



The current state and prospects of development of the European Commission's grant programs for the implementation of joint Ukraine-EU projects

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DOI: 10.18226/25253824.v8.n13.15

Submitted on: 04/02/2024 Revised on: 10/07/2024 Accepted on: 11/24/2024

Abstract: This article analyzes the use of European Commission grant programs in the implementation of joint EU-Ukraine projects and identifies further opportunities to attract European Commission grants to finance projects in Ukraine. The authors reveal the main opportunities for the use of European grants for the government and the community to develop entrepreneurship in Ukraine. The goals and priorities of the European Commission's programs are demonstrated, namely: Horizon Europe, Creative Europe, Erasmus+, Digital Europe Program, EU4Health Program, Program for the Environment and Climate Action, Single Market Program, Connecting Europe Facility, Union Civil Protection Mechanism, and Euratom Research and Training program. Methods and mechanisms for overcoming the main obstacles that stand in the way of representatives of the public, for-profit and non-profit sectors on the way to obtaining grant instruments of the European Commission were also proposed. In conclusion, it was summarized that the effectiveness of the use of the European Commission's grant resources directly depends on the availability of information on the possibilities of these instruments and the professionalism of applicants to formulate competitive project proposals.

Keywords: alternative resources, financing, grant support, European grants.

Resumo: Este artigo analisa a utilização dos programas de subvenções da Comissão Europeia na implementação de projectos conjuntos UE-Ucrânia e identifica outras oportunidades para atrair subvenções da Comissão Europeia para financiar projectos na Ucrânia. Os autores revelam as principais oportunidades de utilização das subvenções europeias para o governo e a comunidade desenvolverem o espírito empresarial na Ucrânia. São demonstrados os objectivos e as prioridades dos programas da Comissão Europeia, nomeadamente: Horizonte Europa, Europa Criativa, Erasmus+, Programa Europa Digital, Programa EU4Health, Programa para o Ambiente e Ação Climática, Programa Mercado Único, Mecanismo Interligar a Europa, Mecanismo de Proteção Civil da União e Programa de Investigação e Formação Euratom. Foram também propostos métodos e mecanismos para ultrapassar os principais obstáculos que se colocam aos representantes dos sectores público, com e sem fins lucrativos na obtenção de instrumentos de subvenção da Comissão Europeia. Em conclusão, resumiu-se que a eficácia da utilização dos recursos de subvenção da Comissão Europeia depende diretamente da disponibilidade de informação sobre as possibilidades destes instrumentos e do profissionalismo dos candidatos para formularem propostas de projectos competitivas.

Palavras-chave: recursos alternativos, financiamento, subvenções, subvenções europeias.

Introduction

Since the European Union officially recognized Ukraine's independence in December 1991, Ukraine has been able to cooperate with EU countries. After the ratification of the EU-Ukraine Association Agreement in 2014, Ukraine received grant opportunities from the European Commission, namely: Horizon Europe, Creative Europe, Erasmus+ [13]; [15]; [21]. Euratom's research and training program, which came into effect on January 1, 2021, has also become relevant [36]. With Ukraine's EU candidate status, new European Commission grant programs have become available to Ukrainians: Digital Europe Program, EU4Health Program, Program for the Environment and Climate Action, Single Market Program [18]; [16]; [21]; [30]. Since 2023, Ukraine has joined the EU's Connecting Europe Facility and Union Civil Protection Mechanism programs [20]. These programs annually update dozens of grants for the development of small and medium-sized businesses, representatives of executive

and local governments, education and healthcare. Additionally, one of the goals of these programs in times of war is to support the resumption of business activities in the territories of Ukraine that have been most affected by the hostilities and occupied, as well as to strengthen the resilience of microbusinesses in other regions of Ukraine. However, potential applicants are passively taking advantage of these opportunities, as very few people are familiar with grant activities as a successful basis for financing various projects. Anyone wishing to attract European grant funding needs to be timely informed about grants and the prospects for attracting them, be able to find partners in European countries and develop high-quality competitive projects. The need to study the current state and prospects of the European Commission's grant programs for the implementation of joint EU-Ukraine projects is due to a number of factors:

- High relevance of the issue of cooperation between Ukraine and the EU, especially in times of war.

- Economic problems in Ukraine that make it impossible to finance all necessary projects exclusively from the state budget.
- High level of corruption, which leads to the need for international control over spending on large-scale projects.
- Low level of participation of domestic business in EU grant programs and the need to identify the reasons for this situation.

The scientific novelty of the study lies in the fact that for the first time an analysis of the current state and prospects of development of the main grant programs of the European Commission for the implementation of joint EU-Ukraine projects was carried out and the possibilities of further expanding the attraction of grant resources of the European Commission to finance the development of entrepreneurship in Ukraine were identified.

The study identified the main factors that hindered the wider use of grant programs, which allowed us to provide effective recommendations for overcoming subjective barriers for potential applicants. The main drawback of the study is a number of gaps that were made due to the lack of information about the work of the European Commission's grant programs in the context of Ukraine. Some of the programs reviewed (Euratom) were only approved, but no active actions have been taken within the framework of this program.

