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# A comprehensive analysis of European Union funds for higher education institutions in Hungary

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**Abstract:** This study aims to examine the evolution of the system of support sources in Hungary, focusing on the specific goals supporting higher education in the development programs Széchenyi 2020 (2014–2020) and Széchenyi Plan Plus (2021–2027). The study provides insights into development program evolution and changes, aiming to inform EU funding opportunities for Hungarian higher education institutions over a nearly 10-year period. By focusing on the operational programs that are the basis for the upcoming tenders, the study will display the target system of EU funds that can be utilized to bolster higher education institutions in Hungary. The study is based on document analysis, examining the Hungarian policy tools of the development programs and the operational program strategies of the ten-year time period from 2014 to 2024. By analyzing the support landscape for higher education institutions in Hungary, this study contributes to a better understanding of how the key objectives and criteria of strategic programs have evolved. It also examines the aspects and elements defined in two different development programs over the last ten years. The result of the study can contribute to anticipate the types of funding opportunities that may be available in the future and inform future decision-making processes.

**Keywords:** higher education; support policy goals; operational programs; EU funds

## 1. Introduction

The European Union (EU) funds significantly contribute to various sectors within its member states, including education. Hungary, as an EU member, benefits from these funds, particularly in higher education (D1). This analysis delves into the scope, impact, and utilization of EU funds by higher education institutions (HEIs) in Hungary.

The Hungarian higher education system has undergone significant changes in recent years (Nagy et al., 2022), driven by the strategic directions and objectives outlined in the National Development and Territorial Development Concept (hereafter: OFTK) (OFTK, 2014). These initiatives have aimed to promote innovation, social responsibility, and regional development in Hungary, with a focus on addressing social and environmental needs. By offering a detailed analysis of these changes, the study can contribute to a better understanding of the support system for higher education in Hungary and inform future decision-making processes.

In recent years, there has been a growing emphasis on outcome-based systems to improve accountability and enhance institutional effectiveness (Alyasin, 2023). This trend aligns with the global effort to align educational programs with Sustainable Development Goals (SDGs) (Ambariyanto and Utama, 2020), demonstrating a

commitment to social and environmental sustainability within higher education institutions (Nagy et al., 2022; Németh et al., 2023). Furthermore, the introduction of mentorship programs (Orsini et al., 2019) and the development of educational management strategies highlight the importance of comprehensive support systems for both students and faculty members.

## **Hypothesis**

The study starts from the hypothesis that the objectives defined in the development programs and in the specific operational programs, along with the strategic directions realigned during project implementation, have guided Hungarian higher education institutions towards innovations that meet social and environmental needs, while also encouraging partnerships with industry (Nagy et al., 2022).

The main hypothesis is supported by the similarity between the target systems of the operational programs for the current period (2021–2027) and the previous period (2014–2020). The improvement of the competitiveness of higher education institutions is strongly related to the performance of individual universities. Research on corporate governance indicates that adhering to its principles enhances company performance, which in turn supports sustainable economic development (Cretan et al., 2015; Tartavuela, 2014). Similarly, applying suitable strategic principles can enhance the performance of universities. In this perspective, it is worth examining how the individual strategic goals appear in the programs and in the calls for proposals supporting higher education.

## **2. Materials and methods**

The methodology of the research is document analysis, beginning with an examination of the basic documents related to EU funds, specially the OFTK (OFTK, 2014). This document determines the long-term future vision and development policy goals and principles of Hungary until 2030.

The OFTK formulates the priorities for the development policy of the 2014–2020 program period, which are in line with the European Union's Europe 2020 Strategy and the related program funding period between 2014–2020.

The documents involved in the research are the following:

- D1. Emberi Erőforrás Fejlesztési Operatív Program [Human Resources Development Operational Program—hereinafter: EFOP]
- D2. Emberi Erőforrás Fejlesztési Operatív Program Plusz [Human Resources Development Operational Program—hereinafter: EFOP Plus]
- D3. Fokozatváltás a felsőoktatásban középtávú szakpolitikai stratégia [Graduate Change in Higher Education] (2016)
- D4. Gazdaságfejlesztési és Innovációs Operatív Program [GINOP—Economic Development and Innovation Operational Program—hereinafter: GINOP]
- D5. Gazdaságfejlesztési és Innovációs Operatív Program Plusz [GINOP Plus—Economic Development and Innovation Operational Program Plus—hereinafter: GINOP Plus]
- D6. Széchenyi 2020 Program [Széchenyi 2020 Program]
- D7. Széchenyi Terv Plusz program [Széchenyi Plan Plus]

- D8. Széchenyi Terv Plusz értékelései [Evaluation of Széchenyi Plan Plus]
- D9. Partnerségi Megállapodás 2014–2020 [Partnership Agreements 2014–2020]
- D10. Partnerségi Megállapodás 2021–2027 [Partnership Agreements 2021–2027]
- D11. S3—Nemzeti Intelligens Szakosodási Stratégia [S3—Smart Specialization Strategy of Hungary]

The study short examined all the 173 calls for tenders announced in EFOP from the point of view of whether higher education institutions are included in the support group. After that, the nine relevant calls to content analysis were subjected, whose beneficiaries include higher education institutions.

