pesticide residues in fruit and vegetables were harmful to human health*' and '*genetically modified food was a danger to human health*.' However, when asked about their behavior regarding products containing artificial additives or preservatives, the degree of agreement obtained was lower. The research results indicated that, even though they understood that some product ingredients might be harmful to human health, Lithuanian consumers did not often bother to read labels describing the product ingredients. Based on the research results, it might be presumed that the level of health-consciousness of Lithuanian consumers was fair, and a purposeful education about the issue might be suggested to turn it into favorable.

Another factor describing Lithuanian consumer attitudes towards organic products was 'environmental concerns.' Respondent evaluations regarding the latter factor are provided in Table 4.

Table 4. Evaluation of the factor 'Environmental concerns'

Statement	Evaluation mean	Factor evaluation mean
I strongly agree that more environmental protection work is needed in Lithuania	8.90	
Humans must live in harmony with nature in order to survive	9.13	8.85
I am extremely worried about the state of the world's environment and what it will mean for my future	8.52	

The factor 'environmental concerns' attained a high level of agreement and was categorized as having formed a *favorable attitude* in consumers: the factor evaluation mean was 8.85; moreover, every single statement reflecting the factor was also evaluated highly. To be more precise, the lowest evaluation mean was obtained for respondents' worries about the world's environment as a part of their future (evaluation mean was 8.52). Even though, respondents strongly agreed that '*more environmental protection work is needed in Lithuania*'. The latter result supported the conclusion from the analysis of the factor's 'search for healthy quality' evaluations: harder environmental education was necessary for Lithuanians. The highest evaluation mean was obtained for the statement that '*humans must live in harmony with nature in order to survive*' at 9.13. The latter result indicated

that consumers understood the importance of nature and environmental issues. Regarding the research results, it can be concluded that environmental issues were of high importance for Lithuanian consumers. Therefore, in order to form a positive attitude towards and promote the consumption of organic products, the positive (or at least not negative) effects on the environment have to be emphasized.

The third factor describing Lithuanian consumer attitudes towards organic products was ‘social behavior.’ Respondents evaluated three statements in the questionnaire regarding their social behavior. The evaluation results are provided in Table 5.

Table 5. Evaluation of the factor ‘Social behavior’

Statement	Evaluation mean	Factor evaluation mean
I often share information regarding environmental products with my friends	8.31	8.14
I learn so much about environmental products from my friends	8.28	
It is essential to promote green living in society	7.81	

The research results on respondent social behavior regarding organic products indicated *favorable attitudes* regarding the factor. As could be seen in Table 5, sharing information about environmental products with friends was a common practice among Lithuanian consumers. As a managerial implication, in this case, it could be suggested that companies communicate more precise and purposeful information about their products, which would be further shared through word-of-mouth. However, the research results indicated that the idea of ‘green living’ was still viewed suspiciously among Lithuanians – the evaluation mean of the statement indicated this idea only *gained a fair attitude* (the exception in the category). Based on the research results, it could be argued that even though they understood the importance of a ‘clean’ environment, Lithuanian consumers were still repressing the changes.

The next factor describing consumer attitudes towards organic products was established to be ‘economic reasons.’ To obtain the respondents’ evaluations of the factor, two statements were provided in the questionnaire. The statement and factor evaluations are provided in Table 6.

Table 6. Evaluation of the factor ‘Economic reasons’

Statement	Evaluation mean	Factor evaluation mean
I am willing to pay considerably higher prices for food which has considerably higher quality standards	7.68	7.62
I think that organic products have to be expensive	7.57	

Obviously, the statements regarding economic issues were doubted by the respondents. The factor evaluation mean, as well as every statement’s evaluation, suggested that respondents did not strongly agree with higher prices of organic products. Nevertheless, the results show that consumers understood higher prices of organic produce as being *fair* even if they did not agree to pay more. As an explanation of the results obtained for the factor ‘economic reasons’ the economic situation of Lithuania could be provided. According to Statistics Lithuania (2019), almost 23 percent of the country’s population was living below the at-risk-of-poverty threshold in 2017. Considering that figure, it could be argued that organic products could be afforded only by upper-scale consumers.

The final factor analyzed during the survey was ‘active engagement.’ Respondent evaluations of the statements describing attitudes towards active engagement in environmental issues are provided in Table 7.

