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MANAGEMENT OF ENVIRONMENTAL SECURITY THROUGH ORGANIC AGRICULTURE. CONTRIBUTION OF CONSUMER BEHAVIOR

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Abstract

The general goal of the research was to integrate organic food consumer behavior into the topic of the management of environmental security. The detailed objectives were to determine Romanian consumers' beliefs about organic food and its role for environmental security, to identify consumers' judgement of environmental problems, to establish the influence that demographic and social variables have on consumers' beliefs and to emphasize the relationship between these. A random survey on 413 organic food consumers from North-Western Development Region of Romania was developed. A set of positive beliefs of organic food consumers regarding organic food and its contribution to environmental security are displayed by the present research: organic food is consumed because it is healthy (80% of tested consumers believe so) and it helps to protect the environment (75% of consumers). The study reveals there is a statistically significant difference between consumers who believe humanity faces threatening environmental problems and those who do not, concerning the strength of belief that organic food helps protecting the environment more than conventional food ($p < 0.05$). An original aspect of the paper is the investigation of the Romanian organic food consumers' beliefs from the perspective of environmental security. The set of variables selected to characterize consumers' beliefs from the environmental security point of view may be considered the novelty of the paper.

Key words: consumer behavior, consumers' beliefs, environmental security, organic food, Romania

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1. Introduction. Why is environment a security issue?

Environmental security is an increasingly important concern of each country, which is a piece of a globalized world, dependent on natural resources, on a finite planet, threatened by resource depletion, continuous degradation of natural balance, with increasing population and needs, defined by political frontiers which are worthless in front of trans-boundary pollution, climate changes and other manifestations of the natural forces. Desertification, water shortage and loss of biodiversity are only a few

examples of problems that threaten environmental security because “national security is no longer about fighting forces and weaponry alone. It relates increasingly to watersheds, forests, soil cover, croplands, genetic resources, climate and other factors rarely considered by military experts and political leaders, but that taken together, deserve to be viewed as equally crucial to a nation's security as military prowess” (Myers, 2004). All activities that affect environmental equilibrium can be the subject of environmental security research and can be integrated in the management of environmental security. The diverse environmental challenges

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require a shift from linear economy to system economy – an economy of technologies integrated to reach a non-polluting zero emissions production system (Gravitis et al., 2008). Agriculture has its share of influence on the environment, through continuous deforestation (to create plots for crops), pollution of soil, water, air (due to chemical fertilizers and pesticides), loss of biodiversity, of traditional crops and activities (in favor of a reduced number of more profitable crops managed through mechanized activities etc.) (Brezuleanu et al., 2013; Burja and Burja, 2014). Therefore, organic agriculture is an important piece of the puzzle that builds the solutions for a more sustainable world and the organic food consumer behavior brings a substantial contribution to the management of environmental security.

The relation between the environment and the security of nature and humans represents a priority axis of EU, international and Romanian environmental policy (Brezuleanu et al., 2013; Gázquez-Abad et al., 2011). In the last decades, rapid increase of population, ambitious agricultural policies, expansion of economic activities, as well as unplanned utilization and mismanagement, have all led to natural resources being extensively depleted and even overexploited (Ganoulis, 2007).

Environmental security is central to national security, comprising the dynamics and interconnections among the natural resource base, the social fabric of the state, and the economic engine for local, regional, national and international stability (IES, 2006). The document “European Security Strategy. A secure Europe in a better world” (CEU, 2009) outlines the connection between the quality of the environmental factors and the social, political stability and economic prosperity. Therefore, natural disasters, environmental degradation and competition for resources exacerbate conflict, especially in situations of poverty and population growth, with humanitarian, medical, political and security consequences, including increased migration. Climate change may also lead to disputes over trade routes, maritime areas and resources previously inaccessible (CEU, 2009).

The addition of non-military threats to the definition of national security has roots in the economic oil crises and limits to growth arguments of the 1970s (Meadows et al., 1972). One decade earlier, Rachel Carson’s bestseller, “Silent Spring” raised an alarm on the impact of pesticides on human health, and the behavior shift her book caused anticipated a revolutionary change in the manner in which the relationship between nature and human civilization would be perceived (Carson, 2002). Environmental issues were placed on the agenda of world politics at the United Nations Conference on the Environment (Stockholm, 1972), where the international importance of environmental issues was clearly and officially recognized and given an institutional setting through the creation of the United Nations Environment Programme (Caldwell, 1990).

Building on the legacy of Stockholm, the last decades have witnessed a flow of activity at the EU and international level. Multilateral conventions or regimes have been negotiated, addressing issues like sea pollution, use of nuclear materials, protection of flora and fauna, air pollution, military use of environmental modification techniques and trans-boundary movement of hazardous materials (Matthew, 1995). Ullman (1983) is another personality who argued for redefining security to include threats other than immediate military ones. Ullman acknowledged that it is intellectually challenging to incorporate non-military threats into the concept of national security, highlighting that diminishing resources, especially fossil fuels, would be a likely source of future conflict. Myers (1993) stated that, in essence, “(...) security applies most at the level of the citizen. It amounts to human wellbeing: not only protection from harm and injury, but access to water, food, shelter, health, employment, and other basic requisites that are the due of every person on Earth. It is the collectivity of these citizen needs – overall safety and quality of life – that should figure prominently in the nation’s view of security”.