The article provides an in-depth analysis of the European Union funds available in Hungary for supporting higher education institutions over nearly a decade. This period can be segmented into two distinct phases, each corresponding to a different development program: From 2014 to 2020 the development program called Széchenyi 2020 (D6), followed by the development program called Széchenyi Plan Plus (D7) in the period from 2021 to 2027.

The research included in the study refers to the tenders for higher education appearing in the period from 2014 to the summer of 2024 and the development and operational programs in that time period.

By examining the development programs, particularly Széchenyi 2020 (D5) and Széchenyi Plan Plus (D7), the study focuses on the key objectives and criteria of these strategic programs, providing valuable insights into their evolution and the changing support landscape for Hungarian HEIs.

In the study, the method of document analysis has been used for compiling the goals for higher education institutions in the two development programs. The operational programs were examined assigned to development programs from the point of view of whether higher education institutions are among their beneficiaries. After that, the operational programs that serve the support system of higher education institutions were selected. The relevant operational programs are illustrated in the **Table 1** below.

**Table 1.** Operational programs in the development programs from 2014–2027.

| Development Program  | Széchenyi 2020                        |   | Széchenyi Plan Plus  |  |
|----------------------|---------------------------------------|---|--|--|
|                      | 2014–2020                             |   | 2021–2027  |  |
| Beneficiaries        | Include Higher Education Institutions | Exclude Higher Education Institutions         | Include Higher Education Institutions as consortium partners | Exclude Higher Education Institutions  |
| Operational Programs | EFOP, GINOP                           | IKOP, KEHOP, KÖFOP, MAHOP, RSZTOP, TOP, VEKOP | GINOP Plus   | DIMOP Plus, EFOP Plus, MAHOP Plus, IKOP Plus, TOP Plus, VOP Plus, KEHOP Plus |

The call for proposals appearing in the EFOP (D1) were examined using the method of content analysis, coding to the keywords of educational innovation, research innovation coding for the frequency of a concept. The specific calls of EFOP (D1), which aim directly to support the higher education institutions, have been involved to the research.

In the following part of the research, the calls have been analyzed by coding for sustainability, and then refining the coding to the keywords resulting in sustainability (educational reform, digital transformation).

Széchenyi 2020 (D6) is a development program for a past time period, and its operational programs have also been closed. All calls for tenders planned in the EFOP (D1) were announced and the project periods were closed at the time of the research.

The Széchenyi Plan Plus (D7) is the development program for the current programming period (2021–2027). While the related operational programs have been publicized and announced, the calls specifically supporting higher education had not yet been issued at the time this study was prepared (August 2024).

For this reason, the new development program and its operational programs have been examined in the study. Higher education institutions appear among the beneficiaries of GINOP Plus operational program (D4), mostly as consortium partner of a corporate or industrial partner. The study therefore examines and compares the target system of the GINOP Plus (D4) of Széchenyi Plan Plus (D7) with the EFOP (D1) of the Széchenyi program (D6).

### **3. Results and discussion**

#### **3.1. Széchenyi 2020**

Hungary's long-term future vision, as well as its development policy goals and principles are determined by the OFTK (OFTK, 2014) until 2030 for a period. The OFTK (OFTK, 2014) formulates those development priorities for the development policy of the 2014–2020 program period, which are in line with the European Union's Europe 2020 Strategy and the related program funding period 2014–2020.

The development policy goals and principles of the Concept form the conceptual foundation of the Partnership Agreement (hereinafter: PM) (D13), concluded between the European Commission and Hungary for the use of EU funds during the 2014–2020 period. This document underpins domestic operational programs and guides the use of both EU and domestic development resources (OFTK, 2014) (D1).

According to the vision of the OFTK (OFTK, 2014), by 2030, Hungary will become one of the leading economic and intellectual centers of Central and Eastern Europe. It will have a competitive economy that ensures a prosperous and secure society, based on the sustainable use of resources. The OFTK envisions population growth, stronger communities, and an improved quality of life. To achieve this, the concept proposes an economic and social strategic shift in four key areas, which are reflected in its comprehensive objectives.

Elements of the vision:

- An attractive economic environment, a dynamic economy. The concept plans to achieve this through a significant expansion of economic output and employment, as well as an increase in the country's economic weight, through balanced and diversified economic relations.
- A growing population and communities—this goal appears in the support of High-quality education and higher education, lifelong learning, marketable vocational training, by stopping and reversing the negative population trend, preserving the

health of the population, ensuring a safe livelihood. It plans through ensuring its opportunity and increasing social satisfaction and cohesion.

- Strategically utilized natural resources, which, according to OFTK (OFTK, 2014), can be achieved by responsible and efficient use of natural and cultural resources.
- A balanced spatial structure, the concept plans to achieve this by a multi-centered, renewal-oriented territorial system, and by stopping the increase of territorial differences, and developing the potential of rural areas.

Programs and concepts ensuring the achievement of the vision and goals set out in OFTK (OFTK, 2014):

- political strategies
- regional development concepts and regional development programs
- operational programs linked to EU and domestic development resources (D1)

### **3.1.1. Objectives of human resources development operational program (EFOP)**

The Széchenyi 2020 program (D8) provides the framework of European Union funds from 2014 to 2020, and higher education institutions are among the beneficiaries of calls for the EFOP (D1) in the largest proportion of the ten operational programs.

