THE SUSTAINABLE DEVELOPMENT OF ECONOMIC ENTITIES AND ITS SIGNIFICANCE IN REDUCING THE IMPACT ON THE ENVIRONMENT

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ABSTRACT

Economic entities influence the environment significantly. Economic activity in the EU lacks skills, experience and financial and management tools. Innovation is a key element of sustainable economic activity, but economic activity needs a complex approach to cover economic, social and environmental aspects. The most common measure for environmental improvement is the reduction of energy and material consumption. This article analyses the development of economic entities using the Innovation and Small Business Act (SBA) approach. The research objective is to analyse how economic entities in EU countries develop their activities to achieve sustainability by reducing their environmental impact. A comparison of the sustainability aspects of economic entities was carried out. The contribution of innovations was analysed to assess the level of sustainability of economic entities in EU countries. The results show that the impact of the activities of economic entities needs to be assessed along the entire value chain, which assesses the social environment of economic entities. EU countries such as Finland, Germany, Slovenia and Sweden are leading the way in investing in innovation and sustainability measures. However, EU countries face challenges in implementing sustainability goals, because of the complexity of the system and a lack of attention from responsible institutions. Nevertheless, innovation is essential to reduce negative environmental impacts.

KEY WORDS: *sustainable development, sustainable skills, environmental performance, environmental footprint, innovations, economic entities, SME.*

JEL CODES: O1, Q56.
DOI: https://doi.org/10.15181/rfds.v45i1.2700

Introduction

Business companies are using more often the sustainable development (SD) paradigm to prove their 'green' and environmentally friendly activities. However, 'green' matters are sometimes just product labels, and are far from true sustainability. Eco-labels are a vital instrument in green marketing, but they sometimes fail to reach customers due to a lack of appropriate information (Galil, 2013). Eco-labels may seem just a logo, but their responsibility is much greater, as they reflect the image of the product (Amos, 2014). Eco-labels cannot inform customers properly, because consumers are sceptical about the marketing of green products, do not understand the concept of eco-labels, and have had bad experience of misleading eco-labels, so they lack confidence in eco-labelling. Therefore, it is vital to know which eco-labels are functioning properly in the market (Sharma, 2019). To increase the assurance of eco-labels, education plays a significant role. Better-informed consumers are more likely to trust eco-labels (Teisl, 2008). Today the information is accessible to everyone; however, most consumers make choices by emotions, but lack basic ecological knowledge (Rickinson, 2001). Nevertheless, threats to the natural environment are one of the most pressing social issues nowadays (Clayton, 2005). There is a risk in using green economy terminology because this concept replaces the concept of SD; however, because it is a ready-made model, it has to be a supportive mechanism (Adamowicz, 2022).

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Therefore, sustainable education changes the way of thinking and improves the quality of life, so learning is necessary for future generations (Jančius, 2021). The theoretical knowledge of sustainable development is necessary for practical applications, which impact teaching approaches to achieve sustainability and develop a love of nature at an early age (Mahat, 2016). Education in sustainable development improves skills, which helps to ensure environmental protection, promote social equity, and increase economic sustainability (Erkal, 2013). Consumer awareness is a prerequisite for the better dissemination of good sustainable practices. One of the principles of providing sustainable or green products to consumers is to give as reliable information as possible. There are many options to encourage consumers to choose a sustainable form of activity. It can be a legal regulation or education to increase consumer awareness. It is worth mentioning that, for example, green advertising increases customer awareness of organic goods and their trust in eco-labels, because consumers evaluate organic goods based on organic product details and eco-labels (Lavuri, 2022). It has been noted that eco-labelling influences consumers, and governmental and institutional regulations, where each stakeholder influences others (Prieto-Sandoval, 2016). Eco-labels are an environmental management tool which provides visual information to customers (Thøgersen et al., 2010). However, a company can attain positive sustainable results and get recognition from consumers by implementing eco-labelling. It provides the opportunity to improve environmental performance (Prieto-Sandoval, 2016). However, eco-labelling should not be misleading. It must be a reliable source of information for the consumer to make appropriate purchasing decisions (Noussair, 2002). The problem is that the number of eco-labels on the market has increased to more than 450 in recent decades (Delmas, 2017). Therefore, consumers often do not know the meaning of a particular eco-label, and about 40% of United Kingdom residents state that they do not know its meaning (Durnal, 2018). So sometimes products with ‘environmentally friendly’, ‘natural’, ‘low energy’ and other similar labels appear on the market which have nothing to do with the environment or sustainable development. Therefore, this leads to the deterioration of the green value, because products with unreliable eco-labels do not meet the requirements of environmental standards (Szabo, 2021). Even though developing a common single eco-label is difficult, complex indicators are usually used in practice. One solution is to use the environmental footprint tool. It evaluates the impact on the environment using the life cycle assessment (LCA). It is worth mentioning that the high number of eco-labels in the market causes confusion among consumers; therefore, the European Commission (EC) recommended common methods based on the LCA, which was developed by the EC Joint Research Centre using ecological footprint (EF) methodology (Flagstad, 2022). The EF method presents easily understandable results, where values can be comparable. The research objective is the analysis of the formation of sustainable skills of economic entities and their importance in reducing negative environmental impacts. The research methodology covers the evaluation of sustainable economic activities, systematising the significance of sustainable problems, and the measures and skills to reduce the environmental footprint of economic entities.