Table 7. Evaluation of the factor ‘Active engagement’

Statement	Evaluation mean	Factor evaluation mean
It is very important to raise environmental awareness among people	7.97	8.07
I love discussions about nutrition and health	8.17	

The evaluation means provided in Table 7 indicated *favorable attitudes* towards active engagement. Consumers ‘*loved discussions about nutrition and health*’ – the statement’s evaluation mean is 8.17. The latter result confirmed previously obtained results regarding social behavior of consumers (sharing information regarding environmental products with friends and learning about environmental products from them). Despite the favorable attitudes towards the factor, the respondents did not find that ‘*raising environmental awareness among people*’ was very important. Once again,

the latter result supported the idea of the necessity of green education for Lithuanian consumers.

In concluding the analysis of the respondent evaluations, it could be argued that Lithuanian consumer attitudes towards organic products vary from fair to favorable. It could be stated that consumers expressed a high level of ‘environmental concerns’ (evaluation mean 8.85); also a high level of ‘active engagement’ into environmental issues (evaluation mean 8.07) and ‘social behavior’ regarding green consumption (evaluation mean 8.13). However, the evaluation results for ‘search for healthy quality’ (evaluation mean 7.69) and the effect of ‘economic reasons’ (evaluation mean 7.62) on organic consumption indicated room for improvement.

After analyzing consumer attitudes towards the factors possibly causing the consumption of organic products, a further step was to perform an analysis of their behavior. In the framework of this research, consumer behavior was expressed by two factors: consumer intentions to choose organic products and actual organic product purchases. The same rating classification adapted from Bueno (2013) was applied for the analysis.

During the survey, in order to evaluate consumers’ intentions to choose organic products, three statements were provided. Consumers indicated their agreement or disagreement with the statements on a 10-point evaluation scale. The results of the evaluation are provided in Table 8.

Table 8. Evaluation of the factor ‘Intentions to choose organic products’

Statement	Evaluation mean	Factor evaluation mean
I would definitely intend to buy those products that are environmentally friendly	7.28	
I would absolutely consider buying those products that are environmentally friendly	8.05	7.56
I would absolutely plan to buy those products that are environmentally friendly	7.34	

Controversial results were obtained regarding the factor ‘*Intentions to choose organic products.*’ Consumers expressed a high agreement (evaluation mean 8.05) that they ‘*would consider buying environmentally-friendly products;*’ however, their plans and intentions to buy environmentally-friendly products resulted only in *fair* attitudes (evaluation means were 7.34 and 7.28, respectively). Moreover, the total evaluation mean for the factor obtained was 7.56, meaning only fair consideration. The research results indicated that despite their high environmental concerns (evaluation mean 8.85), intentions

to choose organic products might be driven by other factors like economic reasons. Therefore, transforming consumer considerations into plans and intentions might be viewed as a field requiring support and management.

However, 'intentions to choose' was not the only factor describing consumer behavior. Respondents were also asked to provide their evaluations for the statements regarding their 'actual organic product purchases.' Also, three statements were provided in the questionnaire to assess consumer behavior (see Table 9).

Table 9. Evaluation of the factor 'Actual organic product purchases'

Statement	Evaluation mean	Factor evaluation mean
I prefer to buy organic food	7.71	
I have switched products for ecological reasons	7.36	7.61
When I have a choice between two equal products, I purchase organic	7.76	

The results, indicating actual consumer behavior regarding purchases of organic as well as in the case of intentions to choose those products, indicated room for improvement. The whole factor was evaluated as '*fairly agreeable*' – the evaluation mean was 7.61. The results of evaluation did not indicate a high preference for organic food, neither a high priority (evaluation means were 7.71 and 7.76, respectively). The reported switching behavior for ecological reasons was evaluated even lower (an evaluation mean of 7.36), meaning that customers were conservative and hardly willing to change their habits.

The analysis of evaluation means provided descriptive information about Lithuanian consumer attitudes and behavior regarding organic products. Moreover, the areas and ways for attitude management and improvement were detected.

DISCUSSION

The research was conducted in Lithuania and the respondents were also Lithuanians. Therefore, the results obtained were for this particular market. However, similarities in other countries could also be envisioned.