2. Environmental security and management of environmental security defined

Environmental security concept has served as a rhetorical reference point for many years, and the focus of scientific concern on it enriched considerably the research literature on the topic in the recent decades. The concept itself has not been exhaustively elaborated or clarified in the policy-making community and it remains a concept open for divergent interpretations and definitions. Previous research offers a multitude of definitions, but keeps on targeting two major elements: 1) repairing damage to the environment for human life support and for the moral value of the environment itself; and 2) preventing damage to the environment from attacks and other forms of human abuse (Belluck et al., 2006; Cheremisnoff, 2002). In “Environmental Security: A Realist Perspective,” Michel Frederick defines environmental security as the “absence of non-conventional threats against the environmental substratum essential to the well-being of [a state’s] population and to the maintenance of its functional integrity” (Frederick, 1999). Jon Barnett offers a rather humane and radical interpretation: environmental security concept should be seen as only one dimension of the wider problem of human security where the livelihoods, health and welfare of people are being undermined by environmental degradation (Barnett, 2001). The notion of “environmental security,” conceived in a multitude of ways, represents an alternative paradigm for ordering and addressing threats in an increasingly interdependent and environmentally-degraded, post-Cold War world (Dabelko and Dabelko, 1995; Dalby, 2002).

Considering the previous mentioned understandings of the environmental security and the definitions of management accepted in scientific literature, the authors define management of environmental security as the organization and coordination of the activities in order to create, preserve, recover and enhance environmental security.

3. Food security through organic agriculture as a way to manage environmental security

The range of issues considered “environmental security” matters are numerous and various, and one of these is related to food. In the current scenario of rapid human population increase, achieving efficient and productive agricultural land use while conserving biodiversity is a global challenge (Tschardt et al., 2012). Food production and quality are sensitive to soil and air attributes, pests, diseases and biodiversity conservation. Food production, storage and distribution were always dependent of environmental conditions, responding to weather extremes and climate fluctuations (Ingram et al., 2010). According to World Food Summit (1996), “food security is a complex sustainable development issue, linked to health through malnutrition, but also to sustainable economic development, environment, and trade” (WFS, 1996). In the paper “Food production, population growth, and environmental security” Daily et al. (1998) argued that there were two broad criteria by which one could judge humanity’s success in feeding itself: (i) the proportion of people whose access to basic nutritional requirements was secure; and (ii) the extent to which global food production was sustainable. Since organic agriculture combines tradition, innovation and science to benefit the environment, as it provides high quality products and helps to increase the interest in rural areas of all parties involved, it can be considered a key activity for the sustainable development (Petrescu-Mag and Petrescu, 2010).

Organic agriculture is able to fulfill the role of a mediator, to diminish the conflict between what people need and take and what nature has to offer. In the Common Agricultural Policy, the emphasis is placed on reducing the risks of environmental degradation and enhancing the sustainability of agro-ecosystems through (EC, 2014): a) Cross-compliance criteria on agricultural market measures: as a condition of receiving direct payments, farmers must comply with certain requirements, including some related to environmental protection; b) Targeted agri-environmental measures: as part of Rural Development programmes, agri-environmental payments are available to farmers who are committed to agri-environmental management schemes for a minimum 5-year period.

At EU level, the reasons why governments support organic vary, but the key objectives remain the protection of the environment and the promotion

of rural development through organic farming. Transition to organic farming is one of the solutions that contribute to sustainable development. The practice of organic farming is influenced by the decision to produce and to consume agricultural goods while respecting the land, by not using pesticides or chemical fertilizers, with a positive impact on the environment (Burny, 2010; Burny, 2011).

4. Contribution of consumer behavior study to management of environmental security

Scientists often point to three factors as responsible for the state of the environment – population, technology, and consumption. In the 1970s, Barry Commoner, Paul Ehrlich and John Holdren developed an equation that expressed the human impact on environment (I) as the product of population growth (P), affluence (A, expressed through GDP), and technology (T): $I = P \times A \times T$ (Chertow, 2001; York et al., 2003). This equation helps in understanding some of the factors contributing to the human impact on the environment and points out that affluence, directly related to human consumption (and, thus, consumer behavior) is a main factor affecting the environment. However, the equation must be used acknowledging its weaknesses, such as being too simplistic, not taking into account other variables related to human impact on environment, assuming that P, A, and T are independent of each other or leaving aside the difficulty of finding a single index for environmental pressure (Alcott, 2010; Roca, 2002).