1. Eco-labels and their practical applications

Labels inform consumers about the environmental, social and economic benefits. The UTZ/Rainforest certificate, for example, shows responsible and sustainable practices for protecting rainforests, their soil, and wildlife. The Fairtrade International (FLO-CERT) certificate shows business social responsibility and SD attitudes. Stakeholders with FLO-CERT labels prove that they do not use child labour or other unauthorised working methods, avoid hazardous chemicals in production, and care for the social and economic aspects of producers in developing countries throughout the entire production and supply chain. Economic entities in the agricultural sector usually use eco-labelling to promote organic farming, and to ensure the functionality of the supply chain to reduce the carbon footprint throughout the LCA (Miranda-Ackerman, 2017). One of the goals of EU food policy is to protect the geographical origin of specific products with the promotion of the unique characteristics of products, and to assure the traditional form of economic activity (Palková, 2021). It has been noticed that there is increasing demand in the EU not only for organic products but also for products with specific characteristics and produced in a specific geographical area (Hajdukiewicz, 2014). Products which have not only eco-labels but also have geographical identification and protected designation of origin labels, and a label indi-

cating the traditional production activity, usually have higher prices than similar products of the same category. However, these labels generate additional costs for producers related to applying the rules, methods, control and marketing costs (Hajdukiewicz, 2014). The aim of the European Commission's Green Deal policy is to develop sustainable economic and ecological activities, and reduce environmental impacts, by implementing environmental and management standards. The measures of the Green Deal also aim to achieve the sustainable development goals (SDGs). Economic entities usually seek to achieve the SDGs by implementing activities according to ISO and EMAS schemes. However, these standards are voluntary instruments, and are usually used by economic entities to comply with the requirements to be officially registered and listed on the Stock Exchange (Testa, 2014). The EMAS system, approved in 2009, voluntarily has a similar approach to the ISO standard, but with higher requirements. Companies have to demonstrate compliance with environmental legislation and provide information on significant environmental aspects to the public. The main aim of ISO 14001 is to reduce the consumption of raw materials and energy by improving management efficiency and increasing the awareness of employees. These standards are the most important indicators of the environmental performance of an organisation's activities so far. Since compliance with EMAS requirements demands relevant changes in economic activities and employee behaviour, learning a new skill is an important determinant of the ability of EMAS to generate improvements in environmental performance. Economic entities have to change their economic activities, and employees have to change their behaviours, according to ISO and EMAS requirements. So new skills and learning practices are important components for improving environmental performance by applying EMAS and ISO requirements (Testa, 2014).

The advantages of EMAS are obvious, as they help to reduce the negative impact on the environment, save resources, and develop a positive image for organisations. However, according to the European Commission, about 23% of organisations do not understand the benefits of EMAS, and the development of these standards has not justified the investment. There are only 1,187 EMAS-certified organisations in Germany, 1,023 in Italy, 977 in Spain, 264 in Austria, 66 in Poland, six in Luxembourg, and only five in Lithuania (European Commission, 2021). Latvia and the Netherlands do not have any such companies, and only 121 organisations in the EU were awarded the certificate in 2021. The reasons why EMAS and ISO standards are not popular include the high implementation costs, the system's complexity, the lack of attention from responsible authorities, and the high level of bureaucracy. The main obstacles are the complex integration into existing management and administration systems, and high administrative and implementation costs (Santos, 2011). However, EMAS is considered to be a higher-quality standard, and therefore better results are achieved in the long term, while ISO is more effective in the short term (Preziosi, 2016). Therefore, companies usually look for other ways to convince consumers to take care of nature and the environment, and to increase profitability and demand. One option is to use simpler evaluation systems that provide similar results for quality and management standards but pursue the same goals, i.e. focused on reducing the impact on the environment, saving resources, and improving efficiency. These systems also provide product labels that justify green production, but using a simplified evaluating system (Van Amstel, 2008). However, these alternative green labels are not reliable, because they provide limited and not officially validated information (Van Amstel, 2008).