The EFOP (D1) contributes to Hungary's economic and social cohesion and competitiveness by increasing human capital and improving the social environment. The program allocates HUF 980.9 billion in resources, nearly one-third of which—approximately HUF 360 billion—is directed toward public and higher education (Evaluation of measures aimed at entering and staying in higher education, 2022).

A total of 142 calls were announced in the Operational Program and more than 5000 projects received support (Ex-post evaluation of measures aimed at staying in higher education, 2022).

The EFOP (D1) primarily contributes to the realization of the OFTK (OFTK, 2014) priority “Turn towards full employment and a knowledge-based society” and “Population and community turn” with the following five priorities:

Priority 1: Cooperative society

Priority 2: Infrastructural investments to strengthen social cooperation

Priority 3: Growing knowledge capital

Priority 4: Infrastructural investments for the sake of growing knowledge capital

Priority 5: Use of financial instruments to strengthen social cooperation, as well as social innovation and transnational cooperation

The comprehensive goals set out in the EFOP (D1) calls for higher education align with the medium-term political strategy “Graduate Change in Higher Education” (D3), which anticipates an improvement in the quality of higher education by the 2030s. These expectations are tied to significant social and economic megatrends observed in recent years, including the technological revolution, globalization, demographic changes, emerging social needs, and shrinking (energy) resources.

### **3.1.2. Graduate change in higher education**

The political tool “Graduate Change in Higher Education” (D3) defines the strategic goals by dividing them into three major areas—educational excellence, research excellence and social responsibility, which correspond to the three missions

of higher education, i.e. education, research and the third mission goals. The objectives according to the three listed areas are presented below.

The strategic goal of educational excellence includes objectives that serve the performance-based operation of higher education (D3):

- 1) to strengthen the relationship system at the national and institutional level,
- 2) in the field of educational innovation, forming the educational methodology of higher education practice-oriented,
- 3) establishing educational and research collaborations between institutions,
- 4) renewal of the training output requirements in terms of content and structure,
- 5) increasing interoperability between training courses and output alternatives,
- 6) increasing the accessibility of higher education,
- 7) evaluation of teachers and-researcher performance, competitive salary,
- 8) quality input and output requirements for students,
- 9) reinterpreting the role of the Hungarian Accreditation Committee,
- 10) transformation of the system of doctoral training and the method of incentives,
- 11) providing opportunities for talented students to develop their abilities.

Innovation plays a decisive role in economic and social development, in the competitiveness of countries and companies, and in solving general social problems and special issues in different policy areas. The development and support of innovation and innovation capabilities in all economic and social areas—including the education sector—is one of the priority tasks of governance (Halász and Horváth, 2017).

Educational innovation, as a goal-supporting change process, involves transformations that enable higher education to meet the demands of the 21st century and respond to demographic changes from the 20th century. These changes include offering more intensive learning experiences, renewing methodologies, and expanding non-traditional forms of education (D3). Universities play a key role in innovation activity, connecting academic knowledge between industry and civil society (Balázs et al., 2021). They play a leading role in innovation ecosystems, promoting the development of a sustainable and digital world (Halmai et al., 2023).

The research strategic goal defines and emphasizes the role and tasks of higher education in the implementation of the Hungarian innovation strategy. The strategy identifies the following objectives in this area (D3):

- 1) establishing networks between institutions with an R + D + I focus,
- 2) higher education is increasingly involved in the development of the innovation competence of technology-intensive companies and SMEs,
- 3) restructuring of research funding,
- 4) increasing the international embeddedness of research,
- 5) ensuring the need for human resources for research by increasing the number of people who have obtained a doctorate degree, as well as by strengthening the quality of the qualification,
- 6) renewing the infrastructure necessary for research and providing tools.

Among the third mission goals of higher education are social engagement, science popularization and knowledge dissemination. At the beginning of the Széchenyi 2020 (D6) program period, this area of activity was not so prominent in the life of the universities. (D3) However, through the mandatory elements of the institutional development plans that define the universities' strategic goals, and by

rethinking the accreditation process, the third mission activities gained importance by the end of the program. The Graduate Change in Higher Education (D3) policy document defines the following objectives related to the third mission (D3):

- 1) strengthening the impact of higher education on local economic development,
- 2) increasing the activity of higher education institutions in dealing with social challenges and spreading social innovation,
- 3) expansion of science popularization, knowledge dissemination and attitude shaping services and increasing free access to higher education knowledge bases,
- 4) creation of up-to-date information content and wide provision of access,
- 5) strengthening the service functions of higher education towards both students and local society.

The EFOP (D1) resources support these goals not through separate calls but by incorporating third mission-related activities into various calls. It aims to develop human resources, support lifelong learning (Evaluating measures to support lifelong learning in light of relevant EFOP interventions, 2023), implement Smart City concepts (in the call EFOP-3.6.1), develop and expand knowledge bases, and promote higher education sports (in the call EFOP-3.4.3) with the inclusion of cultural dissemination as a horizontal element (in the calls EFOP-3.6.1 and EFOP-3.6.2).