Consumer behavior research occupies an important place among other topics related to organic field (cultivation patterns, pest control, fertilizers, institutional, political issues etc.) through its contribution to the strengthening of organic agriculture and food market and through the central role that consumers play in the food chain. The development of a more environment friendly mentality in consumers’ behavior was observed during recent years, from sustainable touristic options (Cordente-Rodríguez et al., 2013) to organic diet (Dabija and Pop, 2013), justifying, thus, the greening of the marketing strategies and the focus on supporting the creation of nature friendly beliefs, not only as marketing opportunities, but also as means to foster sustainability. Consumers have the power to shape the economic, social and natural environment: they reward or sanction the sellers through their purchases or lack of purchases, according to their interest and product satisfaction; the increase or decrease of demand determines producers to focus on one type of product or another, which impacts on the supply in quantity, diversity and ease of access; consumers can influence other consumers to buy or avoid a product, to feel in a certain way in relation to a product, service and producer; consumers can put a green footprint on the world they live in because they dispose of many product choices, have access and

capacity to use the mass communication means and they are now better informed –, because the knowledge system, seen as the advice system, was recognized to be a key issue by the promoters of organic food production (Jørgensen, 2007). Although agriculture contribution to world GDP is small compared to industry and services (agriculture: 6%, industry: 31%, services: 63% - estimates for 2013; The World Factbook, 2012), agricultural production has a high impact on environment and environmental security. This is expected to increase in the following years – the projected growth rate of total world consumption of all agricultural products is 1.1% per annum from 2005/2007-2050, which means global consumption (and production if we assume they are equal) in 2050 should be 60% higher than that of 2005/2007 (Alexandratos and Bruinsma, 2012). Organic agricultural land increased worldwide from 11 to 37 million hectares, during 1999-2010 (Răducuță and Doroftei, 2012; Willer, 2011). EU puts organic agriculture in a broader context, relating it to conventional one, rural development, environment and society (Daugbjerg and Sønderkov, 2012; Lynch et al., 2012; Petrescu-Mag et al., 2011a, b; Silva and Marta-Costa, 2013). Romania follows the same ascending trend: organics increased in terms of the number of operators registered, production, sales etc. (Constantin, 2012; Ion, 2012; Ichim, 2012; Stoienescu, 2012). In Romania, conditions are favorable to organic agriculture: the existence of traditional activities, breeds, varieties, of pedological and climatic conditions, the decrease of industrial pollution during the last two decades, due to the reduction of industrial production, the consumers' interest in healthy food and natural products. However, their positive influence is challenged by factors that restrain the development of organic agriculture and of consumption of organic food, such as: the decrease of agricultural labor force, its poor endowment with technical equipment, the competition of foreign organic products and of conventional ones, the lack of trust and knowledge of potential producers, the administrative barriers for rural producers in certain areas such as slow or difficult access to information related to funding opportunities or to their implementation, the low effective management and marketing practices (Petrescu et al., 2010; Petrescu-Mag and Petrescu, 2010). Some of these drawback factors, like the ones related to market, can be overcome through consumer behavior research. Therefore, the change of consumers' perceptions on organic food, of eating habits, the improvement of consumers' awareness of organic food existence, quality and benefits, of the connections environment-agriculture-food and of their role in this equation, of their right to healthy food, to a clean environment and to access accurate, up to date information, would increase the organic food consumers' role in the management of environmental security.

The general goal of the paper was to integrate the organic food consumer behavior into the topic of

management of environmental security. In the framework of previous international research and of the Romanian environment and market context, the objectives of this research were to select the variables that best characterize consumers' beliefs, which are relevant for the environmental security, and to analyze them. More specifically, the detailed objectives were: to determine Romanian consumers' beliefs about organic food and about its role for environmental security, to identify consumers' opinions about environmental problems, to establish the influence that demographic and social variables have on consumers' beliefs and to emphasize the relationship between these.

An original aspect of the paper is the investigation of the Romanian organic food consumers' beliefs from the perspective of the environmental security, while most of the available literature is concerned about the Western consumers and the topics are primarily focused on consumption motivations, barriers and perceptions of food attributes. The set of variables selected to characterize consumers' beliefs from the environmental security point of view (detailed in section 5. Materials and methods) may be considered the novelty of the paper. Another contribution is the definition of the management of environmental security, which, to our knowledge, was not presented so far.

5. Materials and methods

The research method was the survey, the method used for data collection was face-to-face structured interview, and the instrument was a structured questionnaire. The sample size was 413 people (over 18 years old, consumers of organic food), from the North-Western Development Region of Romania. The sample structure was similar to that of the univers population, by counties, from the gender and age point of view, according to the data provided by the 2011 Census. Data analysis was carried out using the softwares Excel and SPSS version 21. For comparison of the differences regarding an ordinal variable, between two groups, the Mann-Whitney U test was used. The relationship between two ordinal variables was investigated using Spearman's Rank Order Correlation. The level of statistical significance was set at $p < 0.05$.