Further research into the current state and prospects for the development of the main grant programs of the European Commission for the implementation of joint EU-Ukraine projects should also compare the conditions for granting these programs and the amounts allocated to projects with those of the United States and other countries and international organizations. This will help to identify the main trends in the development of grant programs and unify the mechanism for participating in them in the future, which will greatly simplify access to them for potential grantees and make it possible to select the most priority ones in terms of requirements and resources needed for further implementation.

Literature review

The European Commission's programs have been gradually becoming relevant for Ukraine. One of the first was the predecessor of Erasmus+, the Tempus program. its first phase began in 1990 [43]. Since then, the attention of a number of scholars has been focused on the possibilities of the European Commission's grant instruments. Noting the importance of the technical, financial, organizational, methodological and other assistance provided by the EU and its member states to Ukraine in recent years [37], it should be emphasized that the potential of this cooperation has not yet been fully realized and needs to be further actualized.

Ukraine's European integration vector has provoked an increased interest of scientists in grant assistance from the European Union. A number of scholars have studied the European Commission's grant instruments, including Brechko [2]; [33]; [41]; [40]; [42]; [34]; and others.

Kruglashov [34] emphasizes the significant but underutilized support Ukraine has received from the EU and its member states in modernizing its education and science sectors. He highlights the need for further cooperation, envisioning Ukraine's gradual integration into the European educational, cultural, and civilizational space. Kruglashov calls for overcoming bureaucratic and financial obstacles to ensure equal partnerships between Ukrainian and Western institutions. He also stresses the importance of involving regional and non-governmental organizations, advocating for cross-border cooperation programs that foster deeper cultural and civil integration between Ukraine and the EU. For example, according to [33] a striking manifestation of the European Union's solidarity with Ukraine in 2022 was the Creative Europe program, which was one of the first 25 to respond to Russia's large-scale invasion of Ukraine. Brechko [2] noted that Ukraine's integration into the European Union's Digital Single Market will be a significant step forward in digitalization for both Ukraine and the EU, which will create new business opportunities, promote innovation and economic growth. The scientist believes that by working together to overcome the challenges of digital integration, the EU and Ukraine will be able to create a competitive digital ecosystem and ensure Ukraine's accelerated accession to the European Union. Struk [42] emphasized: «It is important that communities have the appropriate skills and capacities to develop projects that meet their strategic development goals and the requirements of EU programs and funds. In addition, they need to have the ability to effectively manage the funds they will receive as a result of the relevant projects.»

Shehur and Kukharuk [41] draw attention to the importance of attracting grants, noting that in the context of European integration, the first priority is to establish and maintain partnerships with innovative enterprises, organizations and institutions in Europe. Partnership is a prerequisite for participation in most EU grant programs. Pavlyuk et al. [40] emphasized that for the quality preparation and effective implementation of European initiatives to integrate domestic environmental legislation into EU standards, European experts are ready to analyze Ukrainian norms and help Ukrainians implement European practices of using natural resources, not only through consultations and advice, but also through a financial support tool, which is extremely important for Ukraine, especially in this difficult time of war.

In a joint paper, Brunner et al. [3] provided a brief overview of brain-computer based interfaces within the framework of projects funded by the European Commission. It was also determined that effective communication requires the establishment of clear terminology, which is the main goal of the BNCI Horizon 2020 grant program. Pacheco-Torgal [39] examined the issues of eco-

efficient construction and building materials research within the framework of the EU Horizon 2020 Framework Program. In his work, he came to the following conclusions:

- Horizon 2020 is the most important instrument for research and innovation in the world.
- The sustainability focus of Horizon 2020 will have a strong impact on the entire European construction industry.
- The development of environmentally efficient building materials is well aligned with the goals of Horizon 2020.
- Nanotechnology-based energy-efficient building materials can be a crucial, key technology.

Another group of scientists engaged in Erasmus+ research based in Portugal [38] answered the question of which sustainable development goals are directly contributed to by the Erasmus+ program and higher education mobility projects. Rossetti [9], Deputy Head of Research within the Euratom program, created a presentation that demonstrates in detail all the features and main characteristics of the Euratom program.

At the same time, an analysis of the results of research by individual scientists on grant funding from the European community shows that there are currently a rather limited number of publications on the topic. Taking into account the results of the research of scientists, it is worth noting that they do not cover the full list of the European Commission's programs for the implementation of joint EU-Ukraine projects as of April 2024; their priorities and capabilities of these programs, their goals and areas of support for Ukrainian business representatives, as well as the barriers to engagement that potential grantees face are left out.

The purpose of the study is to analyze and evaluate the use of the European Commission's grant programs for the implementation of joint EU-Ukraine projects and to identify opportunities for further expanding the use of the European Commission's grant resources to finance entrepreneurship development in Ukraine.

