**Not Peer-reviewed** 



**ESI** Preprints

# European Universities Best Practices: The Case of INVEST EU Alliance

Konstantinos Kokkinos, PhD Nicholas Samaras, PhD Omiros Iatrellis, PhD Digital Systems Dept., University of Thessaly, Larissa, Greece

#### Doi: 10.19044/esipreprint.1.2024.p135

Approved: 08 January 2024 Posted: 10 January 2024

Copyright 2024 Author(s) Under Creative Commons CC-BY 4.0 OPEN ACCESS

Cite As:

Kokkinos K., Samaras N. & Iatrellis O. (2024). *European Universities Best Practices: The Case of INVEST EU Alliance*. ESI Preprints. https://doi.org/10.19044/esipreprint.1.2024.p135

#### Abstract

Established in 2018, the European Universities Initiative (EUI) strives to foster collaboration and integration among higher education institutions across Europe. The EUI's core objectives encompass forging transnational alliances, facilitating mobility, championing multidisciplinary approaches, celebrating linguistic diversity, advancing innovation and research, prioritizing student-centered learning, and nurturing long-term sustainability. Central to this initiative is the enhancement of education quality and the promotion of student-centric learning methodologies. Within the scope of the EUI, the INVEST European University stands out as one of the 47 integrated alliances, endorsed by the European Commission. INVEST is dedicated to crafting distinctive collaborative educational paradigms that contribute significantly to regional progress and sustainability. This paper provides a comprehensive overview of the INVEST Joint Education Model, showcasing a range of excellent practices that position the alliance as a key player in the European educational landscape. Specifically, this paper delves into the strategic quality assurance framework, the unified pedagogical approach supporting diverse educational products, the dynamic collaborative platforms like living labs that engage stakeholders and serve as experimentation grounds, the enriching fellowship programs, faculty and student mobility initiatives, eco-friendly digitalization of services, and innovative entrepreneurship and internationalization processes. This study

not only offers insightful recommendations but also tangible real-world examples for instructional and support staff navigating the realm of digital transformation within inter-institutional partnerships.

**Keywords:** European, Universities, quality, assurance, mobility, joint, pedagogy, digitalization, regional, development, living, labs, sustainability

### Introduction

Collaborations between Higher Education Institutions (HEIs) are expanding and have the potential to enhance innovation, inclusion, mobility, academic teaching, and university competition, (Charret and Chankseliani, 2023). In order to meet the significant socioeconomic concerns of the twenty-first century, make the transition to a more digitally advanced society, and get ready for the fourth industrial revolution, EUIs are a crucial strategic driver for HEIs (Broo, Kaynak and Sait, 2022) and international higher education organizations (Asgharzadeh, 2023). The demand for innovative educational transformation projects to accomplish interinstitutional educational goals has grown as a result of growing HEI cooperation. Therefore, best practices for this area of educational digital transformation are needed.

At the same time, HEIs are required to equip students, employees, and researchers with the skills necessary to successfully manage the sustainable and digital transformations and create a resilient society due to the rapidly changing labor market and societal transitions. Universities are important players in Europe, able to handle significant societal concerns, evolve into real engines of urban and regional development and foster citizen participation in addition to their main responsibilities of teaching, research, and innovation Bertoletti et al., 2022). The following characteristics, which became the core tenet of the European University concept, are highlighted in the European Commission's vision for the formation of the European Education Area (Asderaki, F., 2022): Mobility for education should be a standard, educational institutions and university study should be discernible and quantifiable throughout the EU, speaking one more language in addition to one's mother tongue should be a standard, and everyone deserves accessibility to higher education regardless of their social or economic circumstances. It is important for citizens to feel connected with the multitude of cultures and historical significance of Europe. This necessitates considerably greater levels of collaboration between institutions and their regional innovation ecosystems. By promoting excellence, innovation, and inclusion in HEIs across Europe, the European Commission hopes to hasten the transformation of current European University Alliances into the universities of the future that will have a fundamental, institutionalized, and long-lasting impact. In this paper, we present the INVEST EUI model for joint education. INVEST stands on a few core features and innovative ways of structuring courses and offering its educational assets to students and lifelong learners: competence based education, Living Labs, a virtual campus, EDUC8EU (Iatrellis et al., 2023), embedded mobility foundation, a concrete quality assurance system, innovative fellow programs, entrepreneurship and internationalization are the traversal key sectors and cornerstones of the INVEST ecosystem impacting all its internal and external regional and European level stakeholders.

