Agricultural and Organic Farming Production in the Analysis of Social Well-Being in the European Union Countries

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Abstract:

The study aim is to determine the relationship of factors associated with production of organic food and the quality of life (QoL) of Europeans. The QoL and organic agriculture are not one-dimensional variables related to behavior, reactions and relationships, regarding individuals, households, producers and farmers. In addition, these factors interact with each other. We intend to determine whether the QoL of Europeans is perceived by them only in terms of ownership, or whether issues related to the assessment of the condition and status of agricultural and organic farming production affect the perception of QoL in a non-material psychological aspect. The study mainly assessed the QoL in relation to subjective well-being based on self-assessment of Eurobarometer respondents (life satisfaction measured on 5-point Likert scale). The data for the study comes from the EUROSTAT and Eurobarometer databases for EU-countries in three groups. The analysis uses correspondence analysis and Hellwig's ordering method as main tools to detect relationships and similarities between the countries. In the study we checked whether the assessment of QoL is done by shaping individuals' opportunities in life, not only with respect to the state of ownership but also the impact of objective factors, such as agricultural production volume.

Keywords: quality of life; well-being; organic agriculture.

JEL Classification: C3; D1; I3; Q5.

Introduction

Organic as a label more and more often appears not only in case of food products but also others whose production requires use of products from organic agriculture. Using Cambridge Dictionary sources, we state that the term organic can be used to describe food products, production methods and agriculture as long as artificial chemicals. The word also frequently appears on clothing labels, indicating that the fabric, was created under the conditions of organic growth. On the basis of these definitions, it is also possible to introduce an organic lifestyle which aims to eliminate unnecessary chemical ingredients from food and strives for broadly understood environmental protection. If we use the term organic in this way, we will naturally reach the definition of social well-being which will have to embrace assessment of organic friendly life and consumption.

The aforementioned problem disposed us to define the research area where we can examine the relationship between social awareness related to organic food, farming, products, production and consumption of these goods as well as subjective assessment of well-being. The aim of the study is therefore to check how socio-economic factors determining the well-being of individuals imply views on organic consumption and the perception of organic food, farming, products and production and whether they are related to the volume of consumption and production of these goods. Further development of the research goal is to check whether organic production is conditioned by a high degree of well-being of the inhabitants of EU countries.

1. Organic Lifestyle and Higher Well-Being

1.1. Organic Agriculture

The criterion that defines the concept of organic production in the European Union is Regulation of the European Parliament and of the Council Regulation (Regulation 2018). According to this regulation: "Organic production is

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an overall system of farm management and food production that combines best environmental and climate action practices, a high level of biodiversity, the preservation of natural resources and the application of high animal welfare standards and high production standards in line with the demand of a growing number of consumers for products produced using natural substances and processes."

This definition covers both the aspect of consumption (consumer demand) of organic goods as well as the supply side of the production process of these goods. The cited regulation also gives names for domestic organic products, *e.g.* ecological, biological. Products labelled as organic, ecological or biological must be made in accordance to the rules described in the Regulation. This regulation protects consumers' rights by specifying requirements for organic product markets and, on the other hand, by defining the organic production process.

If we consider only food markets, then, as Matt *et al.* (2011) point out, consumer confidence in conventional products is decreasing and alternative food producers are being sought. This is the main reason for the development of organic product markets. Consumers are increasingly aware of the negative impact of such elements of conventional production as artificial fertilizers or chemicals for plant protection, and the so-called quality and flavor enhancers (preservatives, synthetic flavors) not only on their health but also on the environment.

As Bartóková (2018, 1909) writes "organic farming can be described as an agricultural production which uses organic production methods and places the highest emphasis on environmental and wildlife protection". Based on the Reganold and Wachter (2016) study on the comparison of organic and conventional farming, we learn that organic farming achieves significantly better results in the following areas of sustainability: soli quality, ecosystem services, reduction of workers' exposure to pesticide, minimalization of pesticides use. It leads in such areas as energy use, biodiversity, water pollution, profitability, employment. In two areas organic and conventional farming are similar: total costs and nutritional quality. In two areas, according to Reganold and Wachter (2016), conventional farming achieves better results than organic: higher yields and lower costs.

1.2. Subjective Quality of Life and Well-Being

The Organization for Economic Cooperation and Development OECD definition (2011, 2017) indicates that quality of life is about human well-being. It is measured by social indicators. These are non-monetary attributes of individuals, shaping their life chances, varied in cultural and social cross-section. This definition as most of other about QoL refer to the level achieved by both subjective and objective factors. Nowak (2018, 73) indicates that "the quality of life ... can be considered as a subjective assessment of a person and objective on the basis of statistics describing an individual ... The quality of life should be examined at both the individual and social level".

The statistical offices of the EU and member states also propose their own definitions. The EUROSTAT (2020) definition focuses on: material conditions, professional activity, health, education, leisure and social interaction, economic and private security, government and basic rights, general life experiences. Additionally, EUROSTAT (2020) study includes the assessment of the natural and living environment, which, combined with the assessment of subjective perception of life, response to stimuli and feeling of happiness, accurately matches the problem posed in the study. Thus, the definition and way of measurement of Europeans' quality of life takes into account not only their well-being but also the aspects associated with environmental protection and organic agriculture.