The study aims to analyze the capabilities of several European Commission programs for implementing Joint EU-Ukraine projects and overview the prospects for using their grant instruments by various sectors in Ukraine. The Horizon Europe Program is explored, focusing on its potential for innovative businesses, Creative Europe Program as well and its opportunities for creative industries. The Erasmus+ Program is analyzed with an emphasis on SMEs in the educational sector, while the Digital Europe Program is evaluated for its relevance to small and medium-sized businesses across industries. Similarly, the EU4Health Program's prospects are examined for SMEs in the medical sector, and the Environment and Climate Action Program's applicability to businesses is reviewed. The study also

considers the Single Market Program's potential for SMEs in different sectors and industries, the Euratom Research and Training Program's benefits for Energoatom JSC, and the Connecting Europe Facility's opportunities for businesses in transport, energy, digital, and telecommunications sectors. In addition, it investigates the EU Union Civil Protection Mechanism's use in improving disaster preparedness and response. Finally, the study provides recommendations for expanding the use of these grant instruments in joint EU-Ukraine projects [45].

1. Research on European Commission programs and their relevance to Ukraine highlights significant progress but also shows unrealized potential, especially in the contexts of European integration. Researchers focus on environmental legislation and sustainable development – while there is little to none in regards of discussing how these programs will collectively support Ukraine's broader needs, more research is needed on how these innovations can help Ukraine rebuild post-war. Despite acknowledging the importance of partnerships, researchers often overlook the barriers that Ukrainian organizations face when accessing EU grants, such as limited institutional readiness or difficulties aligning with EU standards. Future studies should focus on overcoming barriers to access, capacity-building and the long term impact of these programs on Ukraine's post-war recovery and integration into the EU

Methodology

The following general scientific methods were used to solve the tasks. The monitoring method was used to collect, systematize, and analyze information on the European Commission's grant programs open to Ukraine. The method of comparison was useful in the study of the level of activity of Ukrainian SMEs in the European Commission's programs in comparison with SMEs from other countries, including Turkey, Georgia, and Norway. The method of abstraction: used in the course of the study to identify the main concepts and categories.

Methods of analysis and synthesis: used in the process of identifying the stages and factors of development, as well as the most influential elements of the object under study. The inductive method was used for the predictive analysis of the expected effectiveness of grant programs and their application in Ukraine. The abstract-logical and dialectical methods of scientific knowledge, as well as the method of scientific abstraction, were used in the study to formulate theoretical generalizations, clarify the conceptual apparatus, and formulate conclusions.

The method of specification was used to record the effectiveness and feasibility of the proposed means to overcome subjective barriers of potential applicants and to implement a broad awareness campaign on partnership opportunities. Quantitative data processing method: allowed to express different aspects of grant programs in numerical values.

To solve certain tasks, the following groups of special methods were used: methods of collecting information; methods of processing information; methods of analytical work; and the method of justification. Also used were scientific literature on the subject, monographs, scientific and analytical publications of Ukrainian and foreign scholars on the issues under study, and the results of independent observations.

To achieve this goal, the following research objectives were set and solved:

- a brief review of previous scientific works of domestic and foreign scholars on the identified problem and the conclusions obtained during these studies are considered;
- research gaps are identified;
- the main programs of the European Commission for 2021-2027 were identified and reviewed;
- the features of these programs and the results of their implementation in Ukraine for the specified period are reviewed in detail;
- the reasons that hinder the receipt of EU grants are identified and analyzed in detail;
- effective tools for overcoming subjective barriers of potential applicants have been identified;
- the conclusions provided contain further areas of research.

The practical significance of the obtained results lies in the development of recommendations for the implementation of the policy of overcoming subjective barriers in potential applicants for grant programs of the European Commission. The fundamental nature of the study is determined by the following criteria:

- research results form the basis for new fundamental, applied, and exploratory research and development;
- high internal scientific effect, which determines the emergence of a new direction in the development of science;
- the study is long-term.

The relevance of the topic under study is argued by the importance of assessing the current state and prospects of development of the European Commission's grant programs for the implementation of joint Ukraine-EU projects, which, in turn, is one of the parts of Ukraine's European integration process.

The object of the study is the process of assessing the current state and prospects of development of the European Commission's grant programs for the implementation of joint Ukraine-EU

projects, and the subject is the principles of development of the European Commission's grant programs for the implementation of joint Ukraine-EU projects. The choice of methods is justified by the need for a more comprehensive and multi-faceted approach to analyzing the European Commission's grant programs. The monitoring method was selected because it enables the collection and systematic analysis of current information regarding the grant programs. It's important to capture accurate and up-to-date data due to the constant evolution of the programs. The comparison method helps contextualize Ukraine's engagement in EU programs. The abstraction method is crucial for distilling complex concepts related to grant programs and identifying key categories for analysis and given the study's goal of making predictions about the future effectiveness of grant programs in Ukraine, the inductive method is quite ideal. This method helps forecast future developments and potential impacts of grant programs, adding a domain of forward-looking to the research. These diverse set of methods allow the study to approach the problem from multiple angles.