The INVEST Joint Education model is merely one part of a robust engine that depends on a number of other essential characteristics originating from other INVEST EUI alliance components (Figure 1). These components will be illustrated in section two and three of this manuscript. In parallel, a solid technical infrastructure, streamlined administrative processes, staff training, effective communication strategies, and marketing campaigns to raise awareness of our educational model are also necessary for its implementation and operation, in addition to the qualifications, motivation, and skills of its academic and administrative staff. The international component of INVEST, which is a key feature of our model, since it gives the ability to students and faculty from any place in Europe to become part of a multicultural environment and collaborate with many other colleagues of common interests. However, the model comes with new difficulties and challenges, like those associated with various higher education legislation at the national and EU levels, which call for the direct participation of the Commission and the member states.



Fig. 1. Key aspects of INVEST

Following the European Education Area directive to establish a unique HEI framework by 2025, the INVEST EUI Alliance seeks to provide high-quality education with a positive impact on research, student employability on highly specialized jobs, and societal advancement at the national and European level. Furthermore, INVEST highly promotes a holistic, high-quality and inclusive approach to education that ensures all participants have access to the opportunities and tools they need to succeed. The alliance is made up of five partner universities. It is pursuing a cooperative plan to assist the transformation of education in a society that is inclusive through green digitization and urban and regional development.

INVEST members are: (a) the Slovak University of Agriculture (SUA) in Nitra Slovakia, the University of Agribusiness and Rural Development (UARD) in Plovdiv Bulgaria, the University of Thessaly (UTH) in Volos Greece, the Karelia University of Applied Sciences (Karelia UAS) in Joensuu, Finland, and finally the Van Hall Larenstein, University of Applied Sciences (VHL) in Leeuwarden and Velp Netherlands. In this paper, we focus on the intrinsic characteristics of the INVEST higher educational model and outline its fundamental components as best practices, showing how they foster inclusive and competence-based learning for jointly designed and taught and operated degrees for Bachelor's, master's and PhD programs.

### **INVEST Educational Model**

The INVEST EUI Alliance aims at strengthening the link between teaching, research, innovation, and knowledge transfer focusing on the innovations of regional sustainability. The alliance has as major objective to create a modern European university that meets the needs and requirements of the new generation of Europeans as leaders in introducing sustainable life in regions across Europe. By 2025, INVEST will be recognized as an inclusive higher education institution, implementing a personalized and competence based pedagogical approach, and focusing on flexible curricula and individual learning paths. By 2040, INVEST will focus on: (a) sustainable cooperation for education, (b) research, innovation, and knowledge transfer, and (c) raising the quality and competitiveness of participating universities and contributing to the economic, social, cultural, and environment-friendly sustainable development of European regions. The alliance's basic principles include:

- Trust among participating universities,
- Respect for academic autonomy,
- Maximizing quality of education and research,
- Maximizing the usefulness of university activities for the development of the European economy,

- Enhanced partnership with stakeholders in regions,
- Stimulating mobility of students, teachers, and researchers,
- Joint and flexible curricula such as lifelong learning forms,
- Impact analysis and assessment of existing courses and
- International accreditation of universities in the alliance.

## A. INVEST pedagogical features.

All INVEST study programs fulfill the following characteristics:

- They are innovative, international, high quality, and near by the cutting-edge technology and European sustainability issues. At the same time all programs contain embedded mobility.
- There is involvement of the real world: labor market and stakeholders are involved in the development and delivery of the programs.
- They are personal, inclusive, and flexible towards students.

The dimensions of the INVEST educational methods that we distinguish are based on the following characteristics:

- Student-centered approach.
- Real-world learning / competence based.
- Challenge-based education geared towards problem-solving.
- Multidisciplinary, trans-disciplinarity and/ or cross-disciplinarity approach of regional development and sustainability issues.
- Blending the integrated role of conventional and applied research.

Independent from the outcomes of the work field consultations to be held, we also identify the following core competence fields that give direction to the curriculum design and content of the INVEST degree programs.