All the quoted definitions treat a quality of life as a multidimensional phenomenon. The perception of this phenomenon becomes even more complicated if we assume, according to Eurofound (2020), we assume that the quality of life of individuals results from the quality of life of the society. Activities in these two areas in terms of quality of life are interrelated and mutually affect each other. Villamagna and Giesecke (2014) stated that the quality of life is affected by factors associated with the implementation of material and non-material needs. Objective and subjective factors describing the quality of life are multidimensional and interpenetrate on many levels. Welsch (2011) showed that objective, macroeconomic factors which very strongly influence the quality of life of an individual are unemployment and inflation. Income, higher education and marriage were among the subjective or characterizing factors of the individual that create the highest positive correlation with life satisfaction. However, the most important factor affecting life satisfaction was unemployment.

Brown *et al.* (2018) indicated five domains of human well-being: income and household expenditure, housing and material assets, food security and nutrition, health, cultural and subjective well-being, other. Three areas here are related to the quality of life perceived through the prism of using organic products.

As broad as the concept of life satisfaction and subjective well-being is it embrace ever new factors. Butler and Oluoch-Kosura (2006) pointed out that the individual's perception of well-being is related to a specific moment in life and therefore a temporary context, expectations, relationships, social position, and a sense of participation and inclusion play an important role here.

Villamagna and Giesecke (2014) determined the indicator of changes in human well-being so as to take into account biophysical and socio-economic changes affecting the provision of ecosystem services. They assumed that this indicator must be flexible (use in different environmental and socioeconomic conditions) and coherent to allow comparisons.

1.3. Organic Well-Being

As some references to the place of the ecosystem in the well-being definitions have been mentioned in the paper one should think about what ecosystem services are. Kremen and Miles (2012) present several elements to be considered. The most related to individual's well-being are nutrient management, water-holding capacity, energy efficiency and reduction of warming potential, resistance and resilience to climate change. Other elements of ecosystem services affect human well-being indirectly. They are: biodiversity, soil quality, control of weeds, diseases, and pests, pollination services, carbon sequestration and crop productivity.

Individual the quality of life depends indisputably on income. Higher quality of life affects the ability to make decisions not only to satisfy basic needs but also to open up opportunities to realize the need for ecology, environmental protection and changing nutrition systems. It thus changes consumption patterns and behaviors. The most obvious consequence is turning towards pro-ecological behaviors. People at risk of poverty choose the cheapest products (which are often associated with poor quality) and sometimes it is difficult to find any sense in their existence. In order to further describe the relationship between well-being, subjective life satisfaction and organic food, farming, products or production, the term organic agriculture was adopted for all activities related to the production of organic goods. Of course, the positive relationship between income and awareness of individual pro-ecological and organic agriculture oriented activities is a generalization which allows for some possible cases of negative relations.

Organic is one of the functions of the ecosystem. As a close relationship between well-being, organic agriculture and ecosystem services, it should be pointed out that the factors necessary for subjective well-being are material and non-material factors. Therefore, material factors such as shelter, clothing and food, as determinants of well-being are related to organic production. But looking more broadly at the policy of sustainable development, organic idea impacts the increases of the ecosystems' functions, which gives the opportunity to achieve non-material goals of well-being even related to leisure, health, safety, frame of mind and the ability to make your own choices.

Since organic food is of better quality, it is a key statement that the consumption of good quality organic products not only improves health and physical condition, but combined with the awareness of the socio-economic-ecological relationships of market factors, can improve the well-being also in its psychological aspects. Reganold and Wachter (2016) presents similar justifications. These authors also point out that organic agriculture underuse abilities as main factors in global food and ecosystem security.

The advantage of organic agriculture over conventional remains unchallenged. It is important, however, to draw the attention of more consumers to this agricultural production system and to indicate its positive effects for a single person (mainly health aspects) and for global well-being, which also translates into benefits for individual well-being (protecting the natural environment, limiting global warming, reduced food waste, increased employment). Factors responsible for sustainability in agriculture are not mutually exclusive and information promoting their co-existence should be widespread.

Organic agriculture must develop constantly and be supported by legal solutions and co-financed by governments or, as in case of European farms, additionally by the EU (Picket 2013). However, the question arises whether Europeans citizens understand this, or believe that there are other more pressing needs. For this reason, education and public engagement is necessary (Picket 2013). The exact impact on human well-being ecosystem and agricultural productivity was presented by Brown *et al.* (2018), who cited agroforestry intervention as an example. At the core of the actions to improve the three areas were farmers' conviction and involvement as well as education in the research area.

Well-being is one of the Principles of Organic Agriculture developed by the International Federation of Organic Agriculture Movements (IFOAM 2009). These rules apply respectively to Health, Ecology, Fairness and Care. And it is the latter that advise management and production rules for organic agriculture to be conducted in such a way as to guarantee well-being of current and future generations and the environment.