Innovation, infrastructure support, and the realization of these goals presuppose the development and growth of the economy, which has been a goal set for two thousand years. In the 2010s, the concept of sustainable growth was added to economic growth (Kókuti, 2022).

The regional economic role of higher education institutions and universities operating in individual regions has become more and more important in recent decades. However, this development takes place differently in time and space even today. The contribution of universities to economic growth goes beyond the classical educational role (Erdős and Veréb, 2020). In addition to the educational activity, the scope of research, development and innovation (R + D) responsibilities has appeared, and the so-called third mission activity is gaining more and more emphasis.

The formation and operation of the knowledge-based economy in the past period radically changed the relationship between science, innovation and economic performance. The success of innovation systems lies in the research and development and innovation cooperation of the actors of the systems, i.e., the organizations specialized in research and the enterprises participating in the innovation process. (Inzelt, 2004)

Innovation has become the central mission of universities (Halász and Horváth, 2017). Achieving innovation goals requires capital, human resources, and collaboration. Universities play a key role in bridging academic knowledge with industry and civil society, leading innovation ecosystems and advancing the development of a sustainable and digital world (Balázs et al., 2021). This vision for the future must be strengthened.

The EFOP (D1) defines the objectives of the Partnership Agreement (D9) to ensure sustainable, high added-value production and economic growth based on the expansion of employment in the form of contributions by increasing human capital and improving the social environment through the following intervention directions:

- 1) Social catch-up,

- 2) Strengthening the social role of the family and strengthening social cohesion,
- 3) Health promotion and disease prevention, health improvements,
- 4) Improving the quality of public education, with special regard to reducing school leaving without a qualification,
- 5) Increasing the number of people with higher education who can adapt to changes in the labor market,
- 6) Strengthening of supply in quantity and quality among those working in humanitarian institutions and in research and development,
- 7) Mental health and renewal horizontal initiative,

Higher education appears in the field of interventions serving this goal system of the EFOP (D1), however, not all goals appear directly in the individual calls.

### **3.2. Széchenyi plan plus**

The basic document for the 2021–2027 programming period is the Partnership Agreement 2021–2027 (D10).

The new strategic goal appearing in the Partnership Agreement (D10) is the goal of green, digital, sustainable recovery. The content development of higher education, the operation of continuing education and incentive systems, and the increase of equal access to education and training are supported in the Széchenyi Plan Plus program (D7) within the framework of GINOP Plus (D4). In EFOP Plus (D2), programs supporting the training and further training of teachers are implemented in the field of public education.

The Partnership Agreement (D10) establishes a strategic objective to leverage the knowledge resources available within higher education for development and implementation of the smart specialization strategy and local economic strategies. This approach aims to promote progress in international value chains. Facilitating cooperation of the actors participating in the “quadruple helix” (Carayannis, 2009) allows for the stimulation of the economy and regional development.

In the Partnership Agreement (D10), higher education appears most prominently in the 4th “more social and inclusive Europe” policy objective.

The Partnership Agreement 2014–2020 (D9) and Partnership Agreement 2021–2027 (D10) plan to implement the support of higher education programs that encourage lifelong learning in the Horizon programs (Szabó, 2019). One key area of focus is the promotion of equal access to high-quality education, which is a fundamental right. Additionally, it is essential to enhance the skills and expertise of pedagogical and professional staff to ensure that they can effectively support the learning needs of all individuals.

The Széchenyi Plan Plus (D7) includes several operational programs, whose titles are similar to those of previous operational programs, with the addition of “Plus” to their names. By reviewing the operational programs under the Széchenyi Plan Plus (D7), it can be seen that EFOP Plus (D2) focuses on supporting vocational training and reducing social inequality and poverty but does not specifically target higher education development. Of all the programs in the Széchenyi Plan Plus (D7), only GINOP Plus (D4) identifies higher education and the corporate sector (Lee-Davies, 2018) as a primary target group.



Within the framework of GINOP Plus (D4), higher education and vocational training interventions are aimed at reducing dropout rates and inclusion.

From the point of view of higher education, the following main goals are to highlight in GINOP Plus (D4):

- The proportion of young people aged 15–29 who are not in education or employment is decreasing.
- The population’s education level is improving, with comprehensive access to quality, inclusive, and fair education, and the children’s chances for further education are improving.
- The proportion of students obtaining degrees at levels 5–8 is increasing, and the dropout rate at these levels is decreasing.
- The proportion of employees with recent higher education qualifications is increasing.
- The proportion of applicants from disadvantaged/underrepresented groups to higher education courses and participants in courses is increasing, particularly for students with disabilities.

The GINOP Plus (D4) lays the foundation for economic growth by focusing on several key areas. These include enhancing the competitiveness of small and medium-sized enterprises, driving innovation through research and development, and developing digital skills. Additionally, the program aims to prepare current and future employees for the challenges of the modern, rapidly changing economy by providing training and education in higher education and vocational settings. Additionally, GINOP Plus (D4) aims to strengthen the labor market by actively involving young people, job seekers, and individuals who are currently inactive. The initiative focuses on equipping these groups with new skills and enhancing employment conditions. The program’s goal within the context of higher education is to enhance the quality, effectiveness, and relevance of educational programs while promoting the acquisition of essential digital skills. Achieving this goal requires fostering competitive and innovative higher education, enhancing the social and economic relevance of higher education, and improving the quality and labor market relevance of vocational training. The program also aims to support quality, inclusive education, particularly for disadvantaged groups, to promote inclusive higher education and strengthen vocational training that compensates for social disadvantages.