- Competences in the field of sustainable regional development.
- Entrepreneurial competences, including Corporate Social Responsibility (CSR).
- Research and problem-solving competences.
- Transdisciplinary/Transversal competences.
- Communication and social interaction competences.
- Intercultural competence field, including cultural awareness, multilingual and internationalization.
- Competences on self-managing, personal development, intrapersonal skills, digitalization.
- Specific key competences related to the degree and discipline, in consultation with the working field.

As a result, built upon a shared vision for education, a transparent and uniform framework applied to degree programs ensures equality among students, both in terms of their study abilities and their ability to fully leverage the opportunities that INVEST aims to provide in alignment with individual student needs. The path from qualification profiles and competences to assessments, culminating in education, is illustrated in Figure 2 below:



Fig. 2. The Body of Knowledge and Skills, (BoKS) in the road from qualification profile and competences to assessments in INVEST

### **B.** *INVEST Bachelor specializations.*

The development of the bachelor's degrees (structure of degrees and the realization of the educational model) can be seen as a multi-stage process:

<u>Stage 1</u>: Development of five specialized bachelor's degrees, each hosted by one of the partner universities. These degrees are based on the fourth year of an existing program and focus on regional sustainability. These one-year specializations include 30 ECTS of coursework and 30 ECTS of research within the INVEST Living Labs. Students spend a year abroad and receive both their home institution's degree and an INVEST specialization diploma.

<u>Stage 2</u>: Development of another five degrees, one at each partner university, following the same model. The alliance will collaboratively create a module portfolio for these programs, emphasizing competence-based learning.

<u>Stage 3</u>: Gradually expand the one-year specializations introduced in Stage 1 to two-year programs for all Phase-1 and Phase-2 bachelor's degrees or a significant subset, as they gain popularity among European students.

Later Stages: Continue adding modules to existing programs and introducing new bachelor's programs, potentially leading to INVEST's full

utilization of the alliance's capacity or even establishing INVEST as an independent university. The structure of the bachelor degree specializations is shown in Figure 3 below:

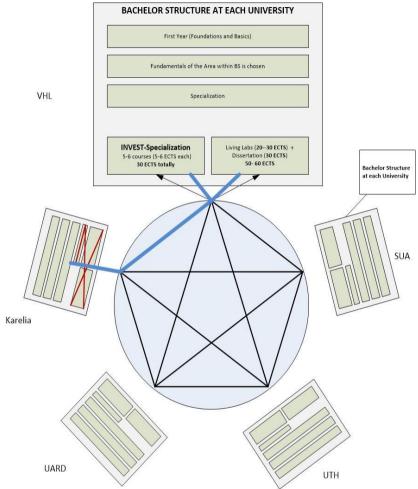


Fig. 3. Structure of the bachelor's degree program specializations

### C. INVEST postgraduate programs.

The Alliance introduced four master's degree programs, to enhance students' expertise in INVEST-related topics and address complex issues in the regions at hand. These programs, focusing on advanced research and problem-solving skills, are designed to attract students from diverse backgrounds and countries. The programs are collaboratively developed by INVEST partners, adhere to European standards for joint degrees, and require evidence-based learning. They offer student mobility, the opportunity to study at two different universities, and integrate language courses in host universities' languages to highlight the multicultural characteristic of the effort.

There are many advantages related to the joint design and operation of postgraduate programs: First, for the students as they gain exposure to diverse cultures and languages through studying in multiple institutions, experiencing sustainability problems in different regional contexts, and developing a European approach to complex problems. They also build a global network of professionals, researchers, and scientists for their future careers. Secondly for the faculty members as they can collaborate with partners to develop the master's programs, gaining a broader perspective on sustainability issues. The INVEST master's programs incorporate learning communities and the Living Labs methodology, providing new perspectives and expanding expertise. Faculty can also use mobilities for teaching at another partner university, provided that their expertise aligns with the master's subject. Finally, the newly introduced postgraduate degree methodology presents advantages for the Alliance institutions also. Partner universities save development time and investments by sharing common modules, ensuring seamless transfers, and offering more master's programs options. They also provide more opportunities for master's students outside their organizations, offering course elements in specializations not available by their faculty, and providing greater continuity in professional practice projects.

### **Quality Assurance**

The INVEST project emphasizes the importance of identifying target group needs, feedback systems, and research to ensure project sustainability. Quality assurance processes include fair assessment, transparent criteria, and student feedback. For the INVEST case we distinguish two separate cases of quality assurance processes: (a) internal quality assurance which refers to the quality of the INVEST project implementation and cooperation and (b) external quality assurance which refers to the INVEST university we designed.