The positive link between well-being and organic agriculture can also be found in the European Commission's guidelines. In 2016, the Commission took steps to implement the sustainable development program within the European Union (European Commission 2019). These decisions were a response to the 2030 Agenda taken in 2015 by the United Nations General Assembly. The 17 sustainable development goals have been set to

fight poverty, protect our planet and ensure the well-being of all people. From the point of view of the presented research objective, the most important are the combined activities in the areas of: zero hunger; good health and well-being, responsible consumption and production, life on land. Together, they allow us to define the main determinant of sustainable organic agriculture in improving social well-being. Based on these goals, we determined that organic agriculture should be developed to ensure care for the ecosystem and biodiversity. This in turn will affect sustainable consumption and develop healthy eating patterns, increase quality and guarantee care for the safety of organic products, thereby improving both the quality of life and assessment of well-being of individuals.

Summarizing the considerations on the relations between well-being and organic agriculture, it can be pointed out that there are substantive premise to indicate these relations. Although we have highlighted some ways of indicating human impact on the ecosystem as well as the impact of organic agriculture on well-being. Literature suggests that it is a very difficult task. For example, according to Villamagna and Giesecke (2014) it is difficult to pinpoint a direct link between well-being and the ecosystem, and thus relate those two to organic agriculture and production.

In such situations, it is worth using Brueckner-Irwin, Armitage and Courtenay (2019). They defined four dimensions of social-ecological well-being and sample attributes: material (income, assets, shelter, food, access to resources), relational (relationships of affection, relations with the state, social institutions, rules and norms that dictate access to resources), subjective (values, beliefs, satisfaction, self-identity, spirituality). The last dimension is ecological. The authors give here attributes such as biological diversity, modularity, openness, reserves and capital. One should also agree with the need to thoroughly identify purchasing behaviors of organic goods consumers, indicated by Freyer, Bingen and Paxton (2014). International Federation of Organic Agriculture Movements (2009) indicates that the possibility of organic farming functioning requires major changes in society.

2. Data Used in the Analysis

In order to search for the relationship between QoL, economic situation and attitude towards organic agriculture and modern agriculture, we used data from the EUROSTAT, the Euro-barometer survey (European Commission 2013; European Commission 2018) and the IFOA data collected by FIBL (2020). During the description of the results, we provided the data sources in detail. EUROSTAT and IFOA provide aggregated data for countries or regions. Whereas, Euro-barometer data relate to the individuals' subjective assessments of all Europeans participating in this panel study.

During the analysis, we used, in addition to descriptive statistics, frequencies, linear ordering method and correspondence analysis.

Frequency calculation is most often used in analyzing conjunctive questions. These types of questions are included in the Euro-barometer's questionnaires. We calculated the frequencies by referring to the number of options selected by all respondents. Łobocki (1975) indicates that calculating the frequencies of answers for this type of question allows to indicate the hierarchy of these answers.

Linear ordering method allowed us to make a ranking of objects due to the set of characteristics of the research problem. Balicki (2013) points out that in linear ordering, the measurement of diversity should characterize how much, on average, one object is better (or worse) than another due to variable values. We used the Hellwig's method in the study, not the widely used TOPSIS method. In Hellwig's method (Hellwig 1968), the ordering synthetic measure results from the relation between the distance of object to ideal solution and the interval of variability of all the distances between objects and the ideal solution. Based on the differences in the level of the Hellwig's ordering synthetic variables, we determined four classes of objects, based on the mean and standard deviation. This classification guarantees the greatest possible diversity of objects values from different classes and the smallest possible diversity of objects in the same classes (Nowak 1990).

We used correspondence analysis to achieve the goal of the study, which was to check the relationship between the subjective assessments of quality of life, financial situation, and attitude to sustainable agricultural production. This method has been widely described in the literature: in many publications by Greenacre (e.g. 1984, 2010), as well as those by Backhaus *et al.* (2003), Blasius (2001), Heijden (1987). Using correspondence analysis, it is possible to examine the relations between the categories of non-metric variables. The result of this method is an indication of the groups of coexistent categories and their graphic presentation. In our study, we used the correspondence analysis for a concatenated and multiway contingency table.

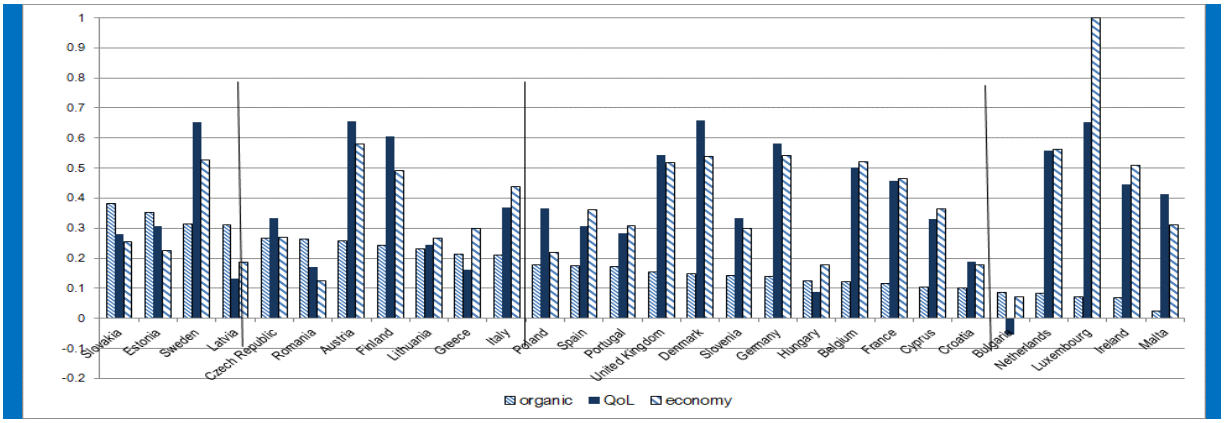
This article does not present algorithms of conducting analysis using the selected methods, as they are discussed in detail in the cited literature (we gladly provide information on the algorithms of these methods).