6. Results and discussion

Several variables that put consumer behavior in the context of environmental security were identified, evaluated and selected to transform the information on consumer behavior into a useful tool for the management of environmental security. We assumed that perceptions and beliefs overlap in their meaning and mental representation of consumers (O'Brien, 2007). Thus, four main groups of variables resulted: (I) firstly, two variables that characterize organic food were chosen to understand how it is

perceived by consumers: the connection with the health concern and the composition; (II) secondly, the variables that characterize the role of organic food for environmental security aspects were taken into consideration: the capacity to protect the natural environment, to preserve the existence of traditional products (because they contribute to social welfare and can offer solutions to problems unsolved by modern technologies) and to ensure better life for the animals which are a food source; (III) thirdly, consumers' judgment of environmental problems were taken into account: awareness of high risk environmental problems, beliefs regarding consequences of current pattern of economic activity on the natural environment at global level and at Romania level; (IV) finally, several demographic and social variables which influence the consumers' behavior related to organic food were considered: gender, health problems, children in the family, place of living (Fig. 1).

The research questions for this study were: "Which is the strength of belief related to variables listed in Fig. 1, sections (I)-(III)?"; "Is there a difference according to gender/perceived existence of health problems/existence of children in the family/place of living regarding the variables mentioned in Fig. 1, sections (I)-(III)?"; "Which is the strength and direction of the linear relationship between pairs of variables included in Fig. 1, sections (I)-(III)?" The

findings of the study are reflected in figures (they all indicate a percentage of consumers of total sample and are elaborated by the authors based on the survey data; Fig. 2 and Tables 1-3 (elaborated by the authors based on the survey data).

The sample was roughly divided in half by gender (question/request no. 2: "Indicate your gender: a) M, b) F"), as showed in Fig. 2.a. (question/request no. 1 was a filter question: "Have you eaten organic, also called ecological or bio, food during the last 12 month?").

Health concerns are a powerful driving factor to adopt a behavior oriented towards restoring and protecting one's health and acquiring good habits, such as eating healthier, exercising or searching for a cleaner environment, assuming that environment quality impacts on human health. If the health problems are already in place, the concern for and the need of a healthier lifestyle might be higher. The authors wanted to see how many of the subjects considered themselves as having health problems and if their existence had an impact on the way they perceived environmental issues. Therefore, the objective of question no. 3 ("Do you have health problems?") was to reveal a personal, subjective, perception of their own health state and not to identify the objective health state of a person. More than three quarters of the subjects felt healthy (Fig. 2.b.).

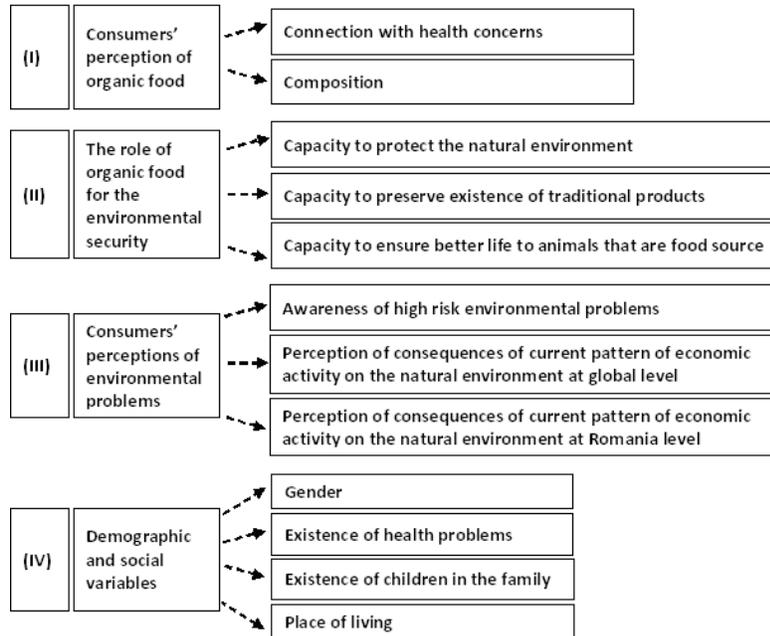


Fig. 1. Variables map: variables set used in this consumer behavior research with contribution to management of environmental security