Conditions and recognitions are of significant importance for both aforementioned cases. We require student progress, consistent admission policies and recognition procedures. The academic role of INVEST is evolving towards student-centered learning, and staff development. Thus, they are both essential for the internal as well as the external quality assurance. Resources for student support include physical and human elements, tailored to diverse student needs. Data collection focuses on key performance indicators, student satisfaction, and career outcomes. Regular program reviews and adaptations involving students and stakeholders ensure program relevance and quality.

## A. Internal quality assurance

The needs of the target groups, end users, and target sectors should be clearly identified throughout the project. This guarantees project sustainability and promotes a philosophy of advice, discussion, and investigation. INVEST has created official feedback systems that offer quantifiable data and guide project planning and execution. To pinpoint the project's novel features and define its goals, research and awareness of the target population has been done. All INVEST Alliance partners have embraced innovative components, which they have been evaluated against current quality requirements. This process of continuous evaluation via evaluation forms distributed among all involved partners and stakeholders will be an on-going process until the end of INVEST project operation while there will be an ongoing analysis process to improve project quality. We must note that the success and sustainability of the project depend on everyone's understanding of the work package's goals, tasks, and requirements. Thus, to improve project sustainability and partner satisfaction INVEST established a culture of respect and mutual consideration.

## B. External quality assurance

The following factors are taken into account for the quality assurance processes for assessment since they are crucial for tracking students' progress and careers: (a) the assessment allows students to demonstrate the extent to which the intended learning outcomes have been achieved, (b) students are given feedback, which, if necessary, is linked to advice on the learning process, (c) when possible, assessment is carried out by more than one examiner, (d) the regulations for the assessment are published in advance.

In terms of the conditions and recognitions needed for the external quality, it is in the best interest of individual students, programs, institutions, and systems to provide the circumstances and assistance required for students to advance in their academic careers, which is one of the key objectives of the INVEST project's quality assurance. When students are movable within and across higher education institutions as part of this EU University, having appropriate entrance, recognition, and completion procedures is crucial. The implementation of access policies, admission procedures, and criteria have been implemented and they are transparent and consistent. Furthermore, partner institutions have set up procedures and equipment to gather, monitor, and act on data on student development. Fair recognition of higher education qualifications, periods of study and prior learning, including the recognition of non-formal and informal learning, are essential components for ensuring the students' progress in their studies, while promoting mobility in INVEST. Appropriate recognition procedures in partners' countries are based on: institutional practice for recognition being

in accordance with the principles of the Lisbon Recognition Convention; cooperation with other institutions, quality assurance agencies, and the national ENIC/NARIC center in order to ensure consistent recognition across the country. Documentation describing the certification attained, the learning outcomes that were attained, and the context, level, content, and status of the studies that were undertaken and successfully finished are provided to students.

#### **Discussion Living Labs as Knowledge Initiators**

Studies on regional development and sustainability of urban and rural areas in Europe are crucial to promoting creativity in higher level education and society. Activities in education and research may be intended to address societal challenges and develop solutions for specific problems. "Living Laboratories" (Living Labs) present a significant opportunity to evaluate everyday activity and cooperatively explore possibilities by fostering contact between researchers and users. The Living Labs are a co-construction method introduced by INVEST Alliance universities to create student competencies and learning objectives for educational components in bachelor's and postgraduate education by resolving complex, multifaceted societal challenges (Figure 4).

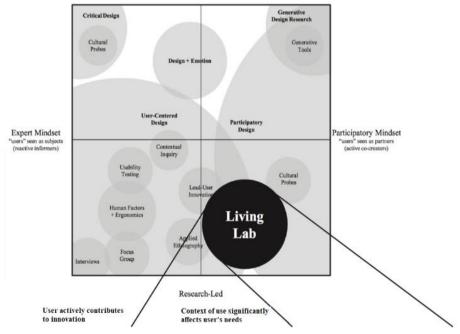


Fig. 4. The interconnection between the expert and participatory mindset in the Living Labs concept

Living laboratories have strong relationships to the areas they live, whether those areas are cities, regions, or university campuses. In an open innovation paradigm, which might be utilizer-driven, enabler-driven, provider-driven, or user-driven, they combine research and practice (Masseck, 2017). The benefit of a Living Lab approach is that it enables participants and stakeholders to engage in reflection that can lead to a variety of outcomes, including new knowledge for operations development, new knowledge to support operations development, new knowledge for product development and business development, and solutions for problems encountered in daily life that are always open-source or part of commons that are being developed (Filho et al., 2023; Andone et al., 2022).