3. The relationship between economic conditions, quality of life and organic agriculture

We used data from years 2013 and 2018 to check how the relationships between economic conditions, quality of life and organic agriculture change over time. In those years only the indicator of subjective assessment of the quality of life was published by EUROSTAT. The economic situation of countries was assessed on the basis of: GDP per capita, the final consumption expenditure and the final consumption expenditure of households. We assessed the socio-economic situation from the point of view of citizens, which is why we chose the variables related to the individuals: the annual net earnings, the median equalized net income, the income quintile share ratio S80/S20 for disposable income, the inability to afford a meal with meat, chicken, fish (or vegetarian equivalent) every second day, the inability to face unexpected financial expenses, the rate of people at risk of poverty or social exclusion, the satisfaction with financial situation, the overall life satisfaction, the unemployment. Whereas the variables describing the status of organic agriculture came from EUROSTAT and IFOA: the organic area as a share of total farmland, the rate of organic retail sales per capita, the rate of organic producers in organic importers, the size of organic area per organic processors and the size of organic area per organic producers.

After the normalization of variables and the application of the Hellwig's method, we obtained the order of countries in three areas (organic, QoL, economy). The results are presented in Figures 1 and Figure 2. The highest values present the best levels of the analyzed phenomenon. On both figures, a vertical line indicates the division of countries into four classes due to the obtained assessment of the level of organic agriculture.

Figure 1. Results of Hellwig's ordering in three areas in 2013

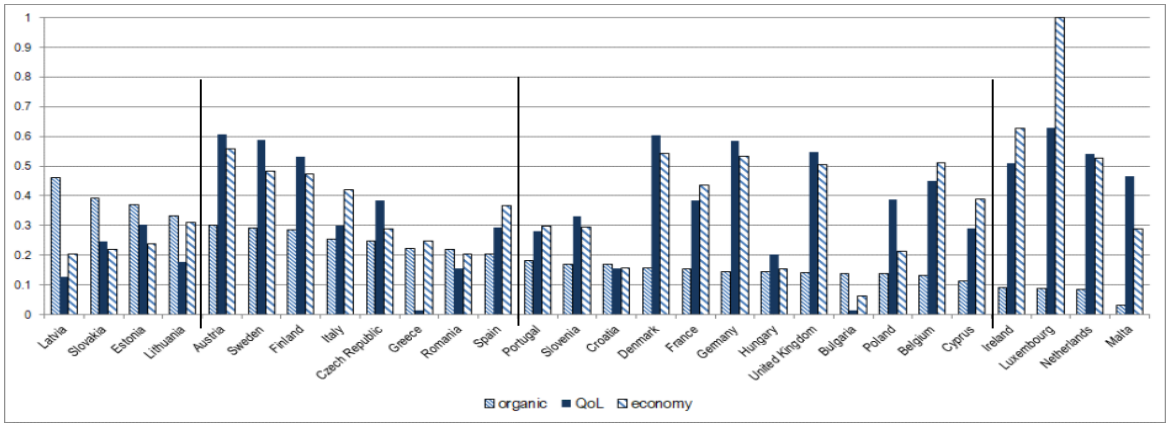


Source: Own calculations using data of EUROSTAT and FIBL (2020).

In 2013, the highest level of organic agriculture was observed in Slovakia (Figure 1). The lowest in Malta. It should be noted, however, that countries with a lower area of the country are less likely to provide domestic organic production compared to countries with the largest area, *i.e.* Poland, France or Germany (and such assumptions were made during variables selection, *i.e*. we chose variables that mainly determine the involvement of domestic producers in individual countries in organic agriculture). In countries where QoL was rated the highest, there are countries in which organic agriculture was qualified to the second group (Austria, Sweden, Finland), as well as third (Denmark, Germany, UK) and the worst (Ireland, Netherlands). Attention should also be paid to Bulgaria's assessment of QoL. The synthetic measure in the Hellwig's method, can take a negative value for an object for which the values of variables significantly more differ from the ideal solution than other objects, and when the number of objects is large.