The second priority, “Research, development, innovation” is related to the R&D tasks of the universities. The interventions of the priority axis are aligned with the S3 Smart Specialization Strategy of Hungary (D11). In alignment with this objective, GINOP Plus (D4) plans to support small-scale innovation projects that facilitate the active involvement of university participants within the innovation ecosystem, leveraging their roles in training and knowledge transfer.

The fifth priority, “Higher education, vocational training”, aims to strengthen the higher education system, enhance the quality and labor market relevance of vocational training, and improve its capacity to address social inequalities, ensuring a workforce capable of generating high added value. The initiative focuses on improving continuing education and ensuring equitable access to inclusive higher education and vocational training, especially for disadvantaged groups. To increase student success,

mentor programs provide support to (disadvantaged) students, helping them avoid dropping out.

In the operational programs of the Széchenyi Plan Plus (D7) concerning higher education, the defining policy instrument is also the “Graduate Change in Higher Education” (D3), in which the target date of 2030 is no coincidence beyond the EU planning cycle. Higher education is a hard-to-change system, and any substantial transformation takes a long time. The 2030 date allows the necessary professional objectives and the actions that can be derived from them to be formulated much more characteristically. Most of the latter must have been implemented already in the programming period of Széchenyi 2020 (D6) in order to achieve the long-term goals.

Strategies and practices aimed at fostering economic sustainability and growth focus on efficiently managing budgetary processes. This includes integrating social and economic indicators into performance evaluation systems to measure the impact of budget governance on public welfare. Additionally, the strategies consider the needs and interests of diverse target groups during the budget allocation processes. (Ismailova et al., 2024)

### **3.3. Analysis from the aspect of sustainability**

Higher education institutions can play a crucial role in achieving the Sustainable Development Goals (SDGs) by 2030 by integrating economic, social and environmental strategies, thus acting as hubs for knowledge creation, innovation, and societal transformation (Shava et al., 2023)

The research and programs supported by the EFOP (D1) can contribute to achieving the Sustainable Development Goals (SDGs) by fostering innovation. As the projects address growing economic, environmental, and social sustainability expectations, they must incorporate innovative solutions to meet these demands. This innovation can be seen in the technical content developed in the products, services, or facilities created as a result of the project, as well as in the procedures and methods used during the project’s processes. Additionally, the marketing tools and organizational solutions developed to showcase the project’s results can also contribute to achieving the SDGs (Szabó et al, 2017).

In a previous study, we examined the target systems in individual calls for tenders (Halmai et al., 2024). In this study, we first present the sustainability aspects defined within the target system of each call. Content analysis was carried out on the calls, where higher education institutions were listed as beneficiaries. **Table 2** displays the elements of the examined EFOP (D1) calls that support educational and research goals, as well as their alignment with SDG objectives and the three missions of universities. In the first column of **Table 2**, the call code numbers are determined by the announcement of the calls, where the first three digits refer to the primary goal of the call, and the second two digits indicate the year of publication. The structure of the calls in **Table 2** follows the division of the main support priorities defined by the calls (Halmai et al., 2024). The first block lists educational innovation calls (EFOP-3.4, EFOP-3.5, EFOP-4.2), while the second block lists Research and Development calls (EFOP-3.6).

**Table 2.** Emergence of sustainability goals in Széchenyi 2020 EFOP programs.

| Call code number | Title of the call  | Emergence of sustainability goals   | Related eligible activity/indicator  |
|------------------|--|---|--|
| EFOP-3.4.3.-16   | Higher education institutional developments in higher education in order to simultaneously improve its quality and accessibility   | Reasoning and purpose of the call: To expand the knowledge and positive connection of students and institutional workers regarding sustainable development, and for this purpose, to incorporate the Sustainable Development Goals formulated by the UN into the training and operational processes.<br>Evaluation criteria: Financial sustainability | SZE_10 Incorporating the UN Sustainable Development Goals into the educational or operational process  |
| EFOP-3.4.4-16    | The skill development and implementation of communication programs, as well as STEM courses popularization in higher education   | Evaluation criteria: Financial sustainability   | not listed   |
| EFOP-3.5.1-16    | Dual and cooperative higher education courses, higher education vocational training and development of specialized further training  | Evaluation criteria: Financial sustainability   | not listed   |
| EFOP-3.5.2-17    | Development of dual and practice-oriented higher education courses and educational innovation in the field of social work and helping professions as well as in the case of engineering pedagogy and professional teaching courses                                 | Evaluation criteria: Financial sustainability   | not listed   |
| EFOP-4.2.1-16    | Development of higher education infrastructure   | Evaluation criteria: Financial sustainability   | not listed   |
| EFOP-4.2.2-16    | Development of skill labs  | Evaluation criteria: Financial sustainability   | not listed   |
| EFOP-3.6.1-16    | Institutional developments for intelligent specialization<br>Thematic research network collaborations  | The justification and purpose of the call: to develop and conduct programs that encourage sustainable development, to ensure the participation of higher education institutions in sustainable rural development and developments in the environmental and nature conservation sector.  | SZE_13 Environmental-social-economic challenge incorporated into a research topic, thesis or doctoral dissertation, topics for problem understanding and handling in addition to exploration or issues related to regional social innovation and sustainable development |
| EFOP-3.6.2-16    | Higher education institutional developments in higher education in order to simultaneously improve its quality and accessibility<br>The skill development and implementation of communication programs, as well as STEM courses popularization in higher education | Evaluation criteria: Financial sustainability   | not listed   |
| EFOP-3.6.3-16    | Dual and cooperative higher education courses, higher education vocational training and development of specialized further training  | Evaluation criteria: Financial sustainability   | not listed   |