Environmental concerns. After the research with Taiwanese consumers, Chen (2009) found environmental concerns were an important motive to choose organic food in this market. Consumer attitudes regarding green products and

the environment were affected by their values; moreover, perceived trust in green products and purchase intentions regarding them were affected by customer perceived value (Chen, 2010; Chen & Chang, 2012). Also, Fraj and Martinez (2006 a, b) analyzed the influence of life-style and values in a sample of Spanish consumers by investigating their ecological behavior. The findings showed a positive attitude of Spanish consumers towards the environment. Lee (2008) provided research on green consumer behavior in Hong Kong. In this case, perceived environmental responsibility and environmental concern were established as factors predicting green purchase behavior in line with self-image and social influences. According to Kim and Choi (2005), as consumers become more concerned about environmental issues, marketing strategies based on “green” or “environmentally-friendly” products emerge.

Search for healthy quality. The factor was evaluated as being important to Lithuanian consumers. Research results showed that even though they understand the possible negative effects of some product ingredients on their health, Lithuanian consumers’ choices are only fairly driven by health or quality concerns. After the research with Taiwanese consumers, Chen (2009) found that in Taiwan, health consciousness was one of the reasons to choose organic food. According to Stolz et al. (2011), less price sensitive consumers expressed their intentions to pay more for the quality of food and their health concerns were reflected by their choices. Also, Irianto (2015) found human health consciousness to be one of the major factors affecting consumer intentions to choose organic products.

Social behavior and active engagement. While analyzing other countries’ examples, various results can be found. The results obtained by Lee (2008) established social influences as the most important factor having an impact on green purchase behavior in Hong Kong. Kalafatis et al. (1999) reported that despite ‘social norms’ and ‘societal acceptance’ stimulating British consumers’ intention to purchase green products, the first factor was not important in the case of Greek consumers. On the other hand, the research results from India indicate that social norms have an impact on consumers’ ecological concerns. The information about green consumption was shared between family and friends, motivated by the novelty of the issue. Such informational and social support helps consumers find conformance in themselves. Once again, the importance of social norms in green purchase behavior was supported (Kalafatis et al., 1999; Chan, 2000; Chen & Chang, 2012; Lee, 2008, Fraj & Martinez (2006 a, b).

The extent research on social influences can be found in the scientific literature; however, the research about the impact of social influences on consumer attitudes and behavior regarding organic product purchases is still limited. The existing scientific findings demonstrate that consumers

seek conformance in the form of advice from friends and within their social environment, mainly for innovations and for products with doubtful performance. Such confirmations help in reducing the related risks, also simplifying the purchase of new products. Discussing a green product's attributes with friends and acquaintances may reduce the risk of a wrong decision. However, Lithuanian consumers' controversial evaluation of statements reflecting 'social behavior' might be explained by the consumers' reluctance to consider the opinions of others: consumers discuss the issue with friends, but restrain transferring their opinion to the wider society. According to Kim and Choi (2005) consumers intend to share their interests with the members of their social groups, but are not concerned about the welfare of society at large. Moreover, it can be assumed that consumers are "getting bored by discussions about nutrition and health" (Stolz et al., 2011).

Economic reasons. Considering the factor's 'economic reasons' evaluations, it can be argued that a higher price might indicate a better quality product; however, the actual consumer choice behavior is suppressed by a higher price. Stolz et al. (2011) emphasize that, based on price sensitivity, organic product consumers might be divided into two segments: 1) the less price-sensitive prefer organic products; 2) the more price-sensitive prefer conventional ones. On the other hand, Haanpaa (2007) suggests that for Finnish consumers, economic concerns did not influence their green purchase attitudes.

Intentions to choose organic products were evaluated as having fair attitudes by Lithuanian consumers. Mei, Ling, and Piew (2012) emphasize that one of the most significant factors affecting green purchase intentions is peer pressure (as a part of social behavior). As discussions with friends, in terms of information sharing, were also evaluated positively by Lithuanian consumers, a conclusion might be made that companies have to employ this factor to make a positive impact on consumer intentions. Moreover, Stolz et al. (2011) emphasize that consumer preferences (or intentions) are strongly guided by consumer attitudes. Therefore, in order to affect the intentions of Lithuanian consumers to choose organic products, the managing, and marketing of favorably evaluated factors might be suggested.