Results

After the ratification of the EU-Ukraine Association Agreement in 2014, Ukraine has a number of obligations to the European Union, and the latter, in turn, supports Ukraine in its European integration processes, including through grant instruments. Thus, since July 2015, Ukraine has become an associate member of the Horizon 2020 program, the largest program of the European Commission aimed at financing research and innovation [31]; [36]; [21]. With the start of European integration, grant instruments of the Creative Europe and Erasmus programs became available to Ukraine [13]; [15]; [8]. At the 23rd Ukraine-European Union Summit, held on October 12, 2021, the Agreement on Ukraine's participation in the Euratom Framework Program for Research and Training of the European Atomic Energy Community was officially signed [35]. And after Ukraine received the status of an EU candidate, new grant programs of the European Commission began to open for Ukraine [5]. Let us highlight the main EC programs (2021-2027) in which Ukraine is an accredited partner (Table 1).

Table 1. Generalized description of the main programs of the European Commission for Ukraine in the period of 2021-2027.

The name of the program	Business opportunities	Program budget, EUR billion
Horizon Europe (HORIZON)	To support cutting-edge technologies, the European Innovation Council (EIC) was established, which supports cutting-edge research through two mechanisms. – The first, the EIC Pathfinder, will support early-stage technology projects and provide grants to any legal entity, including educational institutions. The expected result will be a new startup or business plan. – The second mechanism is called the EIC accelerator and is aimed at increasing the production of promising products. The EIC’s goal is to help innovators create the markets of the future and expand their businesses. The EIC’s activities complement those of the European Institute of Innovation and Technology (EIT).	94,1
Creative Europe (CREA)	Increasing the competitiveness and economic potential of the CCI sectors, in particular audiovisual	2,4
Erasmus+ (ERASMUS+)	The program supports opportunities for educational and academic mobility, projects and partnerships, strategy development and cooperation, professional networks and open resources in the education and youth sector.	4,43
Digital Europe Programme (DIGITAL)	Through supercomputers, artificial intelligence, cybersecurity, and advanced digital skills, including digital technologies, projects in five key areas will be supported that have the potential to enable widespread adoption of digital technologies in business and society.	7,5
EU4Health Programme (EU4H)	Grants to healthcare entities for projects that will improve and promote health, protect people, access to medicines, medical devices and crisis-related products, and strengthen the healthcare system.	5,3
Programme for the Environment and Climate Action (LIFE)	The program finances large-scale strategic integrated projects and strategic environmental projects that support the implementation of environmental and climate plans, as well as programs and strategies developed at the regional, interregional or national level.	5,4
Single Market Programme (SMP)	This program has several components: competitiveness of enterprises, consumer protection, ensuring a high level of food safety, maintaining European statistics and ensuring standardization.	4,2
Euratom Research and Training Programme	Euratom’s program complements the objectives of the Horizon Europe Framework Program, including in the context of the energy transition, and contributes to the implementation of the European Fusion Roadmap.	1,38
Connecting Europe Facility (CEF)	A key EU funding instrument to promote growth, job creation and competitiveness through targeted infrastructure investments at the European level.	28,4
Union Civil Protection Mechanism (UCPM)	This mechanism aims to support, coordinate or complement the actions of EU Member States in disaster prevention, preparedness and response.	3,3

Source: based on [31]; [36]; [44]; [8]; [7]; [13];[14]; [15]; [17]; [18]; [20]; [21].

The authors highlight the specifics of these programs and the results of their implementation in Ukraine over the period. Horizon Europe is the EU’s framework program for research and innovation for 2021-2027 with a budget of €95.5 billion. Its main goals are to strengthen the EU’s science and technology base and the European Research Area (ERA); to boost Europe’s innovation potential, competitiveness and jobs; to realize citizens’ priorities and to support our socio-economic model and values.

The program has a special focus on creating impact or the European Green Deal, the digital transition and transition to sustainable development, and recovery from the coronavirus crisis. The program finances projects that aim to combat climate change, thus helping to achieve the UN Sustainable Development Goals and increase the competitiveness of the EU economy and welfare growth, as well as fostering cooperation and strengthening the impact of research and innovation in the development, support and implementation of EU policies, while addressing global challenges. The program supports the creation and better dissemination of excellent knowledge and technologies: creating jobs, fully engaging the EU’s talent pool, stimulating economic growth, promoting industrial competitiveness and optimizing investment impact in a strengthened European Research Area. The program is open to legal entities from the EU and associated countries. Elements in Horizon Europe:

- A. European Innovation Council: support for innovations with potential breakthrough and disruptive nature with expansion potential that may be too risky for private investors. This is 70% of the program’s budget for SMEs.
- B. Missions: a set of activities to achieve bold, inspiring and measurable goals within a set period of time. Horizon Europe provides funding for 5 main areas of activity.
- C. Open science policy: mandatory open access to publications and open science principles are applied throughout the program.
- D. A new approach to partnerships: targeted and more ambitious partnerships with industry in support of EU policy objectives [36]; [20]. The Horizon Europe program in Ukraine starts in 2021, so we can draw some conclusions about the effectiveness of its implementation. At the same time, analyzing the key indicators of its predecessor Horizon 2020, it is worth noting the rather high ratings of Ukraine’s participation in this program, even compared to other countries accredited in the program (Table. 2) [12]; [19].