Sustainability does not appear as a separate goal in individual calls for tenders. Sustainability as a goal does not necessarily appear directly among the call's objectives. However, there are tools that serve the purpose of sustainability. Economic sustainability is inherently focused on achieving financial stability, fostering

innovation and entrepreneurship, and investing in the local economy (Rasli et al., 2024).

According to Rasli et al. (2024), two key conditions for the sustainability of higher education institutions are educational reform and digital transformation. A third critical aspect is resilience and change management. This study examines how eligible activities for educational innovation (as a form of educational reform) and digital transformation are represented. It becomes evident that these two components, which contribute to sustainability, do not explicitly appear as direct goals in calls aimed at R&D innovation. However, they are present in calls where educational innovation is the primary focus. The results are shown in **Table 3**.

**Table 3.** Eligible activities for educational innovation and digital transformation in Széchenyi 2020 EFOP programs.

| Call code number | Title of the call  | Eligible activities for educational innovation   | Eligible activities for digital transformation   |
|------------------|--|--|--|
| EFOP-3.4.3.-16   | Higher education institutional developments in higher education in order to simultaneously improve its quality and accessibility.    | <p>Educational value chain: Educational innovation—modernization of higher education training structure, method, content, increasing labor market relevance.</p> <ul style="list-style-type: none"> <li>• Ensuring skill and practical orientation</li> <li>• Skill-oriented curriculum transformation.</li> <li>• Development of digital skills.</li> <li>• Training programs for trainers.</li> <li>• Channeling services that support student knowledge into library knowledge.</li> <li>• Curriculum revisions.</li> </ul> | <p>Development of students’ digital competences and their ability to acquire and manage information.</p> <ul style="list-style-type: none"> <li>• Monitoring of learning results related to interactive online courses is possible</li> </ul> <p>experimental installation of tools and applications and development of new ones; digitization of library services; digitization of higher education administration.</p> |
| EFOP-3.4.4-16    | The skill development and implementation of communication programs, as well as STEM courses popularization in higher education.      | <p>Educational value chain: Enrollment, career guidance, preparatory courses, institutional preparation.</p> <p>Programs promoting admission to higher education-STEM.</p> <p>Training programs for trainers.</p> <p>Optional e.g.—Development of E-Learning contents.</p> <p>Professional support activities (methodological developments, research).</p>   | <p>Development of e-learning services, use of quality electronic teaching materials, digital teaching tools.</p> <p>Development of e-learning contents and increasing their access curriculum development use of a digital application.</p>  |
| EFOP-3.5.1-16    | Dual and cooperative higher education courses, higher education vocational training and development of specialized further training. | <p>Educational value chain: Working in a corporate environment.</p> <p>Development of content elements of cooperative collaborations.</p> <p>Creation of a dual system.</p> <p>Development of teaching tools and electronic teaching materials-for dual form.</p> <p>Training and Outcome Requirements—development of an evaluation and measurement system in line with the cooperative and dual training program.</p> <p>Including the development of skills required in the labor market in the curricula.</p>               | <p>Educational tools adapted to cooperative and dual forms of training, learning while working, electronic development of teaching materials and their adaptation in training, related digital content and teaching tool development in higher education.</p>  |