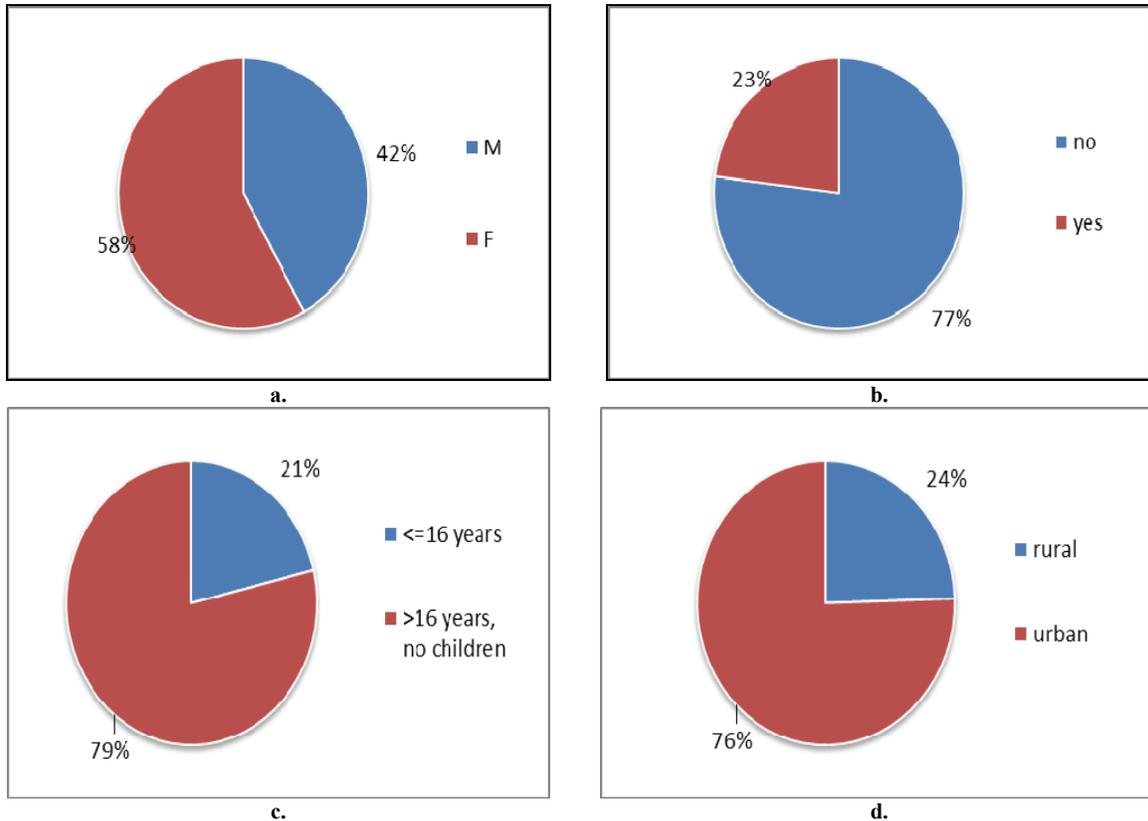


Fig. 2. Sample structure by: a. gender; b. self-perception of health problems existence; c. existence of children in the family; d. place of living

A powerful factor that increases one's awareness and concern for health and wellbeing is the existence of children in the family; its influence on consumers' beliefs regarding environmental issues was analyzed. The question (no. 4) "Do you buy food or do you cook for children in your family?" showed that only one fifth of the sample cooks or buys food for children younger than 16 years old in their family (Fig. 2c.). The 16 years old limit was selected considering that after this age parents' influence on children/teenagers food choices are less powerful.

The place of living is another important influencing factor of consumer behavior. Question no. 5, "Which is the place of living where you spend most of your time in a year?", indicated that three quarters of the sample lived in urban areas (Fig. 2d). Organic products are produced for two main purposes, besides economic reasons: to protect/improve the health of consumers and to protect the environment. Therefore, consumers' beliefs regarding the relationship organic food consumption–health concern will shape their consumption behavior. Request no. 6 was introduced to explore it: "Indicate your agreement/disagreement level with the statement: Most of those who consume organic products are more concerned about their health than the rest" (Fig. 3). The majority of consumers (80%) believed that people who consumed organic food were more concerned about their health than the rest of the population, which meant they considered that

one main reason for organic food consumption was to protect/improve health. The belief that organic food is good for health can support the efforts to develop organic agriculture, becoming a component of the management of environmental security. Consumers have a powerful voice if they share a common belief and get involved in common actions. Therefore, the 80% tested consumers believing in the connection "consumption of organic food–concern for health" reflects a positive situation. Consumers' behavior changes to comply with their interest, it's influenced by their purchasing power, access to information, knowledge regarding nutrition, health etc. (Drăgan and Petrescu, 2013; Goetzke et al., 2014; Haghiri et al., 2009; Hsu and Chen, 2014; Kahl et al., 2012; Magkos et al., 2006; Orboi et al., 2009; Petrescu and Petrescu-Mag, 2015; Petrescu et al., 2013; Purcărea et al., 2013; Răbonțu and Todoruț, 2010; Răducuță and Doroftei, 2012; Shafie and Rennie, 2012; Tîrhaș, 2013; Verain et al., 2012; Vesa et al., 2009). In time, they can become more interested in following a healthy lifestyle, including through their eating habits.

Consumers' beliefs related to organic food composition was investigated through the request no. 7: "Indicate your agreement/disagreement with the statement: Organic food sold on the market contains no additives, it is not genetically modified etc." (Fig. 4). More than half of consumers (52%) believe that organic products do not contain additives, GMOs.

The others reveal a lack of trust in the quality of organic products (in fact, in the capacity of control bodies to ensure the requested quality) or a lack of information about the characteristics of organic food.

In order to understand consumers' beliefs regarding organic food capacity to protect environment request no. 8 was introduced: "Indicate your agreement/disagreement with the statement: Organic food helps to protect the natural environment more than conventional food" (Fig. 5).