In 2013 the European Commission (EC) published documentation for evaluating the product environmental footprint of products (PEF) and the organisation environmental footprint (OEF). These methods are based on LCA methodology, and provide reliable information (Zampori, 2019a). PEF and OEF methodologies have been tested in practice since 2013, going through the pilot phase for evaluating different types of activities and products (Zampori, 2019b). The PEF and OEF methods are important because: (1) ecosystems are shrinking; (2) biodiversity loss is increasing; (3) initiatives for different environmental evaluation methods are widespread; (4) a common definition of a green product is lacking; (5) unnecessary costs due to the need to comply with different sustainability standards are increasing; (6) unreliable information about ecological products is increasing but demand for these products is growing; and (7) the environmental and economic benefits of ecological products are nevertheless proven (European Commission, 2013). The PEF and OEF methods became an instrument next to the Eco-label and the Eco-design Directive to address the environmental impacts of products and economic activities. The PEF/OEF methodologies are closely related

to ISO and EMAS standards, but have specific elements, such as: (1) the ability to evaluate the specific product or the same type of product group; (2) the PEF uses more than 14 impact categories for anthropogenic and natural environment analysis; and (3) it is able to provide comparative information. However, the PEF/OEF methods need to meet agreed LCA requirements at an international level.

2. Data and methods

A complex sustainable approach was used for the evaluation of the economic activities and the formation of sustainable skills. Operational, management, production and financial activities receive more attention from customers and financial institutions if they are managed using ISO, EMAS, or other sustainable standards. Usually, the SDGs and sustainable brand (SB) indices are used for the evaluation of economic sustainability. These values are later incorporated into the CSR (corporate social responsibility) and ESG (environment, social, governance) reports. To improve overall sustainability, it is not necessary to modify infrastructure. The most important thing is to find and improve weak points that significantly increase overall sustainability (Hendiani, 2020). Nowadays the sustainability approach is crucial for defining the long-term development strategy of economic entities. Effective institutionalisation of CSR and ESG policies is necessary to ensure sustainable business practices in their upstream supply chain and protect against market loss in the case of sustainability problems (Grimm, 2022). A positive and higher sustainability index increases revenue; therefore, the environmental performance of the sold goods is essential. Sustainability analysis helps to explain complex systems and evaluates the impact on the environment using simplified methods, and at the same time helps to enhance sustainable economic activities (Majewski, 2013). The integration of sustainable development principles into economic activities improves social responsibility. It also improves the efficiency of energy and resource usage, including the reduction of CO_2 and GHG emissions, and the reduction of water consumption and waste amounts. The achievement of companies' SD strategies can be evaluated through the analysis of SDGs and sustainability indices, including the EF and SB index.

SDGs and integrated sustainability indices are useful for evaluating the sustainability of economic activities (Lafortune, 2018). The sustainable indices can show the economic and social dimensions of EU countries. EU countries are split into two groups, with rich and poor approaches to sustainability (Cling, 2019). So far, there is no single indicator for assessing the social sustainability of economic activities, and there is a need to develop an appropriate indicator that can evaluate the supply chain and economic activities (Sannou, 2023). In this research, the old EU 14 and new EU 13 member states were analysed. Many economic entities in EU countries are struggling to identify their strategies towards to pursue the SDGs, but they usually have a clear vision of how to become sustainable companies. However, SDG reports are considered mainly as a social development instrument (Hatayama, 2022). If the company is not ready to provide the data to external stakeholders, economic entities can still use the EF index to evaluate their internal data (Halsz, 2005). Sustainability reports usually evaluate the influence of products or economic activities throughout the value chain and provide social information (Hatayama, 2022). The sustainable reports provide guidelines for economic the development of entities, including the evaluation of prosperity, innovation, and digital and global sustainable business. The strategy of the Small Business Act for Europe (SBA) is a framework for the sustainable development of economic entities which corresponds to 11 principles for sustainable business development (Pedraza, 2021). The first principle, called 'Entrepreneurship', measures the early stage of economic activities. The second principle, called 'Second chance', describes the time and cost of activities and the fear of failure rate. The third and fourth principles are merged into a single dimension, and have a 'Think small first' definition. They reflect the administration problems of economic activities, and describe problems in the legislation administrative procedures, and government regulations. The fifth principle describes the pros and cons of state aid and public procurement policies. The sixth principle evaluates access to finance problems. The seventh principle evaluates single market indicators. The eighth principle measures skills and innovation indices. The ninth principle measures environmental impacts. The tenth principle describes the internationalisation of economic entities. Sustainable activities increase the chances of success, and innovative products