In 2018, Austria, Sweden and Finland where QoL and economic situation were rated better than in Latvia, Slovakia, Estonia, Lithuania, the level of organic agriculture was rated low (Figure 2). So, in first group of the highest organic agriculture level are countries with low level of QoL and Economic situation. In countries included in the last group in terms of organic agriculture, a very high level of QoL and economic situation can be observed in turn. As in 2013, the second group in terms of the assessment level of organic agriculture were included countries with one of the highest QoL levels, namely Austria, Sweden, Finland. The third group with very low organic agriculture ratings also includes countries with a high QoL index and high assessment of the economic situation (Denmark, Germany, UK).

Figure 2. Results of Hellwig's ordering in three areas in 2018



Source: Own calculations using data of EUROSTAT and FIBL (2020).

On the basis of the Hellwig's method, we also assessed what changes occurred in the hierarchy of ratings achieved by individual countries.

The position of Poland in terms of organic agriculture in 2018 was 10 positions worse than in 2013 (positions 22 and 12 respectively). In contrast, the largest increase in the organic agriculture rating was recorded for Croatia: 23rd place in 2013 and 15th place in 2018. Despite these changes in the ranking, both countries were included in the third groups (in 2013 and 2018).

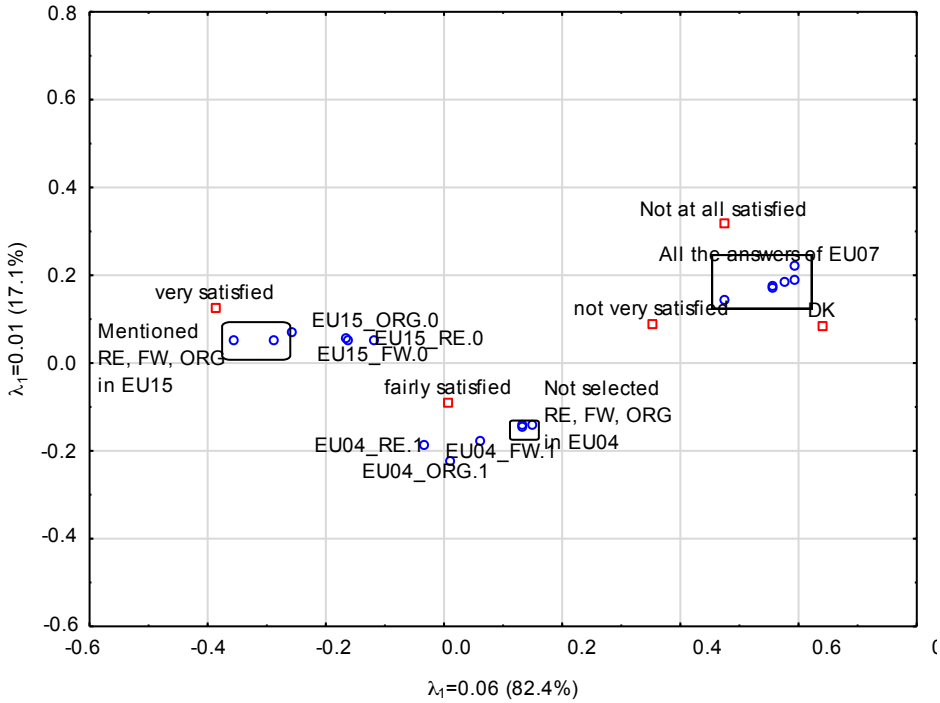
4. Subjective Assessment of Europeans towards Organic Agriculture and Modern Agriculture

To realize the goal of the study, which was to check whether Europeans understand the importance of sustainable agriculture development and the benefits of organic agriculture, we used data from the Euro-barometer. From the Euro-barometer survey, we selected some respondents' assessments regarding the analyzed problem and we presented them divided into three groups of EU15 countries – countries that formed the European Union before 2004, EU04 are the countries that joined in 2004 and EU07 countries that joined the EU in 2007 and later. These groups of countries differed in awareness of individuals regarding organic food and threats arising from agricultural production. Countries that joined the EU since 2004, and in the 1990s underwent economic transformation, faced equalization of opportunities in many areas of life and functioning of the state compared to countries of the key 15. Addressing the increase in ecological awareness of the inhabitants and focusing on the development of organic agriculture, were problems postponed for the future. Consumer behavior in these countries and growing international competitiveness have changed attitudes. For example, in Poland, the development of organic farming did not take place until 1999 when organic farmers received state subsidies and applicable legal regulations.

In Euro-barometer 90.2, autumn wave 2018, Europeans' opinions on many aspects of the functioning and future of the European Union were examined. The survey also asked respondents about issues related to environmental protection and agriculture. Question QA1 (we left the original numbering of the questions) contained in Euro-barometer 90.2 concerned issues described the ideal future for the European Union. By calculating the frequency of responses, taking into account the possibility of indicating two aspects, we have identified the most and the least important factors for the Union in the future. For Europeans from the three groups of countries, issues related to organic agriculture were not mentioned as the most important. Reduction in food waste (FW) within the European Union was indicated by 6.7% of EU15 residents, 6.3% from EU04 and 5.3% of citizens of the shortest time belonging to the EU. The problem of increasing of organic agriculture (ORG) within the European Union as important for the Union in the future indicated 4.6% of the EU15 members, 4.3% of inhabitants of the countries joined to the Union in 2004 and 5% of EU07 citizens. Increased use of renewable energies (RE) within the European Union is also important for the development of sustainable agriculture. This problem, as important for the future of the Union, was more often mentioned by the inhabitants of the EU-15 than EU04 and EU07, respectively 9%, 5.6% and 5%. Europeans have unanimously identified as the most important issue in the EU in the future Equal wages for the same job across the European Union.