Consumers' beliefs related to the organic food capacity to preserve traditional products and activities was investigated through request no. 9: "Indicate your agreement/disagreement with the statement: Organic food helps to preserve traditional

products and activities more than conventional food" (Fig. 6).

Consumers' beliefs about organic food capacity to ensure a better life for the animals which are a food source was analyzed through request no. 10: "Indicate your agreement/disagreement with the statement: Animal organic food comes from animals that had a better life than in the case of conventional ones" (Fig. 7).

Consumers' awareness of environmental problems' risk degree was studied through question no. 11: "In your opinion, does humanity face natural environment problems which are very threatening?" (Fig. 8a).

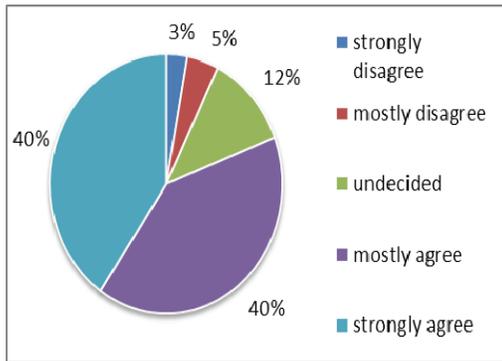


Fig. 3. Consumers' beliefs regarding the connection organic food consumption–health concern

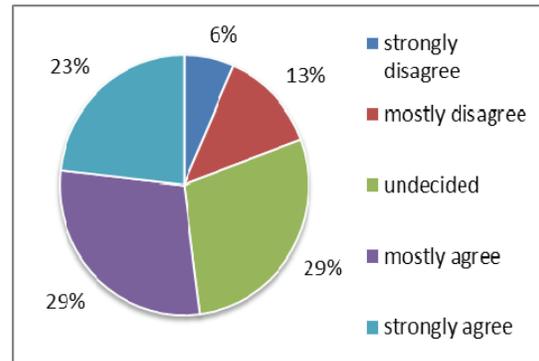


Fig. 4. Consumers' beliefs regarding the organic food composition

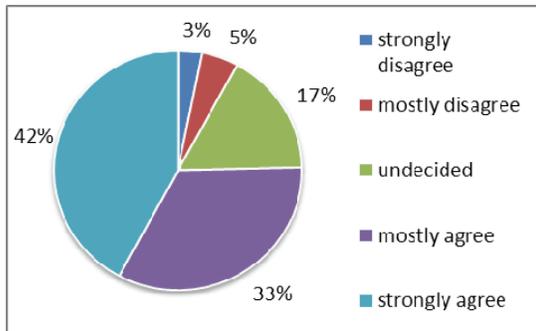


Fig. 5. Consumers' beliefs regarding the organic food capacity to protect the natural environment

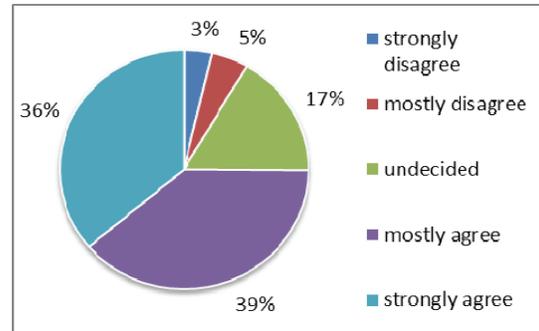


Fig. 6. Consumers' beliefs concerning the organic food capacity to preserve traditional products and activities

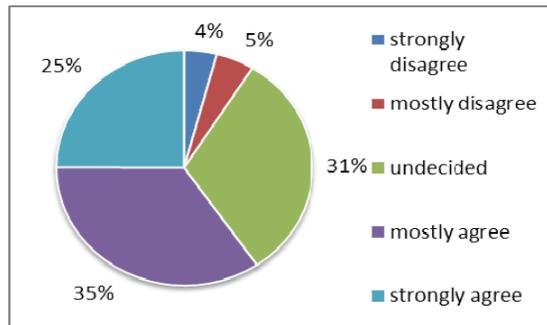


Fig. 7. Consumers' beliefs regarding organic food capacity to ensure a better life for the animals which are a food source