increase competitiveness, but it is worth mentioning that only half the newly established SMEs survive in the first three-year period (Burns, 2022). It is also worth mentioning the framework of innovation principles that is evaluated using the Global Innovation Index (GII) (https://www.wipo.int). The main prinicples of the GII are based on input and output indices. The input sub-index includes the following resources: (1) involvement of institutions; (2) human and capital research aspects; (3) the level of existing infrastructure; (4) market readiness; and (5) business readiness to accept innovations. The output sub-index includes the following categories: (1) knowledge and technology output; and (2) creativity output. In general, the GII is a tool that helps predict the spread of new ideas and know-how, develop new processes and technologies, and evaluate influence in the future. It is also used to compare the GII of other countries (Oturakci, 2023).

3. Results

The values of SBA indicators of EU countries in the period 2008 to 2020 are presented in the table below. The values of each country are compared with the average EU value. The results obtained are presented in the table below.

Table 1. The distribution of values according to SBA policy in the EU in the period 2008–2020

	Distribution in percent of SBA principles among EU countries									
EU country	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Austria	28	**83**	**83**	53	76	66	42	48	38	37
Belgium	56	**90**	**84**	53	78	67	41	46	41	38
Denmark	36	**87**	**83**	53	73	66	37	33	43	38
Estonia	45	**87**	**83**	51	73	66	40	43	38	36
Finland	67	**92**	**86**	53	**84**	74	39	47	37	37
France	72	**94**	**86**	54	75	73	45	44	43	36
Germany	**87**	**98**	**88**	55	**90**	79	43	47	40	36
Italy	**81**	**96**	**88**	54	**86**	78	48	48	43	35
Latvia	73	**94**	**88**	51	**84**	78	48	31	43	38
Lithuania	30	**83**	**83**	51	68	66	44	48	43	38
Luxemburg	53	**88**	**85**	36	57	69	40	31	34	36
Netherlands	**85**	**98**	**87**	53	**82**	74	47	31	41	36
Poland	67	**92**	**86**	55	**82**	74	41	47	41	38
Portugal	54	**90**	**86**	53	**83**	73	47	48	43	37
Romania	54	**90**	**83**	46	59	66	43	47	43	38
Slovenia	**88**	**98**	**88**	48	79	79	43	48	38	38
Spain	**88**	**98**	**88**	54	79	79	49	48	43	38
Sweden	72	**94**	**87**	53	**82**	76	46	48	43	35

Source: Pedraza, 2021.

Analysing the data presented in Table 1, it is worth mentioning that Lithuania has an almost EU average value. The analysis of the Lithuanian SBA index is described as follows. The value of the third principle 'Think small first' (83%) shows the government support index in the initial phase of starting economic activity. It gives effective and in-time support for new and growing economic entities, and decreases the number of procedures. However, the value of the fourth principle shows that access to finance (51%) is slightly above the EU average value. It is worth mentioning that the value of the first principle in Lithuania is the lowest