**Table 3. (Continued).**

| Call code number | Title of the call  | Eligible activities for educational innovation   | Eligible activities for digital transformation  |
|------------------|--|--|---|
| EFOP-3.5.2-17    | Development of dual and practice-oriented higher education courses and educational innovation in the field of social work and helping professions as well as in the case of engineering pedagogy and professional teaching courses.                                  | Extension of educational innovation in relevant majors.<br>Ensuring skill and practice orientation<br>Shared vocational teacher training—corporate vocational teacher training for dual vocational training.<br>Development of pedagogical methodology.<br>Skill-oriented curriculum transformation.<br>Development of content elements of cooperative collaborations. | Educational tools adapted to cooperative and dual forms of training, learning while working, electronic development of teaching materials and their adaptation in training, development of related digital content and teaching tools in higher education. Optional activity: development of e-learning services, use of quality electronic teaching materials, digital teaching tools.<br>Development of e-learning contents and increasing their access curriculum development digital application. |
| EFOP-4.2.1-16    | Development of higher education infrastructure.  | Modernization of practical educational environment<br>Infrastructural development/construction.  | Supporting infrastructural developments for the sake of digital competences.<br>Equipment acquisitions for digital competence development, network construction, procurement of mobile devices for library services.  |
| EFOP-4.2.2-16    | Development of skill labs.   | Healthcare sector—raising the standard of practical education—creating a skill lab.  | Not relevant  |
| EFOP-3.6.1-16    | Institutional developments for intelligent specialization. Thematic research network collaborations.   | Profile specialization, university and corporate + civil collaborations<br>social innovation.<br>Services and researchers for the needs of the R&D sector supply.  | In an indirect way: pedagogical innovation and the strengthening of digital pedagogy; infrastructure development (laboratories, industrial collaborations).   |
| EFOP-3.6.2-16    | Higher education institutional developments in higher education in order to simultaneously improve its quality and accessibility.<br>The skill development and implementation of communication programs, as well as STEM courses popularization in higher education. | Increasing the international embeddedness of basic research<br><br>*Rather an R&D goal than an educational innovation goal.  | In an indirect way-training content development: Purchase of teaching materials, teaching tools, e-learning content; or its development and execution.  |
| EFOP-3.6.3-16    | Dual and cooperative higher education courses, higher education vocational training and development of specialized further training.   | Support for the internal renewal of higher education institutions for the sake of quality academic resupply education.<br><br>*Rather an R&D goal than an educational innovation goal.   | In an indirect way-training/educational content development: purchase of teaching materials, teaching tools, e-learning content; or its development and execution.  |

Comparing the Széchenyi 2020 (D6) and Széchenyi Plan Plus (D7) programs it can be examined whether the elements for sustainability of higher educations are remaining in the new Fund Program as well. At the time the study was prepared, in August 2024, the calls for higher education support announced in the program were not yet available, so we were able to examine the elements aimed at sustainability within the Széchenyi Plus (D7) program in the GINOP Plus (D4) program-as the operational program supporting higher education. The examination of calls for tenders appearing in the Széchenyi Plan Plus (D7) program may form part of further research.

In GINOP Plus (D4), higher education support (excluding infrastructure) is included as a planned indicative element of the funding. The total amount of support is EUR 5,683,338 (D4).

Higher education institutions are included as professional cooperating partners with the corporate sector in the planned tender structure, but they are not directly listed as entities eligible for support

One of the planned activities aims to encourage professional cooperation between higher education institutions and businesses through vocational training centers by establishing training partnerships at the local and regional levels.

Among the sustainable development goals of the UN, the Program contributes to the following: the goal 4 Quality education; the goal 8 Decent work and economic growth; the goal 9 Reduced inequalities and goal 12 Responsible consumption and production.

Sustainability appears among the horizontal elements, the concept of sustainability is sustainable economy (appears as a direct goal, occurrence: 5 times), sustainable labor market (appears as a direct goal, occurrence: 3 times), sustainable investment (appears as a horizontal element, occurrence: 2 times) and appears as the concept of environmental sustainability (appears as an objective, occurrence: 4 times).

Emphasis is placed on explicitly supporting innovations in the tendering and evaluation of projects, with separate resources allocated for the continuation of existing programs and for rethinking or testing new ones.

### **3.4. Major findings**

The EFOP (D1) and GINOP Plus (D4) appearing in the Széchenyi 2020 (D6) and the Széchenyi Plan Plus Program (D7) differ in their support elements for higher education. While the EFOP (D1) directly supported the activities related to the three missions of the universities in a targeted manner, enabling a diverse range of activities to be funded through successful tenders, the GINOP Plus (D4) is already based on the fact that the universities have partnerships with corporate and industrial entities to achieve strategic goals and diversify funding sources (Nagy et al., 2022).

The Széchenyi 2020 (2014–2020) (D6) and Széchenyi Plan Plus (2021–2027) (D7) programs have evolved to support higher education institutions in Hungary by adapting key objectives and criteria to meet the changing landscape of higher education. Initially, the focus was on strengthening undergraduate programs (Betancourt, 2023), ensuring quality standards through institutional evaluations and accreditations (Özcan et al., 2022), and aligning programs with learning outcomes (Alyasin, 2023). However, there has been a shift towards addressing the needs of industry and organizations through technology management education (Tas and Yeloğlu, 2018), as well as developing capacity planning decision support systems (Makki et al., 2022) to enhance the quality of education and meet industry demands. This transition from focusing on strengthening undergraduate programs and ensuring quality through institutional evaluations to meeting industry needs is a significant development. It aligns with the global trend of integrating Sustainable Development Goals (SDGs) into educational frameworks. Although sustainable development was not explicitly highlighted in the EFOP programs, elements contributing to

sustainability—particularly in digital education and resilience—became evident due to the rapid adaptation required by external factors such as the COVID-19 pandemic (Jarjabka et al., 2024). Rapid adaptation to external conditions also necessitates resilience, a key factor in sustainability. During the planning of the Széchenyi Plan Plus (D7), digital transformation was emphasized primarily in relation to disadvantaged areas, while sustainability was addressed through support for a sustainable economy and labor market in the higher education target system.