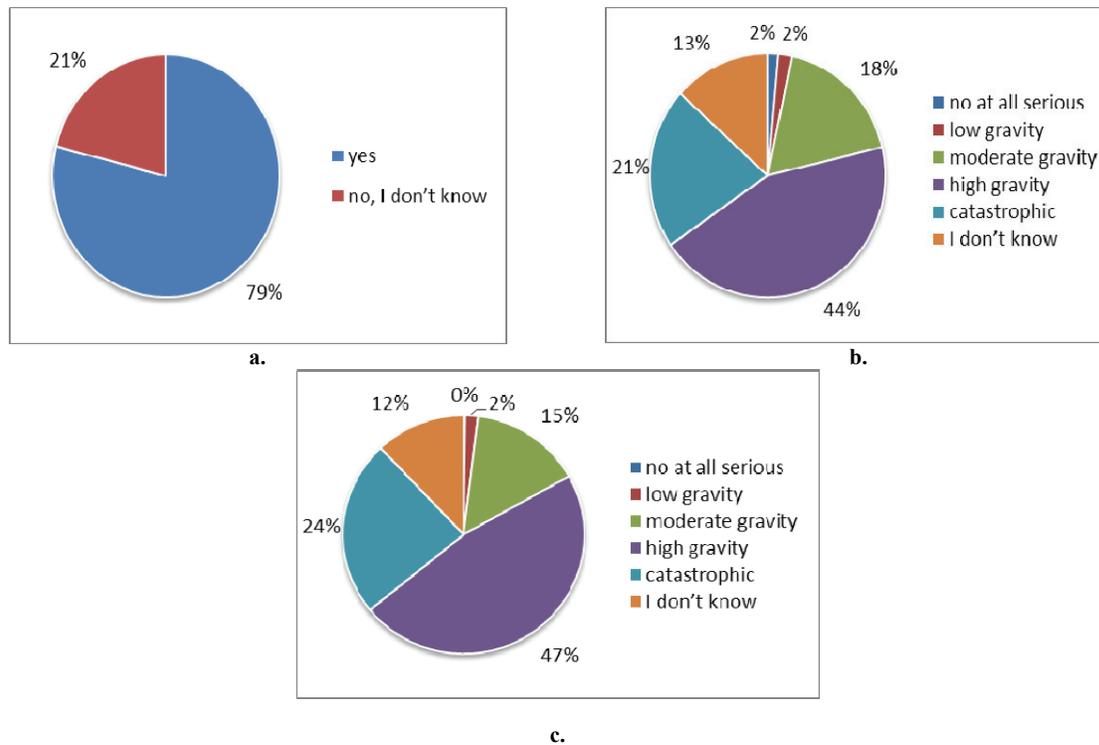


Fig. 8. Consumers' awareness of: a. high risk environmental problems; b. the consequences of the current pattern of economic activity on the natural environment, at global level; c. the current pattern of economic activity on the natural environment, at Romania's level

Consumers' awareness of the consequences of the economic activity current pattern on the natural environment, at global level, was tested using question no. 12: "In your opinion, if current trends persist, the consequences of the current pattern of economic activity on the natural environment, are, at global level: not at all serious/ low gravity/ moderate gravity/ high gravity/ catastrophic/ I don't know/don't have information about it" (Fig. 8b). The higher the perceived risk is, the higher is the tendency to take protective actions. If consumers consider the current pattern of economic activity as threatening for the environment and if they care about its state, they will be more willingly to comply with actions that contribute to environmental security.

There might be a difference between the beliefs regarding this situation at global level and at national level, so, a separate question (question no. 13) for Romania was created: "In your opinion, if current trends persist, consequences of the current pattern of economic activity on the natural environment, are, at Romania's level: not at all serious/ low gravity/ moderate gravity/ high gravity/ catastrophic/ I don't know/don't have information about it" (Fig. 8c).

The results reflected in Figs. 3-8 demonstrate a positive situation from the awareness and type of beliefs point of view. However, we must take into consideration that people tend to present themselves in a better light than they objectively are, so the answers might over-estimate their real beliefs. The

answers are representative for organic food consumers. Real and self-assumed consumers of organic products were taken into consideration and the rejection rate generated by the filter question (Question/request no. 1: "Have you eaten organic, also called ecological or bio, food during the last 12 month?") was extremely low (far below 1%), because practically everybody obtained some food from the countryside, which they considered to be organic.

The differences between two independent consumer groups (column (2) of Table 1) of ordinal variables (column (4) of Table 1) were investigated. The research questions are listed in Table 1 and the results in Table 2.

The results for p values of Mann Whitney U tests for variables in Table 1 are presented in Table 2. A significant result, $p < 0.05$, was obtained in 7 cases:

(1-2) There is a statistically significant difference between people who feel they have health problems (they have stronger beliefs) and those who do not feel they have health problems in terms of strength of belief that:

- organic food contains no additives, GMOs etc.
- organic food has the capacity to preserve the existence of traditional products more than conventional food.

(3-7) There is a statistically significant difference between people who believe humanity faces natural environment problems which are very threatening (they have stronger beliefs) and those who do not, concerning the strength of belief that:

- people who eat organic food are more concerned about their health than those who do not consume it;
- organic food contains no additives, GMOs etc.;
- organic food helps to protect the natural environment more than conventional;
- organic food helps to preserve the existence of traditional products more than conventional;
- organic food has the capacity to ensure a better life for the animals which are a food source more than conventional.

For all the other cases, no statistically significant difference ($p > 0.05$; Table 2) was observed.

Health concerns may lead consumers' to pay increased attention to organic food and its characteristics, such as those reflected by this study – it does not contain additives, GMOs etc., it has the capacity to preserve existence of traditional products more than conventional food. Awareness of environmental threats is also a factor that influences

the perception of organic food, for instance, its capacity to protect the natural environment more than conventional food, to ensure a better life for the animals which are a food source than conventional food etc. These two sensitive points (concern for health and for the environment) can be used to stimulate consumers' availability to know more about organic food and to increase organics consumption.