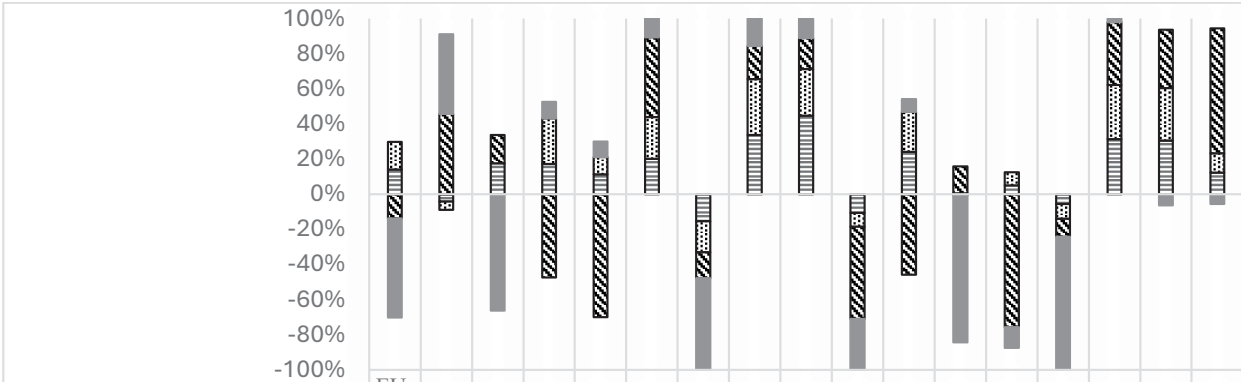
among EU countries. Therefore, this means that there are insufficient measures for the early stage of economic activities, and the intention to start a business is low. Even though economic entities have ICT and R&D skills, the innovation and skill value (44%) is below the EU average. So it is no surprise that the principle of digitalisation (38%) is quite below the EU average. It proves that the rate of using websites or IT apps for sale and the percentage of individuals who use programming language is low. Analysing the indices of other EU countries, it is worth mentioning that the most common is the second principle 'Second chance' and the third principle 'Think small first'. This means that government institutions, with the support of EU financing mechanisms, contribute to the development of start-ups, and also pay attention to the development of know-how ideas. That leads to the notion that SMEs are willing to invest in their financial efficiency through implementing know-how ideas that are usually interconnected with innovation and energy efficiency measures. Also, it is noticeable that Finland, Germany, Italy, the Netherlands, Spain, Slovenia and Sweden are the leading countries in the EU in investing in innovation measures. Different innovation measures in these countries are distributed evenly among EU countries.

Looking at the statistical data of different types of SME, it is noticeable that 72% of SMEs in 2013 represented low-tech industry, and 28% represent high-tech industry (Performance Review, 2021). The development of innovations slightly reduced the percentage rate in 2020, but still, 69% of SMEs represented low-tech industry and 31% represented high-tech industry. The quantity of SMEs, number of employees and the value added generated are attributed to different types of economic activity. It is noticeable that the values are distributed between 30% and 70%, and are more or less at the same percentage level among EU countries in the year 2021 (European Commission, 2022), except for several countries, such as the Netherlands, Luxembourg and Sweden, where the percentage of high-tech industry represents 49.5%, 41.3% and 47% respectively, and low-tech industry represents 45%, 56.1% and 45.5%. The lowest rates of innovation measures of SMEs among EU countries were in Portugal, Bulgaria and Romania, where high-tech industry represented only 19.1%, 21.4% and 23.3% respectively.

Aspects of the development of innovation in SMEs are presented in the graph below. The following data in the periods 2016 to 2018 and 2018 to 2020 were analysed: the number of SMEs that completed innovation activities, the number of SMEs in abandoned and suspended innovation activities, and the number of SMEs with ongoing innovation activities. It was observed that the greatest numbers of suspended innovation activities were in Finland, Latvia, Austria, Poland, Portugal, Sweden and France. The increase in suspended activities was respectively 62%, 57%, 66%, 52% and 38%; therefore, the number of ongoing innovation activities decreased three times by 66%. Also, a similar tendency is noticed in Estonia, Luxemburg, France and Belgium, where the number of ongoing innovations decreased respectively by 41%, 46%, 37% and 23%. In Lithuania so far, the suspended innovation activity rate decreased by 32%, the number of ongoing innovation activities also decreased by 7%, and the overall number of SMEs with completed innovation activities increased by 3%.

Analysing data presented in the European Commission's report (European Commission, 2021), the results showed that France, Italy, Belgium and Sweden invest the most in the research sector, but the expenditures are different. The leaders are Sweden, Belgium, Austria and Germany, where expenditure in percentage per GDP are as follows: in Sweden 2.55%, in Belgium 2.53%, in Austria 2.22%, and in Germany 2.11%. Belgium, for example, has developed the pharmacy and life science sector. The innovation index is calculated according to Eurostat databases for environmental benefits due to innovation in enterprises (Eurostat, 2022b).