Table 2. Comparative characteristics of the key indicators of the Horizon2020 program in selected countries involved in its implementation

Key indicators	Ukraine	Turkey	Georgia	Norway
Number of organizations involved in Horizon2020 projects, units.	338	1.388	65	3,523
Funding received by project participants	45,01 млн. евро	276,501 млн. евро	8,6801 млн. евро	1,71 млрд. евро
Number of organizations that applied for grants, units.	2,842	10,285	505	17,576
Success rate, %	9,32	10,46	11,88	15,87
Number of SMEs involved in projects, units.	81	233	4	596
Position in the ranking based on participation in H2020 for countries in its group	7 з 15	4 з 15	13 з 15	2 з 15

Source: based on [12]; [19].)

The total amount of funding received from the EU is €45.75 million, with 318 Ukrainian organizations participating in 228 projects. The share of universities and research institutes in the total funding of Ukrainian organizations is 39.9%. In general, the financial result of universities and research institutes from all participating countries in the Horizon 2020 program is 65.2%. [1, 19].

Currently, there is an opportunity to receive funding through the Creative Europe program. «Creative Europe is a program of the European Commission that supports the cultural and audiovisual sectors. The main objectives of the program are:

1. to support the creation of European works and to help the cultural and creative sectors to take advantage of the opportunities of the digital age and globalization to realize their economic potential, contributing to sustainable growth, job creation and social cohesion;
2. to promote the competitiveness and innovation of the European audiovisual industry and to help Europe’s cultural and media sectors access new international opportunities, markets and audiences;
3. promote cross-sectoral innovation and diverse, independent and pluralistic media.

The program includes several subprograms. The “Culture” subprogram of the Creative Europe program covers all areas of the cultural and creative industry (with the exception of the



audiovisual sector and cinema). This subprogram accounts for at least 33% of the “Creative Europe” program budget. The “Media” subprogram under the Creative Europe program supports the film and audiovisual industries. This subprogram accounts for at least 58% of the “Creative Europe” program budget. The “Cross-Sectoral Cooperation” subprogram under the Creative Europe program promotes cooperation between different cultural and creative sectors and includes the media sector. At least 9% of the “Creative Europe” program budget will be allocated to the cross-sectoral cooperation subprograms [13]; [22].

Ukraine joined the program in 2016 and has its own success stories. Between 2014 and 2020, €1.46 billion was allocated to support European projects under the EU’s Creative Europe program. The new program for 2021-2027 already has a total budget of €2.44 billion. Ukraine participates in this program as a key partner.

Three projects were financed under the «CULTURE» subprogram. In addition, 29 projects were funded under the «International Cooperation Projects» competition. The MUSIC MOVES EUROPE competition funded three projects. Within the framework of the «Literary Translation» competition, 18 projects were funded. Three projects were funded under the «Media» subprogram, and 13 projects were funded under the «Cross-Sectoral Cooperation» subprogram [13]; [23].

In April 2019, the Goethe-Institut, the French Institute, the Nida Art Colony of the Vilnius Academy of Arts, and the IZOLYATSIA. Platform for Cultural Initiatives has launched the i-Portunus mobility program for artists and cultural professionals. This is a project selected and funded by the European Union’s «Creative Europe» program. It is designed for artists and cultural professionals working in the field of performing or visual arts and residents of the EU’s Creative Europe program. The program announced three calls for proposals to support short-term (15-85 days between June 15 and December 31, 2019) international mobility schemes.

According to the results of the first competition, Ukraine was among the top 10 countries in the ranking that received mobility grants. 9 out of 38 Ukrainians who applied for the program received such grants. Ukraine is also the only country in the top ten that is not a member of the European Union. A total of 1222 applications were submitted for the competition. In the second competition, 7 Ukrainian applicants won. Ukraine has again entered the top 10 countries in the ranking that received mobility grants. In addition, Ukraine is the only country in this ranking that is not a member of the European Union. A total of 710 applications were submitted for the competition. In the third competition, 3 Ukrainian applicants won. A total of 586 applications were submitted to the competition [11]; [12]; [23].

Even before Ukraine joined the EU’s «Creative Europe» program in 2016, such co-productions with Ukrainian participation were funded by a separate «Media» program:

- documentaries: «Ukrainian Sheriffs (2016), Dybbuk – A report on the Banality of the Earth (2015), Maidan (2014), Dust (2001);
- dramas: «La Terre Outragée (2011), Luxembourg, Schastye Moe (2010), Zanan-e bedun-e mardan (2009), 4 Days in May (2011), 4 Tage im Mai (2011) [4].

Erasmus+ is an EU program supporting education, training, youth and sport in Europe. The aim of Erasmus+ is to support people’s educational, professional and personal development in education, training, youth and sport, to promote sustainable growth, quality jobs and social cohesion, to stimulate innovation and to strengthen European identity and active citizenship. In the period 2021-2027, Erasmus+ will continue to build on its successful and extensive experience, focusing on three horizontal priorities: inclusion and diversity, digital transformation, and environmental sustainability. For Ukraine, Erasmus+ opens up opportunities for mobility and cooperation in the following areas: higher education and Jean Monnet European Studies; vocational and professional higher education; school education; adult education; youth; and sports. Ukraine, whose territory is recognized by international law, is a partner country of the program as part of the Eastern Partnership countries – Region 2.