### Student and faculty mobility

Academic mobility is a manner to internationalize the academic curriculum to foster learners' integral development. Student learners consider that the academic mobility significantly contributes to fostering disciplinary competences and technological and investigative skills. In INVEST the value of mobility of students and faculty is taken as one of the most important pillars in promoting European education. Equal value also relates to the following activities with the students/faculty once they return from their academic experience. In the following paragraphs we present the advantages related to students, faculty, the involved institutions and finally the countries of the institutions.

### A. Advantages for the students

One of the greatest advantages is the Diverse Learning Experience. By being exposed to many cultures, languages, and educational systems, students' horizons and perspectives are broadened. At the same there exists Education Enhancement. This is because students' academic experiences are enriched and given the opportunity to explore specialist topics thanks to access to courses and resources at partner universities. Students also gain Language Proficiency which is a key asset in today's increasingly interconnected world and is frequently enhanced by students studying abroad. The new adopted educational environment offers to students an increase of their Global Networking. It can be easily proven that, creating global networks can be a big help in their future professions by opening doors for collaboration and employment prospects. Students also gain Cultural Competency, which enhances their capacity to function in intercultural environments. Finally, we need to highlight the characteristic of Personal Development since, studying and living abroad encourage independence, flexibility, and resilience, all of which promote personal development.

### B. Advantages for the institutions' faculty.

For the faculty the most important advantage is the <u>Research</u> <u>Collaboration</u> since, faculty members can work together on research projects and publications with colleagues from affiliated institutions. At the same time, faculty members of different institutions become exposed to <u>Pedagogical Innovation</u> by observing various teaching philosophies and techniques can encourage pedagogical innovation. <u>International Recognition</u> is also another characteristic that comes with their mobility because, their reputations and international recognition can both be improved by their involvement in European Universities Alliances. Finally, the aspect of <u>Opportunities for Networking</u> holds also for them as for the students. Faculty members can broaden their contacts in the business world, which may result in new collaborations and research opportunities.

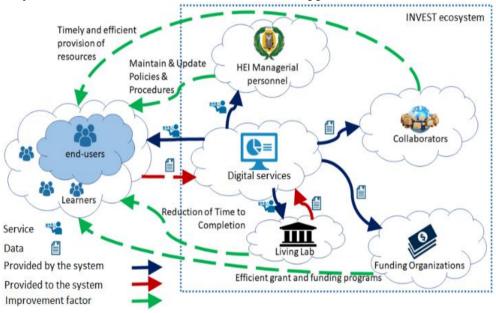


Fig. 5. EDUC8EU technical architecture

### C. Benefits to institutions and countries

Being a member of the European Universities Alliances can help an institution gain <u>Enhanced Reputation</u> and become known as a major player in international research and education. This also creates <u>Student Attraction</u> since it is simpler to draw in international students, which contributes to a diversified and active campus environment. The mobility of students and faculty brings <u>Collaboration with Partner Institutions</u> which can boost the output, impact, and visibility of research. At the same time, <u>Sharing Resources</u> can reduce costs and enhance infrastructure. This includes sharing

libraries, labs, and other facilities but also boosts *Institutional Learning and Continuous Improvement* by studying top practices at partner universities.

From the side of the participating countries, nations always look for the <u>Talent Retention</u> at their home country. However, through tuition and living costs, the presence of overseas students supports the community's economy and creates an <u>Economic Impact</u>. By collaborating among European Universities Alliances, research can be advanced, which is good for the nation's knowledge economy thus there is great <u>Research</u> <u>Advancement</u>. Finally, promoting international mobility encourages diplomatic efforts and <u>Cultural Interchange</u>, which improves relations between nations.