Environmental benefits are innovations which have been introduced to SMEs. Innovation indicators are types of measures which reduce energy use or the CO_2 footprint, reduce material or water use, reduce air, water, noise or soil pollution, facilitate the recycling of products after use, and extend product life through more durable products. The aspect number in columns represents the innovation influence on the development of economic activities of SMEs. The first aspect defines the energy use and CO_2 footprint reduction of consumption by the end user. The second aspect represents the reduction of materials or water use per unit of output. The third aspect defines the reduction of air, water, noise or soil pollution. The fourth aspect facilitates the recycling of products after use by the end user. The fifth aspect defines the replacing share of materials for own use. The sixth aspect presents innovative measures which improve environmental performance.



	EU-27	AT	BE	BG	DK	FI	FR	D	NL	EE	IE	LV	LT	LU	PL	PT	SE
Ongoing innovation activities	-20%	35%	-30%	7%	4%	6%	-58%	4%	3%	-44%	5%	-198%	-7%	-84%	2%	-6%	-2%
Suspended innovation activities	-5%	35%	7%	-36%	-31%	28%	-16%	5%	6%	-80%	-30%	36%	-47%	-11%	38%	33%	32%
Completed innovation activities	6%	-4%	0%	19%	4%	15%	-20%	9%	8%	-12%	15%	1%	5%	-9%	33%	29%	5%
Total SMEs	5%	-3%	8%	13%	5%	12%	-17%	9%	14%	-16%	16%	-2%	3%	-6%	34%	30%	5%

Graph 1. The distribution of innovation activities among SMEs in the period 2016–2020

Source: the author, according to Eurostat, 2024

The seventh aspect defines the reduction of energy use or the CO_2 footprint. The eighth aspect represents the replacement share of fossil energy with renewable energy sources. The ninth aspect presents innovation measures to the environmental benefits obtained by the end users. The tenth aspect is defined as an extended product life through more durable products.

Table 2. Environmental benefits of SMEs due to innovation (in %, 2014)

Country\ Aspects	1	2	3	4	5	6	7	8	9	10
Lithuania	19,7	15,0	**26,8**	10,2	13,6	**47,2**	**36,7**	*4,6*	**31,2**	10,8
Latvia	13,0	14,2	16,2	10,8	14,9	**37,2**	20,4	*2,9*	**28,7**	12,9
Estonia	19,3	18,2	13,7	10,2	16,7	**39,5**	**37,9**	**24,3**	6,8	**28,3**
Finland	**36,9**	**29,1**	**23,5**	**23,9**	**20,6**	**51,5**	**37,7**	12,10	**48,1**	27,3
Germany	**32,8**	**29,1**	**30,9**	18,5	**18,7**	62,6	**51,9**	15,7	**39,3**	18,1
Poland	14,5	15,2	14,0	*9,20*	12,30	31,5	17,7	4,40	**24,9**	13,3
Austria	29,0	**27,7**	**27,1**	16,6	**24,5**	**54,9**	**35,8**	14,7	**42,8**	**20,5**
Italy	22,3	**35,8**	**28,0**	13,8	**23,7**	**43,7**	18,5	19,4	15,7	18,0
Slovenia	**32,5**	**31,1**	**28,9**	17,1	**29,8**	**55,1**	**36,1**	**13,50**	**44,0**	**24,1**
Slovakia	14,0	19,2	18,7	10,7	10,4	**36,6**	19,6	4,50	**23,7**	11,6
Bulgaria	*6,4*	10,3	10,3	*7,1*	*8,9*	19,6	*9,3*	*2,9*	14,2	*8,2*
Portugal	22,1	**25,7**	27,3	28,7	25,1	**60,1**	**29,4**	*9,1*	**42,7**	**22,9**
Romania	*6,7*	*9,8*	14,9	*7,5*	*7,0*	23,3	13,4	*1,8*	17,2	*7,6*
Sweden	28,9	18,2	22,9	15,7	22,0	**46,9**	**28,6**	13,6	**39,9**	**20,8**

Source: the author, according to Eurostat, 2021.