Actual organic product purchases. The research provided by Kim and Choi (2005) emphasizes the difference between conventional and organic (or green) product purchases: "ecological consumption choices are future and group oriented." According to the authors, green purchases are directed by environmental concerns; therefore, consumers with a strong environmental concern might favor products that reflect that concern in terms of their consumption.

Therefore, in Lithuania, three favorably evaluated factors regarding organic product choice can be named: environmental concerns, social

behavior, and active engagement. Proper management of these factors might lead to an increase in organic product consumption. The research findings and implications are important for organic producers and scientists representing the field. Companies differentiating their products as 'organic' have to understand the importance of the role of the latter factors in influencing intentions and behavior in terms of organic product purchases. This presents a challenge for business organizations. The elaborated marketing and communication campaigns provided to change consumer attitudes and behavior towards organic products and the environment are becoming necessary. It is important to merge 'environmental concerns' and 'social behavior,' while also encouraging 'active engagement' by consumers in effecting the organic product choices in Lithuania.

CONCLUSION

In the context of Western European countries, Lithuania has become an important producer of organic products; however, it has a relatively small internal market for organic produce.

Despite the worldwide trend for organic product consumption, differences in the factors affecting it are obvious among countries or regions. The review of the scientific literature and the research of scientists representing different countries has enabled a bundle of factors to be established that possibly affect organic product choices. Scientific analysis showed that the most broadly analyzed antecedents of organic product choices (representing consumer attitudes towards the issue) were health issues; environmental concerns; food safety and quality; economic reasons; social reasons; psychological reasons; and factors representing the choice behavior were intentions to choose organic products; and actual organic product purchases.

After performing a factor analysis based on the results of the questionnaire survey, the theoretically established factors were regrouped to better represent a Lithuanian context. Consequently, two factors remained unchanged ('economic reasons' and 'intentions to choose organic products'); two factors were changed in terms of structural parts ('environmental concerns' was reduced by two variables, and 'actual organic product purchases' was complemented by one variable); the factor 'social reasons' was complemented and renamed into 'social behavior'; the factor 'psychological reasons' was eliminated, and the factor 'active engagement' was added. Moreover, the factors 'health issues' and 'food safety and quality' were merged into the factor 'search for a healthy quality.' Newly established factors can be used for further research in a Lithuanian context

by scientists and practitioners in order to analyze the changes in consumer attitudes and behavior, purposefully guide consumer opinion and develop ecological consciousness. Moreover, the established factors can be tested in the framework of other countries.

Considering the Lithuanian organic product market, analysis of the research results indicated that Lithuanian consumers expressed a high level of environmental consciousness: respondents' evaluations showed very high environmental concerns. Moreover, Lithuanians appeared to be highly social in terms of sharing information regarding ecological issues with their friends and demonstrated active engagement in sharing environmental issues-related information in their social environments. However, health and quality concerns were not evaluated as being highly important. Therefore, consumer awareness regarding the impact of ecologically 'unclean' products, artificial additives, preservatives or pesticides used during the production process, or genetically modified organisms and their impact on human health has to be raised. It can be concluded that environmental education appeared to be insufficient in Lithuania; therefore, a suggestion for its improvement and fortification was proposed to be concerned by the government or by companies providing organic produce. Another important issue regarding organic product purchases was the economic reasons. Consumers did not express a high agreement that organic products have to be more expensive, neither that they intended to pay a higher price. The relation between low concerns about their health can be envisioned. On the other hand, as the economic situation in Lithuania is poor, an assumption can be made that people cannot afford higher priced products. Therefore, up-to-date organic products can only be profitably offered to upper-scale customers.

Finally, the research results did not indicate Lithuanian consumer intentions to choose organic products as high; the actual organic product purchases were also assessed as being fair. For further research in the area it can be suggested to segment the market. Market segmentation would provide a wider view of the issue; moreover, determination of sensitive segments might show the ways for their attraction.