The strength and direction of the linear relationship between the two ordinal variables (listed in Table 3) was described through correlation analysis, using Spearman's Rank Order Correlation. It was observed that high levels of awareness of the risk of the consequences of current pattern of economic activity on the natural environment at Romania's level are associated with high level of awareness of the risk at global level [$r = .621$, $p < .01$], which means consumers are sensitive to this problem at both levels.

Table 1. Research question to test differences between two independent groups of ordinal variables

(1)	(2)	(3)	(4)
Do	<ul style="list-style-type: none"> - men and women - people who feel they have health problems and those who do not - people with children under 16 years old and those with older children or no children - people living in urban areas and those living in rural areas - people who believe humanity faces natural environment problems which are very threatening and those who do not 	differ in terms of their strength of belief (perception/ awareness levels) concerning the following variables:	<ul style="list-style-type: none"> - the relationship organic food consumption-health concern, - organic food composition, - organic food capacity to protect natural environment, - organic food capacity to preserve existence of traditional products, - organic food capacity to ensure better life for the animals which are a food source, - consequences of the current pattern of economic activity on the natural environment at a global level, - consequences of the current pattern of economic activity on the natural environment at Romania's level.

Table 2. Results for p values of Mann Whitney U tests for variables in Table 1

<i>Factor list</i>	<i>men and women</i>	<i>people who feel they have health problems and those who do not</i>	<i>people with children under 16 years old and those with older children or no children</i>	<i>people living in urban areas and those living in rural areas</i>	<i>people who believe humanity faces natural environment problems which are very threatening and those who do not</i>
<i>Test variable</i>					
the relationship organic food consumption-health concern	p=.267	p=.201	p=.389	p=.198	p=.004
organic food composition	p=.735	p=.027	p=.758	p=.357	p=.014
organic food capacity to protect natural environment	p=.262	p=.175	p=.592	p=.407	p=.000
organic food capacity to preserve existence of traditional products	p=.090	p=.003	p=.526	p=.734	p=.000
organic food capacity to ensure a better life for the animals which are a food source	p=.536	p=.969	p=.136	p=.624	p=.000
consequences of the current pattern of the economic activity on the natural environment at global level	p=.251	p=.134	p=.092	p=.910	p=.915
consequences of the current pattern of the economic activity on the natural environment at Romania's level	p=.367	p=.221	p=.119	p=.801	p=.077

Table 3. The strength and direction of the linear relationship between two ordinal variables (Spearman's Rank Order Correlation)

	(A)	(B)	(C)	(D)	(E)	(F)	(G)
(A)		$r=.175;p=.000$	$r=.340;p=.000$	$r=.256;p=.000$	$r=.144;p=.003$	$r=-.023;p=.647$	$r=.008;p=.874$
(B)			$r=.209;p=.000$	$r=.081;p=.100$	$r=.093;p=.058$	$r=.041;p=.401$	$r=-.041;p=.408$
(C)				$r=.506;p=.000$	$r=.288;p=.000$	$r=.121;p=.014$	$r=.029;p=.558$
(D)					$r=.249;p=.000$	$r=.170;p=.001$	$r=.001;p=.978$
(E)						$r=.008;p=.875$	$r=-.064;p=.193$
(F)							$r=.621;p=.000$
(G)							

Legend: (A)=the relationship organic food–consumers' health concern; (B)=organic food composition; (C)=organic food capacity to protect natural environment; (D)=organic food capacity to preserve the existence of traditional products; (E)=organic food capacity to ensure a better life for the animals which are a food source; (F)=consequences of the current pattern of the economic activity on the natural environment at global level; (G)=consequences of the current pattern of the economic activity on the natural environment at Romania's level

7. Conclusions

A set of positive beliefs displayed by the organic food consumers, regarding the organic food and its contribution to environmental security, are highlighted by the present study. The great majority of tested consumers, 80% of them, indicated the health concern as a main driver for their organic food consumption.

Organic food is perceived as “clean”, closer to a genuine natural product, because, in 52% of Romanian consumers' opinion, it contained no additives or GMOs. The organics function of protecting the environment was largely acknowledged – by 75% of consumers. From a practical perspective, this image of organic food in consumers' mind (healthy, natural and environmentally friendly), is crucial for marketers in designing advertising campaigns dedicated to organic food. This information, correlated with consumers' awareness (79% of them) that humanity currently faces high risk environmental problems, indicate the existence of the foundation of a sustainable behavior, which can support the development of the Romanian organic agriculture sector.

Consumers' sustainable choices and a strong organic agriculture sector, always accompanied by a coherent and updated legal and administrative framework, will make possible the existence of a well-functioning private-public partnership dedicated to secure the environment by preventing, preserving, enhancing and repairing it. Therefore, all factors generating useful effects on environmental equilibrium, including organic agriculture – with significant contribution to sustainability and environmental security – and organic food consumer behavior, should be perceived as valuable tools that must be integrated into the management of environmental security.

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