With this status, Ukrainian organizations can participate in the competition as individual beneficiaries or as part of a partnership from several program countries: as applicants for 5 directions of 11 calls and as partners for 19 directions of 35 calls. Erasmus+ offers opportunities for: individuals to spend a period of mobility abroad and receive language training; organizations to cooperate in partnership projects in the fields of academic and vocational training, schools, adult and youth education, and European sporting events. Erasmus+ also supports teaching, research, communication and policy debate on EU topics. The program includes a strong international dimension: cooperation with partner countries, in particular in the field of higher education and youth, through institutional partnerships, youth cooperation and mobility around the world [7]; [8]; [25]. The Erasmus+ program has a long history in Ukraine. Every year, thousands of applicants from the formal and non-formal education, adult education, youth and sports sectors of Ukraine participate in it.

Here are the results of the competitions implemented in Ukraine under this program in 2021 and 2022 in the field of education, vocational training, youth and sports. In the area of International Academic (Credit) Mobility in Higher Education, 4,248 individual mobility grants were supported. In the area of Virtual Exchanges, 2 projects were supported: 7 Ukrainian organizations as partners and 3 as associate partners. Scholarships for master’s programs were awarded to 100 students. In the area

of Joint Erasmus Mundus Master Programs, 4 projects were supported: 2 projects for the implementation of Joint Master's programs, 1 as an associate partner; 2 projects for the design of Joint Master's programs – coordinators of 2 universities from Ukraine. In the area of Higher Education Capacity Development, 13 projects were supported, 72 participating organizations. In the area of Vocational (vocational-technical) and professional higher education: 2 projects, 23 partners from 10 countries in cooperation with 5 VET providers from Ukraine in partnerships. In the area of «Partnerships for Cooperation in Education», 12 projects were funded, with the participation of 9 higher education institutions, 6 NGOs, and 2 business organizations from Ukraine. In the Jean Monnet program, 63 higher education institutions and 131 projects were supported: 115 modules, 4 Centers of Excellence, 14 departments. In the area of Educational Mobility, 433 youth projects were supported. 7 cooperation partnership projects received funding [15]; [8].

Since 2022, new grant programs have been opened for Ukraine: Digital Europe Program, EU4Health Program, Program for the Environment and Climate Action, Single Market Program. Ukraine is participating in them for the first time.

Digital Europe Programme is the first EU program aimed at accelerating the recovery and stimulating the digital transformation of Europe. The €7.6 billion program is part of the EU's next long-term budget (the Multiannual Financial Framework) and covers the years 2021-2027. It will provide funding for projects in five key areas: supercomputers, artificial intelligence, cybersecurity, advanced digital skills, and ensuring the widespread use of digital technologies in the economy and society. The program is designed to bridge the gap between digital technology research and implementation, and to bring research results to the market – for the benefit of European citizens and businesses, in particular small and medium-sized enterprises. Investments under the Digital Europe program support the Union's dual objectives of green transition and digital transformation, and strengthen the Union's resilience and strategic autonomy [4]; [14]; [24].

The actions funded under the EU4Health program will pursue the following 4 objectives:

1. improve and promote health in the Union (disease prevention and health promotion, international initiatives and cooperation in the field of health);
2. deal with cross-border health threats (prevention, preparedness and response to cross-border health threats, replenishment of national stocks of essential crisis-related products, creation of a reserve of medical and support staff);
3. Improve medicines, medical devices and crisis products (providing affordable medicines, medical devices and crisis products);

4) act to strengthen health systems, their resilience and efficient use of resources (strengthening health data, digital tools and services, digital transformation of health, improving access to health care, development and implementation of EU health legislation and evidence-based decision-making, integrated work between national health systems). EU4Health will also invest in the top health priorities: the response to the COVID-19 pandemic and resilience to cross-border health threats; the European Cancer Plan; and the Pharmaceutical Strategy for Europe. Other areas, such as the digitalization of health systems, antimicrobial resistance, and increased vaccination rates, are also receiving funding and attention. In addition, successful initiatives such as the European Rare Disease Reference Networks are being scaled up [16]; [26].

The total budget for the implementation of the Program for the Environment and Climate Action (LIFE) will amount to €5.432 billion. The program will finance projects aimed at solving problems related to environmental degradation, climate change and the transition to clean energy. The LIFE program is divided into two areas: one dedicated to the environment and the other to climate protection. The environmental focus has two subprograms: nature and biodiversity and circular economy and quality of life. The Climate Pillar also includes two subprograms: Climate Protection and Adaptation to Climate Change and Clean Energy Transition. LIFE will publish two Multi-Annual Work Programs (MAWPs) for 2021-2024 and 2025-2027. Each year, LIFE will publish calls for proposals for different types of projects. LIFE is currently managed by the European Executive Agency for Climate, Infrastructure and Environment (CINEA) [21]; [46].