The application of innovation measures which contributed to the environmental benefits obtained within economic entities (aspect 6) or obtained by the end users (aspect 9) and the reduction of energy use or the CO_2 footprint (aspect 7) were the most common among SMEs in EU countries. The percentage rate varies from 62.5% in Germany, 55.1% in Slovenia, and 60.1% in Portugal, to 47.2% in Lithuania, 37.2% in Latvia, and 39.5% in Estonia. The next indicator, the number of enterprises that reduced energy use or the CO_2 footprint (aspect/column 7), varies from 51.9% in Germany, 36.7% in Lithuania and 36.1% in Slovenia, to 20.4% in Latvia, 17.7% in Poland, 13.4% in Romania, and 9.3% in Portugal. However, SMEs in EU countries have also invested in the reduction of energy use or the reduction of the CO_2 footprint of consumption by the end user (column 1). Here, the leaders are SMEs in Finland (36.9%), Germany (32.8%), and Slovenia (32.5%). This may be related to specific climatic conditions (e.g. Finland), intensive energy (Germany), and responsible governmental support. However, SMEs in Bulgaria and Romania invest the least (6.4% and 6.7% respectively) in these measures. The reason may be insufficient management and a lack of government attention and support. The next aspect is the reduction of material or water use per unit of output (column 2), and the reduction of air, water, noise or soil pollution (column 3). Here, the leaders are Finland (29.1% and 23.5%), Germany (29.1% and 30.9%), Italy (35.8% and 28%), and Slovenia (31.1% and 28.9%). All countries take a responsible approach to the use of water resources because it is a vital resource, and is socially and environmentally sensitive. The implementation of other measures, such as the replacement of fossil energy with renewable energy sources (aspect 8), and the recycling of products measures (aspect 4), is somewhat surprising, because they are the least developed compared with other environmental programmes. This can be explained by the fact that the implementation of these measures requires more financial resources, and that the benefits have to be mutual, both for companies and consumers.

4. Discussion and conclusions

Attention to environmental problems has increased due to the deterioration of the environment, air and water pollution, and soil degradation. Consequently, the EU has issued a set of documents for better and sustainable economic activities. The appearance of the European Green Deal document in 2019 is like a flagship steering all EU efforts to reach long-term sustainability and climate neutrality (European Commission, 2021). The Green Deal is mostly linked to energy and resource-intensive sectors, defining the circular economy as the main driving force of the future economy. However, economic growth in the EU has to be decoupled by increasing the use of resources and decreasing environmental impacts from the life cycle perspective (Čiegis, 2011; Zampori, 2019a). The improvement of sustainability is usually associated with the reduction of CO_2 and GHG emissions. Sustainable measures also include the substitution of primary resources or energy, reducing the consumption of material and energy, and increasing the use of renewable resources.

Economic entities are increasingly using the sustainable development paradigm to demonstrate the environmental friendliness of their activities. Sometimes ‘green’ topics are usually only the product labels, and are far from reflecting true sustainability. The success of implementing sustainable strategies can be measured by analysing SDGs and sustainability indices, such as the ecological footprint (EF) and SBA. However, SMEs in EU countries face challenges, particularly the use of instruments with higher implementation costs, the complexity, and the lack of attention from responsible authorities. Nevertheless, innovation and sustainable skills are essential to reduce negative environmental impacts and ensure sustainable economic growth. Sustainable development skills are essential in order to increase consumer awareness and promote sustainable consumption. Sustainable development is not only a theoretical concept, but also a practical tool to develop skills, knowledge and understanding of sustainability and environmental awareness. It is important for economic entities to find and improve the weak aspects that contribute to the sustainability of their operations, and to change the infrastructure as a whole. Eco-labels are an important tool for sustainable marketing, but they sometimes do not reach consumers, due to a lack of adequate information. Sustainability reporting helps economic entities to assess the impact of their economic activities along the value chain, and to provide social and environmental information. EU countries such as Finland, Germany, Slovenia and Sweden are the leaders in innovation and sustainability measures.

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ŪKIO SUBJEKTŲ TVARUMAS IR JO REIKŠMINGUMAS MAŽINANT NEIGIAMĄ POVEIKĮ APLINKAI

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Santrauka

Straipsnyje analizuojama aktuali šiuolaikinėje ekonomikoje ūkio subjektų tvarios veiklos problematika ir jos reikšmė mažinant neigiamą poveikį aplinkai. Tvarumas šiandien yra ne tik teorinė koncepcija, bet ir praktinė įgūdžių ugdymo, žinių kūrimo ir tvarumo suvokimo priemonė. Vartotojų sąmonėjimas skatina domėji-