### The Invest Digitalization

The INVEST digital services represent fundamental components of the INVEST university. Leveraging advanced technologies such as AI, fuzzy logic, and semantic web technologies, these services aspire to revolutionize the educational landscape. They facilitate seamless information sharing within partner universities, across collaborators, living labs, adjunct faculty, and funding organizations. More importantly, they extend their reach across the entire INVEST ecosystem (Figure 5), with the ultimate goal of optimizing the educational process while concurrently minimizing associated costs. This strategic digitalization aims to position INVEST university as a prominent player within the tertiary sector, emphasizing functionality, effectiveness, sustainability, and competitive advantage. It achieves this by satisfying societal demands and enabling all stakeholders (partner universities, collaborators, funding organizations) to create shared value within a well-defined modeling framework (Porter and Kramer, 2018).

The EDUC8EU software platform represents a significant facet of INVEST's digital services. This intelligent academic advising system leverages cutting-edge technologies to offer tailored recommendations for students' educational journeys. EDUC8EU aggregates and analyzes data from diverse reputable sources, continuously enriching its database with information from widely recognized career inventories such as ESCO and o\*net classifications (Iatrellis, Kameas and Fitsilis, 2018) This knowledge repository supports INVEST European University programs at all academic levels, spanning bachelor, master, and doctoral offerings, along with extracurricular educational activities like Winter/Summer schools and living labs. EDUC8EU is designed to encompass the entire lifecycle of the academic advising process, providing a parameterizable toolkit to address diverse business and educational needs and scenarios. Designed to empower students with valuable insights into their chosen learning pathways, the system includes a powerful skill gap analysis component. By identifying

skill gaps early on, students can make informed decisions about their learning pathway selections. This strategic approach ensures that they are equipped with the necessary skills to excel in their chosen fields upon graduation.

The Virtual Campus (Figure 6) is yet another facet of INVEST's digital service offerings, serving as a cornerstone within the INVEST alliance. This secure, scalable, and contemporary application acts as a central gateway, supporting users across all partner universities. It facilitates collaborative development, encompassing joint degrees, courses, mobility programs, and training materials, including lifelong learning opportunities. The platform's primary objective is to digitalize and standardize educational and administrative processes across the alliance, simplifying registration and admission procedures. The Virtual Campus public website extends its services to guest and public users, providing extensive information on participating universities, available bachelor's and master's programs, course listings, instructor profiles, news, events, registration, login services, an online repository, FAQs, and contact information. Additionally, the platform integrates a range of built-in modules, enhancing team collaboration, process management, and overall productivity, establishing itself as an invaluable tool for INVEST's academic initiatives.



Fig. 6. INVEST's digital services ecosystem

### Internationalization

Political unpredictability and migratory flows all increased in Europe over the past ten years. European leaders have advocated for EU-wide policies that support social cohesion, integration, and equality throughout the continent during tumultuous political and social times. The European University Initiative (EUI), and especially INVEST as new flagship program for the internationalization of higher education throughout Europe, is one of the main actors in advancing European values and identity, contributing to quality assurance, and increasing the competitiveness of higher education in Europe via strategic and transnational collaborations.

At the same time, Europe has a long history of participating in the formation of strategic alliances, knowledge collaborations, and joint initiatives, thus cross-border education collaboration and mobility are nothing new to the continent. The Bologna process, the European Qualifications Framework, the common quality assurance, and the European Credit Transfer System were some of the initiatives that the European Education Area, which was the first vision to be implemented, focused on bringing together national higher education systems. The second vision included university consortiums, joint and double degrees, and international research networks in addition to shared standards. INVEST represents part of this second vision. The third and present vision places a strong emphasis on eliminating barriers from cross-border cooperation by establishing new institutions outside of existing national jurisdictions through the European Universities Initiative and through funding competition and diversity.

Along these lines, INVEST presents a new paradigm for global higher education in the EU as the ultimate higher education endeavor and a long-term plan (Estermann, Pruvot and Stoyanova, 2021). INVEST makes a great effort for promoting internationalization in higher education since 2020, highlighting its importance in response to the United Nations' Sustainable Development Goals. From the beginning of the INVEST project operation, all participants have made the shift for internationalization from a marginal aspect to a key element of reform strategies, driven by economic rationales and geopolitical changes. Key manifestations of INVEST internationalization include student and scholar mobility, reputation building, and a shift from cooperation to competition. INVEST represents the new European educational system supported by the "European Education Area 2025" that will not be hampered by borders with the objective of uniting Europeans to address social concerns, fill skills gaps, and boost the competitiveness of European higher education on the global stage (Brooks and Rensimer, 2023). To comprehend the consequences and impacts of the INVEST Alliance operation and whether these impacts coincide with the structural processes in European higher education, we distinguish three different scenarios in terms of building these processes:

(1) The <u>EUI Ivy League scenario</u> where EUI participants promote excellence through social cohesion, cooperation, and inter-European knowledge diplomacy. The consortiums will serve as representatives of the European level league and attract top talent. However, the EUI model's international competitiveness can lead to institutional isomorphism, with non-EUI universities forced to conform to an EUI-friendly model, reinforcing the divide between elite and mass education.