Single Market Programme (SMP) is a program with a budget of €4.2 billion. It covers the single market, the competitiveness of enterprises, including SMEs, the crop, animal, food and feed sectors, and European statistics. The SMP brings together these aspects to optimize and exploit synergies and provide a more flexible, transparent, simplified and adaptive framework for financing activities aimed at a well-functioning sustainable internal market. The program works in the following areas: internal market, effective standards, competitiveness (in particular of small and medium-sized enterprises), consumer protection, food safety, and European statistics [22]; [30].

The Euratom Research and Training Program is an additional funding program of Horizon Europe that includes nuclear research and innovation. The budget is €1.38 billion for the implementation of the program from 1 January 2021 to 31 December 2025 [36]. The program includes the following three areas:

1. Single research center: the European Commission's science and knowledge service, which provides scientific data throughout the entire cycle;
2. Fusion research in education and training is focused on the implementation of the European Research Roadmap,



which represents a long-term alternative for large-scale electricity production;

3. Nuclear fission research focuses on the safety of spent fuel and radioactive waste management, radiation protection, education and training.

The budget for 2021-2027 of the Euratom Program is tentatively €1.981 billion and includes a number of direct and indirect actions:

1. activities carried out by the Joint Research Center Commissions (under a separate work program);
2. research activities carried out by multi-partner consortia, which include research and development of nuclear fusion and study of nuclear fission, safety and radiation protection.

The main focus of the program is the non-energy application of nuclear technologies, namely in the field of medicine (European Cancer Plan) using ionizing radiation. It is important to apply nuclear science in such areas as agriculture, environmental protection and space research.

The program contains 5 new functions:

1. Simplification: the number of tasks has been reduced and their structure has been streamlined;
2. Interaction with the «Horizon Europe» program: a clear legal framework for synergy between them has been created;
3. Training and education: support for the further development of nuclear knowledge and experience in Europe, the opportunity to receive Marie Skłodowska-Curie postdoctoral fellowships to increase mobility [29].
4. Synergy between direct and indirect activities: closer coordination and joint development of work programs will allow nuclear researchers to gain better access to the expertise of the Joint Research Center and its research infrastructure. If necessary, it will complement the activities of consortia receiving Euratom grants;
5. Recognizing the importance of health issues: an example is the use of ionizing radiation to support safe and optimized medical procedures, which is a contribution to the European Cancer Action Plan.

The Euratom program budget is distributed in three main areas [9]:

1. Indirect actions in research and development of fusion – €583 million;

2. Indirect actions in the field of nuclear fission, safety and radiation protection – €266 million;

3. Direct actions carried out by the Joint Research Center – €532 million.

Connecting Europe Facility (CEF) is an EU mechanism that responds to the low level of investment in secure, reliable and resilient high-performance digital infrastructure. In addition, the CEF contributes to increasing the capacity and resilience of digital backbone infrastructures across the EU, including in the most remote regions [44]. All of this is crucial for Europe's aspirations to remain digitally sovereign and independent in the coming years. The mechanism envisages the following main areas of implementation:

- a) deployment of very high-capacity networks, including 5G systems, in regions where socio-economic factors are located;
- b) ensuring uninterrupted 5G coverage of all major transportation routes, including trans-European transportation networks;
- c) deployment of new or substantial modernization of existing backbone networks, including submarine cables, within and between Member States, as well as between the Union and third countries;
- d) Implementation and support of digital connectivity infrastructure related to cross-border projects in the fields of transport or energy.

The second phase of the CEF mechanism (2021-2027) aims to support and stimulate investment in digital connectivity infrastructure of common interest. The total budget of the program is €2.65 billion. The actions to be supported under the CEF (2021-2027) include:

- a) deployment of very high bandwidth networks, including 5G systems, capable of providing gigabit connectivity in areas where socio-economic factors are located, such as schools, universities, hospitals, transportation hubs, government administrations, etc.;
- b) uninterrupted coverage of 5G systems on all major transport routes, including trans-European transport networks;
- c) deployment of new or significant upgrades to existing backbone networks, including submarine cables, both within and between EU Member States and third countries;
- d) implementing digital connectivity infrastructure related to cross-border transport and energy projects and



supporting existing digital platforms directly linked to this infrastructure.

An option for Ukraine to receive CEF support is cross-border renewable energy projects. Once all phases of the CEF are launched, entities in Ukraine will be able to apply for co-financing of projects aimed at increasing the capacity, security and resilience of digital connectivity between Ukraine and its EU neighbors.

Since its establishment in 2001, the Union Civil Protection Mechanism has been deployed to more than 600 emergencies and crises within and outside the EU. The EU Civil Protection Mechanism aims to strengthen cooperation between the 27 EU countries and now 9 Member States (Iceland, Norway, Serbia, North Macedonia, Montenegro, Turkey, Bosnia and Herzegovina, Albania and recently Ukraine) on civil protection to improve disaster prevention, preparedness and response. The mechanism also helps to coordinate the activities of national authorities in disaster preparedness and prevention, and facilitates the exchange of best practices. This contributes to the continuous development of higher common standards, allowing teams to better understand different approaches and work interchangeably when disaster strikes.