mąsi tvaria veikla ir vartojimu, kurie neatsiejami nuo atsakingo požiūrio į aplinką bei socialines problemas. Ūkio subjektams kyla tvarumo iššūkių, kaip užtikrinti veiklos tvarumą, kartu išlaikyti konkurencingumą rinkoje. Tyrimo metodika apima kiekybinius tyrimo metodus ir kokybinę dokumentų turinio bei antrinių duomenų analizę. Kokybinė tyrimo metodika pagrįsta literatūros šaltinių ir statistinių duomenų analize. Atliktas ūkio subjektų tvarumo aspektų palyginimas ir išanalizuotas inovacijų indėlis, siekiant įvertinti ūkio subjektų tvarios veiklos lygį ES šalyse. Tyrimo rezultatai atskleidė, kad ūkio subjektai daro didžiulį poveikį aplinkai. Jie savo veikloje dažniau taiko tvaraus vystymosi paradigmą, siekdami būti draugiškesni aplinkai. Tačiau norint užtikrinti tikrą tvarumą vien ekologiškų produktų ženklinimo nepakanka. Vartotojai dažnai skeptiškai vertina ekologiškus produktus, nes nesupranta ekologinių ženklų koncepcijos, todėl nelabai pasitiki ekologiniu ženklinimu. Nors dauguma ES ūkio subjektų stengiasi nusistatyti tvarios veiklos vystymosi tikslus, tačiau jiems įgyvendinti trūksta įgūdžių, patirties, finansinių ir vadybos priemonių. Inovacijos yra pagrindinis tvarios veiklos elementas, kuris skatina naujovišką ir tvarų verslą. Analizuojant įvairių ES šalių įmonių inovacijų rodiklius, esminiai ūkio subjektų aplinkosauginio veiksmingumo rodikliai Lietuvoje, kaip ir kitose ES šalyse, priskiriami prie inovacinių priemonių plėtros rodiklių. Tvarus ūkio subjektų veiklos vystymasis – tai kompleksinio požiūrio problematika, apimanti tiek ekonominius, tiek socialinius, tiek aplinkosauginius aspektus. Aplinkos kokybės gerinimas, energijos vartojimo ar CO_2 pėdsako mažinimas labiausiai paplitę tarp ekonominių subjektų ES šalyse. Be to, ES šalys atsakingai žiūri į medžiagų ir vandens vartojimo, oro, vandens, triukšmo ir dirvožemio taršos mažinimą, nes tai ne tik gyvybiškai svarbūs, bet ir socialiai jautrūs ištekliai. Pažymėtina, kad investavimas į iškastinės energijos keitimą atsinaujinančiais energijos šaltiniais ir atliekų perdirbimą tarp ūkio subjektų yra mažiau populiari priemonė, lyginant su kitomis priemonėmis, nes joms įgyvendinti reikia daugiau finansinių išteklių, o nauda turi būti abipusė – tiek įmonėms, tiek vartotojams.

Taigi galima teigti, kad tvarus vystymasis šiuo metu tampa labiau praktine priemone, kai ūkio subjektai ugdosi įgūdžius, formuoja žinias, puoselėja tvarumo supratimą ir aplinkosauginį sąmoningumą. Ekonominiams subjektams kartais nebūtina keisti esamos infrastruktūros, užtenka surasti ir patobulinti silpnąsias veiklos vietas, taip didinant veiklos tvarumą. Ekologinės etiketės, nors ir svarbi tvarios rinkodaros priemonė, tačiau tai nepasiekia vartotojų ir nekeičia jų įpročių, tad švietimas tvaraus vystymosi klausimu vaidina svarbų vaidmenį didinant vartotojų informuotumą ir skatinant tvarų vartojimą. Tvarumo politikos tendencijos atskleidžia, kad vertinti ūkio subjektų veiklos poveikį reikėtų atsižvelgiant į visą vertės grandinę, kuri įvertina ūkio subjektų kuriamą socialinę aplinką. ES šalys, tokios kaip Suomija, Vokietija, Slovėnija ir Švedija, pirmauja investicijų į inovacijas ir tvarumo priemones aspektu. Tačiau ES šalims kyla iššūkių, kurie susiję su tikslų įgyvendinimo darna, ypač su didesnes įgyvendinimo sąnaudas turinčių priemonių taikymu, sistemų sudėtingumu, atsakingų institucijų dėmesio stoka ir biurokratija. Nepaisant to, inovacijos ir tvarūs įgūdžiai yra būtini, siekiant mažinti neigiamą poveikį aplinkai ir užtikrinti tvarų ekonomikos augimą.

PAGRINDINIAI ŽODŽIAI: *tvarus vystymasis, darnaus vystymosi įgūdžiai, aplinkosauginis veiksmingumas, aplinkosauginis pėdsakas, inovacijos.*

JEL KLASIFIKACIJA: O1, Q56.

Received: 2024-11-05

Revised: 2024-12-05

Accepted: 2024-12-20