Moreover, there is an increasing emphasis on outcome-based systems to ensure accountability and improve institutional effectiveness (Alyasin, 2023). This change is in line with the global trend of educational programs with Sustainable Development Goals, indicating a broader commitment to societal and environmental sustainability within higher education institutions. Moving forward, these changes signal a transformation in the Hungarian higher education landscape, characterized by curricula more aligned with industry needs, outcome-oriented educational practices, and a greater focus on sustainability and societal impact.

#### **3.4.1. Limitation and further directions**

At the time of the research the calls in GINOP Plus (D4) have not been announced. That is the reason why only the different calls of the EFOP (D1) could have been examined and analyzed in the study. The analysis of tenders that will appear later in GINOP Plus (D4) offers a potential topic for further research, and another study could explore the impact of strategic directions formulated in strategic documents and operational programs on higher education institutions.

Based on the funding distribution, universities received significant financial support during the Széchenyi 2020 (D6) programming period (Evaluation of measures aimed at entering and staying in higher education, 2022). To access these funds, universities needed to align their institutional strategic goals with the objectives outlined in the calls. The basic priorities were also reflected in regulatory requirements, such as the rethinking of accreditation processes, meaning universities had to adapt both for funding and regulatory reasons. Toward the end of the programming period, there was an increased emphasis on engagement within the ecosystem and developing corporate partnerships. This strategic direction is reinforced in the Széchenyi Plan Plus (D7), where universities are positioned as corporate consortium partners within the GINOP Plus (D4).

#### **3.4.2. Conclusion**

The comparison between the Széchenyi 2020 (D6) and Széchenyi Plan Plus (D7) programs highlights a significant evolution in the approach to supporting higher education institutions in Hungary. Both development programs have the same basic document in OFTK (OFTK, 2014) that determines the main strategic goals until 2030. However, there are significant differences in the objectives of the two programs. While the Széchenyi 2020 (D6) offered targeted support for university activities, enabling comprehensive funding through the goal system of each call, the Széchenyi Plan Plus has shifted focus to fostering partnerships between universities and corporate entities. This transformation is essential for meeting contemporary educational demands and ensuring the sustainability of higher education in an increasingly competitive landscape.

The transition from a focus on institutional strengthening to a model that prioritizes industry relevance, educational innovation, and sustainability reflects a broader commitment to enhancing the quality and impact of higher education in Hungary. As these programs evolve, they not only promise to reshape the educational landscape but also prepare graduates who are equipped to navigate the complexities of the job market and the changing industrial and economic environment.

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**Conflict of interest:** The authors declare no conflict of interest.

## Documents

- D1 Emberi Erőforrás Fejlesztési Operatív Program [Human Resources Development Operational Program—EFOP] [https://ec.europa.eu/regional\\_policy/in-your-country/programs/2014-2020/hu/2014hu05m2op001\\_en](https://ec.europa.eu/regional_policy/in-your-country/programs/2014-2020/hu/2014hu05m2op001_en)
- D2 Emberi Erőforrás Fejlesztési Operatív Program Plusz [Human Resources Development Operational Program Plus—EFOP Plus] <https://www.palyazat.gov.hu/programok/szechenyi-terv-plusz/efop-plusz>
- D3 Fokozatváltás a felsőoktatásban középtávú szakpolitikai stratégia [Graduate Change in Higher Education] (2016) [https://2015-2019.kormany.hu/download/c/9c/e0000/Fokozatvaltas\\_Felsooktatásban\\_HONLAPRA](https://2015-2019.kormany.hu/download/c/9c/e0000/Fokozatvaltas_Felsooktatásban_HONLAPRA)
- D4 Gazdaságfejlesztési és Innovációs Operatív Program [Economic Development and Innovation Operational Program—GINOP]. <https://www.palyazat.gov.hu/programok/szechenyi-2020/ginop>
- D5 Gazdaságfejlesztési és Innovációs Operatív Program Plusz [Economic Development and Innovation Operational Program Plus—GINOP Plus]. <https://www.palyazat.gov.hu/programok/szechenyi-terv-plusz/ginop-plusz>
- D6 Széchenyi 2020 Program [Széchenyi 2020 Program] <https://www.palyazat.gov.hu/programok/szechenyi-2020>
- D7 Széchenyi Terv Plusz program [Széchenyi Plan Plus] <https://www.palyazat.gov.hu/programok/szechenyi-terv-plusz>
- D8 Széchenyi Terv Plusz értékelései [Evaluation of Széchenyi Plan Plus] <https://www.palyazat.gov.hu/informacio/elemzesek>
- D9 Partnerségi Megállapodás 2014–2020 [Partnership Agreements 2014-2020] (2014) <https://archive.palyazat.gov.hu/partnersegi-megallapodas> (letöltés: 2024.05.07)
- D10 Partnerségi Megállapodás 2021–2027 [Partnership Agreements 2021-2027] (2022) chrome-extension://efaidnbmnnnibpcjpcglclefindmkaj/<https://commission.europa.eu/system/files/2023-03/Elfogadott%20Partners%C3%A9gi%20Meg%C3%A1llapod%C3%A1s%2021-27.pdf>
- D11 Nemzeti Intelligens Szakosodási Stratégia [S3—Smart Specialization Strategy of Hungary]—1428/2021. (VII. 2.) Government

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