Since Russia's invasion of Ukraine in February 2022, the EU has disbursed a total of €685 million in humanitarian aid to Ukraine, including today's €55 million supplement, which is being approved by the EU Budgetary Authority. EU-funded humanitarian assistance is provided in accordance with the humanitarian principles of humanity, neutrality, impartiality and independence. It is delivered through UN humanitarian agencies, non-governmental organizations and the International Committee of the Red Cross [10].

Discussion

Despite the fact that the number of European grant programs for Ukraine has begun to grow rapidly in recent years, a significant number of potential grantees from Ukraine do not use the European Commission's grant instruments. According to the results of a survey of representatives of government, local self-government, the public sector, and business conducted by the Development Center «Time of Changes» in June 2023, a number of reasons stand in the way of receiving EU grants [6]. Let us consider the main ones:

1. Lack of understanding by potential grantees of the clear purpose of the programs. The reason for this is the lack of information on funding opportunities for European Commission programs. At the same time, it should be noted that representatives of some programs in Ukraine provide information on current funding programs on their websites [36]; [8] Information about open calls for proposals can be found in the public domain on the websites of a number of NGOs, such as the Development Center "Time of Changes" and others. Successful supported projects

sometimes become newsworthy in national and regional media. However, for most grant seekers, information about grants is, as they themselves note, "distant" and "incomprehensible" [6]. This is a consequence of the fact that there is no training on attracting grant resources at the level of classical educational processes in Ukraine. Therefore, changes should be made at the level of secondary, higher, and postgraduate education. However, this path to constructive change is multi-stage and time-consuming

Instead, a quicker and more effective way in the current environment is to conduct comprehensive outreach and communication activities at the level of local governments, administrative bodies and regional media. Field lectures, seminars, and workshops organized by program representatives in local communities with the full participation of the public and the media are also effective. Presentation of successful cases of implemented projects can change the perception of potential applicants that EU subsidies are very distant and unrealistic [6].

2. There is an acute shortage of professional project managers, grant writers, and fundraisers. The European Commission's grant programs are among the most complex for grantees. This is evidenced by hundreds of pages of tender documentation, information for applicants, and program descriptions [31]; [36]. The path to attracting grant instruments consists of a number of the following stages: searching for a relevant and up-to-date competition; agreements with European partners on joint participation in projects; adapting the idea to the required program priorities; developing relevant documentation.

Applicants are not able to go through such a difficult path to a grant without proper preparation. Therefore, attempts to obtain a European grant are often unsuccessful. An effective method is to combine informing potential applicants about the priorities of the European Commission's grant programs, their current grant competitions and development opportunities with the implementation of extensive educational work, holding practical training meetings with representatives of contact points, government, business, the public and the media. In addition, those who wish to systematically use EU funding instruments should seek assistance from consulting firms, advisory services or specialized donors who can provide professional assistance with project financing and management.

3. Mandatory partnerships. Participation in most European Commission funding programs requires partnerships between Ukrainian organizations and several representatives of the countries participating in the program. This means that a loan is only possible if this essential requirement of the donor is met. This condition often becomes an obstacle for Ukrainian organizations to participate in funding competitions. After all, their representatives subjectively state that it is almost impossible to find suitable partners for project activities abroad, especially when movement is restricted due to the war. However, due to their lack of awareness of these issues, organizations do not

use the opportunity to find partners in the EU directly on the program websites, where the description of the terms of each call contains the option «Search for partners for cooperation on this topic [31]; [13]. We believe that an effective tool to overcome subjective barriers of potential applicants is to conduct a broad information campaign on the possibility of finding a partnership through special resources, such as the CORDIS portal, the Idealist network, and the Funding & Tender Portal [32]; [5]; [18].

Conclusion

Thus, the study identified prospects for the use of the European Commission's grant instruments by small and medium-sized businesses in Ukraine. It has also been established that the considered grant programs of the European Commission are a significant means of assistance for the development of business, the public sector and government institutions. Each of these programs includes grants to support and develop small and medium-sized businesses. The total amount of funding received from the EU under the Horizon 2020 program from 2014 to 2020 is €45 million, and the Creative Europe program from 2014 to 2020 is €1.46 billion. The EU Civil Protection Union mechanism helped to attract almost €750 million. It is too early to draw conclusions about the level of SME involvement in the Digital Europe, EU4Health, LIFE, Single Market Program, Euratom Research and Training Program, and Connecting Europe Facility programs, given that they have become available to Ukrainian organizations relatively recently.

Further areas of research should include the effectiveness of the use of the European Commission's grant instruments by SMEs, as well as the impact of grant funding on the competitiveness of the Ukrainian and European economies in general. Future research should expand the study of SMEs' involvement in joint projects under the Digital Europe Program, EU4Health Program, Environment and Climate Action Program, Single Market Program, and Euratom Research and Training Program.

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