Then we checked how these three factors (FW, ORG, RE), which should to characterize the EU in the future, are related to the assessment of respondents' satisfaction with life. For this purpose, we used correspondence analysis. The results are presented in Figure 3.

Figure 3. Relationship between reduction in food waste (FW), increasing of organic agriculture (ORG), increasing of renewable energies (RE) and satisfaction with life



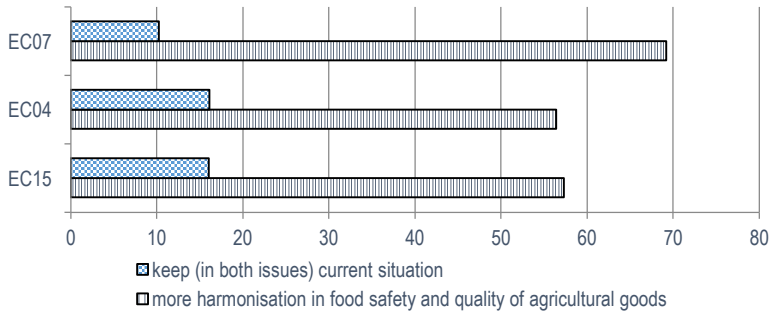
Source: Own calculations using data of European Commission (2018).

Figure 3 shows that the citizens of EU15 countries most often indicated the need for reduction in food waste, caring for increase of renewable energies sources and of organic agriculture. At the same time, they indicate that they are very satisfied with life. The opposite is true in the group of countries that joined to the EU in 2007. Inhabitants of the countries joined to the EU in 2004, who also indicated the need to pay attention to the three analyzed problems (RE, FW, ORG) in the future in the EU, are fairly satisfied with life.

For the proper development of organic agriculture in the EU, it is important whether Europeans want to harmonize the conditions affecting the food safety and quality of agricultural goods. Inhabitants of three groups of countries clearly indicate that the EU should introduce harmonization between European Union countries to improve the food safety and quality of agricultural goods (see Figure 4).

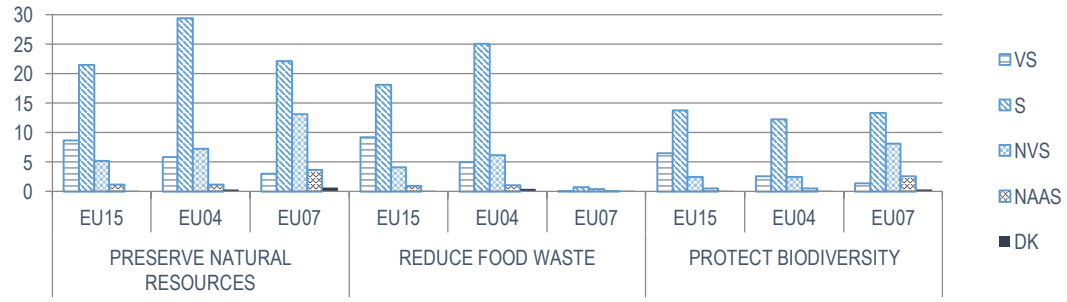
The Euro-barometer 90.2 survey also made it possible to identify what Europeans consider the most important for environmental protection. We compared these results with life satisfaction (VS – very satisfied, S – fairly satisfied, NVS – not very satisfied, NAAS – not at all satisfied, DK – don't know) – Figure 5. We chose three elements most related to sustainable development of organic agriculture. In all countries, preserve natural resources was indicated as an environmental protection activity by people satisfied with life from all countries. Similarly, for the action of protect biodiversity. In the case of reduction of food waste should be noted a much lower share of the indications of this action to protect the environment in the countries which are the most recently joined the EU compared to the other 25 EU countries.

Figure 4. Assessment of harmonization to improve the food safety and quality of agricultural goods



Source: Own calculations using data of European Commission (2018).

Figure 5. Actions to environmental protection vs. life satisfaction



Source: Own calculations using data of European Commission (2018).

Based on the results obtained from Eurobarometer 80.2 from 2013, it is possible to determine how the inhabitants of the European Union assess co-financing and support in developing modern agriculture while maintaining the principles of sustainable development.

Based on the QB1 question, information about how important are agriculture and rural areas for future of the Europeans was obtained. In all three groups of countries, Europeans have indicated (in almost 100%) that this is a very important subject for their future. Because we indicated the financial situation of individuals as an important reason for choosing organic goods by consumers, we checked whether it affected the assessment of significance of agriculture and rural areas for the future of Europe. Regardless of whether the respondents have financial problems or not, they indicated that this will be a very important (over 50%) element of EU policy in the future. The situation is similar when the opinion on the factors related to organic agriculture and environmental protection will be assessed through the prism of life satisfaction. In all EU countries, regardless of whether the residents are happy or dissatisfied with life, they indicate that agriculture and rural areas are very or fairly important for future of the Europeans.