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Abstrakt

Cel: Artykuł analizuje postawy konsumentów i związane z nimi zachowania wobec produktów ekologicznych oraz określa czynniki wpływające na stosunek konsumentów do produktów ekologicznych i wybory konsumentów litewskich. **Metodyka:** Dotychczasowe prace naukowe są analizowane i uogólniane w celu naukowego uzasadnienia badań. Przeprowadzono badanie ankietowe w celu zatwierdzenia teoretycznie ustalonych czynników na litewskim rynku produktów ekologicznych. Kwestionariusz składa się z 23 stwierdzeń reprezentujących osiem ukrytych zmiennych: sześć możliwych powodów wyboru produktu ekologicznego (kwestie zdrowotne; troska o środowisko; bezpieczeństwo i jakość żywności; przyczyny ekonomiczne; przyczyny społeczne; przyczyny psychologiczne) oraz dwa możliwe wyniki (intencje wyboru produktów ekologicznych; rzeczywiste zakupy produktów ekologicznych). Wyniki badania oparto na odpowiedziach 269 respondentów reprezentujących populację czterech największych miast Litwy. **Wyniki:** Wyniki wskazują na strukturalne różnice między teorią a jej zastosowaniem na rynku litewskim; dlatego czynniki są przywracane. Wyniki badań wskazują na wysoki poziom świadomości ekologicznej litewskich konsumentów; również chęć dzielenia się informacjami dotyczącymi zagadnień środowiskowych z przyjaciółmi; oraz aktywne zaangażowanie w dzielenie się informacjami o kwestiach związanych ze środowiskiem. Jednak świadomość konsumentów dotycząca związku między produktami ekologicznymi a problemami zdrowotnymi i jakością jest niższa, co wskazuje na konieczność zarządzania. Ponadto konsumenci nie są zgodni co do tego, że produkty ekologiczne muszą być droższe; nie zamierzają płacić za nie wyższej ceny. Wyniki badań pokazują, że litewscy konsumenci nie wybierają często produktów ekologicznych, a także nie wykazują zachowań zgodnych (wynikających z zakupów produktów ekologicznych). **Implikacje dla teorii i praktyki:** Wyniki badań umożliwiają sformułowanie jasnych ram dotyczących postaw i zachowań litewskich konsumentów wobec produktów ekologicznych. Ustalone czynniki wpływające na postawy i zachowania konsumentów można dalej badać i modelować zgodnie z różnymi sytuacjami rynkowymi. **Oryginalność i wartość:** W oparciu o wyniki firmy mogą opracować skuteczne strategie marketingowe promujące postawy i zachowania konsumentów w określony sposób.

Słowa kluczowe: postawy konsumenckie, zachowania konsumenckie, wybór konsumenta, konsumpcja ekologiczna, konsumpcja proekologiczna, konsumpcja przyjazna środowisku, produkty ekologiczne

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Annex

Rotated component matrix

Name	Component						
	1	2	3	4	5	6	7
HQ1	.646	.218	.084	.212	.105	.052	.049
SOC1	.039	-.097	.021	.813	.041	.125	.067
ENG1	.100	.151	.036	.062	.860	-.020	.072
ECO1	.072	-.052	.032	.154	.186	.173	.757
INT1	.001	.148	.790	.247	.222	.003	.002
ENV1	.266	.545	.182	.395	.271	-.019	-.178
SOC2	.101	.460	.099	.583	-.093	.111	.172
HQ2	.598	.019	.109	.445	.072	-.136	.165
SOC3	.113	-.034	-.324	.702	.049	.193	.300
ENG2	.229	-.091	-.029	.013	.678	-.042	.334
ECO2	.106	.300	.073	.212	.078	-.086	.783
HQ3	.658	.304	.267	-.071	.079	.207	-.049
HQ4	.573	.555	.221	.133	-.193	.076	-.208
ACT1	.007	.266	.195	-.030	-.224	.691	.313
HQ5	.511	.364	.248	-.048	.226	.138	.257
ENV2	-.007	.590	.202	-.007	.208	.379	.100
ACT2	.211	.249	-.251	.306	-.111	.638	-.187
ACT3	.168	-.033	.169	.195	.184	.776	.025
ENV3	.188	.774	.115	-.115	.021	.073	.202
INT2	.342	.181	.770	-.191	.001	.209	.091
INT3	.263	.133	.817	-.136	-.146	.059	.053
HQ6	.504	.307	.121	-.062	.496	.218	-.128
HQ7	.742	-.151	.034	.025	.211	.121	.168

Conflicts of interest

The authors declare no conflict of interest.

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