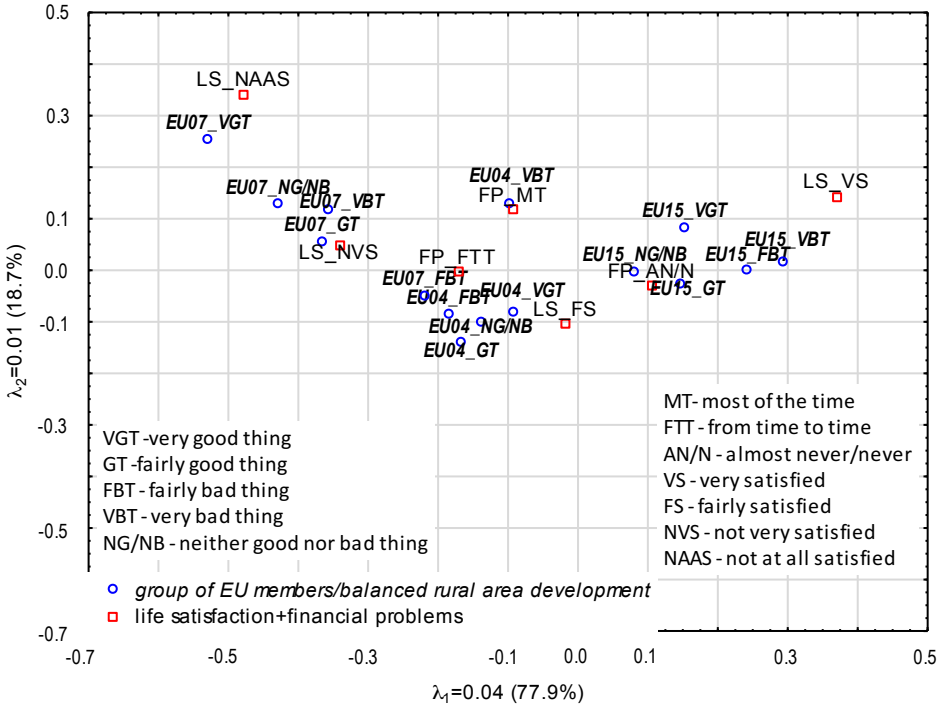
We then asked the question, if Europeans consider agriculture and rural areas to be important, how do they assess the common agricultural policy and EU subsidies for agriculture? We linked their assessments with the assessment of life satisfaction and financial situation.

In all EU countries (based on question QB3), respondents have heard about the support policy of the EU for farmers through its Common Agricultural Policy (CAP) but they didn't know the details of this policy. In the EU-15, 60% of the inhabitants know that the EU operates a CAP, 67% declare knowledge of CAP in the countries that joined the EU in 2004, and 59% in the three other countries. Common Agriculture Policy (based on QB4 question) is oriented in such a way as to guarantee the food supply for Europeans, to develop rural areas in the EU in a balanced way, to give support to farmers in a fairer and more targeted way, to support young farmers, among others, to link financial aid to farmers whose follow practices that benefit the environment. From the point of view of achieving the research objective, it is important to check whether there is a relationship between assessments of developing rural areas in the EU in a balanced way, of financial aid to farmers whose follow practices that benefit the environment and with life satisfaction or financial condition of the households. The results are presented in the Figures 6 and 7 (correspondence analysis was used).

Based on the associations presented in Figure 6, we found that EU07 residents who believe that developing rural areas in EU in balanced way is very good think, are not at all satisfied with life. People from this group of countries who believe that this EU policy is fairly good thing, very bad thing or neither god nor bad are not very satisfied with life. Citizens of countries that joined the EU in 2004 and are most of the time in financial trouble believe that EU policy on balanced rural area development is a very bad thing. The location of points presenting all opinions (positive and negative) in EU15, between points illustrating very high life satisfaction and almost never financial problems, indicates that, compared to other countries, life satisfaction and lack of financial problems is for the residents of EU15 related to all opinions on topic balanced rural area development.

When analyzing the location of points in Figure 7, similar conclusions can be drawn as in Figure 6. However, some clearly defined associations should be indicated. EU15 citizens who believe that financial aid to farmers whose follow practices that benefit the environment is a very bad thing are very satisfied with life. Fairly satisfied with life are citizens of the countries joined to the Union in 2004, who believe that financial support for farmers is a very good thing. Not at all satisfied with life are members of EU07, who declare that financial aid to farmers is very good thing ore neither god nor bad.

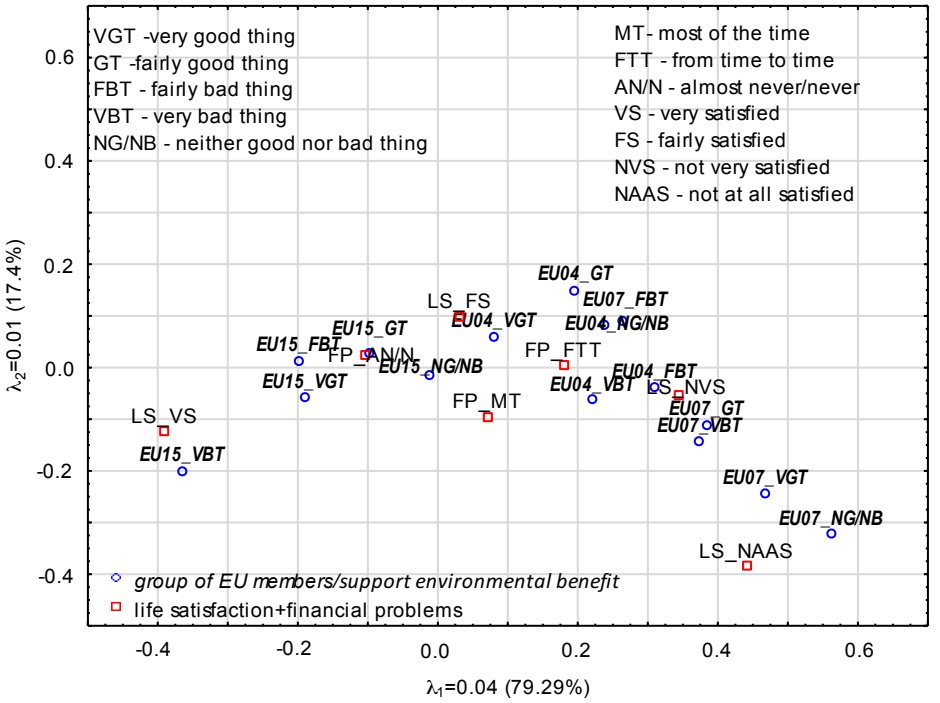
Figure 6. Relationships between balanced rural area development and life satisfaction (LS) or financial problems of households (FP)



Source: Own calculations using data of European Commission (2013).

Regardless of the country's accession to the EU, respondents indicated that the most important reasons for maintaining agriculture in all parts of the EU (based on question QB6) are in the order benefits for society, through the production of safe food and standards ensuring respect for the environment and animal welfare, contribution to the economy in rural areas, protection and enhances the environment. All these factors determine the production of high-quality organic food and goods.

Figure 7. Relationships between financial aid to farmers and life satisfaction (LS) or financial problems of households (FP)



Source: Own calculations using data of European Commission (2013).

Conclusion

In the study, we confirmed the conclusions made by Butler and Oluoch-Kosura (2006), that the level of well-being and economic services varies widely across countries. Policies, legislation and support for environmental activities are also very diverse. Awareness, knowledge and joint actions are necessary to increase the importance of organic agriculture, and as a result to protect the environment and ultimately increase well-being in both human and individual subjective terms. Our study shows that, taking into account aggregated indicators for organic agriculture, these indicators are not positively correlated with aggregated factors describing QoL and the economic situation of EU countries. According to our survey, this tendency persisted in the analysed periods. This is particularly visible in 2018, where the best class in terms of organic agriculture was created by four countries with a low QoL index. The relevance of using the Hellwig's method in this fragment of the study should also be indicated. Summing up this part of the study, one should agree with Villamagna, and Giesecke (2014), who say that lowering the level of well-being may result in a departure from the protection of natural capital in favor of financial benefits.

An analysis of the subjective assessments of Europeans did not show very large differences in the assessment of organic farming, environmental protection and CAP. Taking into account life satisfaction or financial problems of residents of three groups of EU countries, we have indicated that they assess in similar way the problems related to the growing importance of renewable energy and organic agriculture as well as the reduction of food waste. They consider that these are not the most important areas of EU policy. However, limiting the analysis to these factors only, we pointed out that EU15 residents are more interested in how to solve these problems in the future. By assessing developing rural areas in a balanced way and financial support to farmers, we obtained confirmation of the indicated situation. Residents of EU07 indicated that they are dissatisfied with life regardless of whether they assessed both, the EU policy on the developing rural areas in a balanced way and financial support to farmers as important or unnecessary. Summarizing the analysis of subjective assessments of Europeans regarding organic agriculture, we would like to point out that the methods used enabled a detailed analysis of the problem.

In the study (using both aggregated and individual data), we obtained confirmation of the thesis that a better financial situation and a higher quality of life imply a positive attitude to activities related to the idea of organic. Thus, according to Butler and Oluoch-Kosura (2006) we want to indicate that the activities of individuals performed only in their close environment have an impact on the ecosystem services. However, it is smaller compared to the one resulting from operating on a local, regional and global scale. These authors also indicate the impact of impoverishment of ecosystem services on human well-being. In addition, people operating on a local, regional and increasingly global scale have a significant impact on the availability and quality of ecosystem services. Increasingly, human activities have long-range effects on other people, their culture, behavior and socio-economic situation.

Although there are many publications on organic agriculture, only some of them contain references to social well-being, quality of life or poverty. Promoting the idea of organic lifestyle and organic agriculture along with the dissemination of relevant information, will increase public awareness of the dangers caused by unrestrained growth in the use of artificial chemicals and the unlimited growth of conventional production.

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