- (2) The <u>well-endowed EUI institutions scenario</u> (Accreditation Council for Entrepreneurial and Engaged Universities, 2020) where, the EUI supports existing strategic alliances and networks with better funding, often viewed as glorified strategic alliances. EUI funding is used to elevate existing alliances or consortia with well-funded universities, avoiding a "Matthew Effect" (Claeys-Kulik, 2019) and closing the innovation gap within Europe. It is not funding new alliances but rather existing ones.
- (3) The <u>European Status Quo scenario</u> where the EUI is focused on a convergent internationalization of all universities. The adaptation of the model throughout Europe sparks a new status quo in higher education, as participation is inevitable because of marginalization of non-involvement. The EUI becomes the model for all universities in Europe. Through forced participation, smaller countries and institutions are integrated into the whole EUI framework.

### Conclusion

Briefly summarize the most important conclusions and the take-home message of the article.

Sustainable education can be achieved through a variety of complementary activities and practices. The INVEST Alliance European University educational model incorporates a number of these described in the previous sections, providing fresh ideas for a more inclusive, egalitarian, and sustainable educational system to the European Higher Education Area. In order to transform higher education for the benefit of our ecosystem and all of its internal (students, staff, researchers) and external stakeholders (companies, local communities, the civil society at large), the INVEST model develops a holistic approach that integrates content, tools, pedagogies, joint bachelor and postgraduate degree programs, a portfolio of mobility channels, and a set of innovative teaching/learning environments. It has been found that blended mobility challenge-based project courses, which bring together students working remotely to address a problem posed by a corporation integrated in an international and interdisciplinary team, are particularly effective at fostering employability and internationalization.

Through internationalization at home (virtual mobility) activities that give students the chance to experience international contacts during their studies regardless of any barriers to international mobility they may face, a variety of structured bachelor specializations and master's programs, or more generally joint courses, can significantly boost mobility rates. These two real-world examples are only a couple of the many possibilities INVEST is investigating to revolutionize higher education and add a truly inclusive dimension. After 2020, there is a "new game" in the field of higher education thanks to the European Universities project and the altered social climate brought on by the covid pandemic in Europe. Due to this, European Universities now have a rare chance to drastically change the way higher education is delivered. All initiatives, and development of best practices correspond to a solid foundation for new universities to become part of the modern stream in higher education.

**Funding Statement:** Supported by the Erasmus+ European Universities Programme under the project INVEST: "INnoVations of REgional Sustainability: European UniversiTy Alliance" (Project No.: 101004073, www.invest-alliance.eu).

Data Availability: All the data are included in the content of the paper.

Conflict of Interest: The authors reported no conflict of interest.

#### **References:**

- 1. Charret, A., & Chankseliani, M. (2023). The process of building European university alliances: a rhizomatic analysis of the European Universities Initiative. Higher Education, 86(1), 21-44.
- 2. Broo, D. G., Kaynak, O., & Sait, S. M. (2022). Rethinking engineering education at the age of industry 5.0. Journal of Industrial Information Integration, 25, 100311.
- 3. Asgharzadeh, N. (2023). The role of English language as a medium of instruction in internationalization of higher education: a comparative study in Europe. Quarterly Journal of Research and Planning in Higher Education, 22(3), 89-111.
- 4. Bertoletti, A., Berbegal-Mirabent, J., & Agasisti, T. (2022). Higher education systems and regional economic development in Europe: A combined approach using econometric and machine learning methods. Socio-Economic Planning Sciences, 82, 101231.
- 5. Asderaki, F. (2022). The European Education Area (s): Towards a New Governance Architecture in Education and Training. In Higher Education and Research in the European Union: Mobility Schemes, Social Rights and Youth Policies (pp. 125-147). Cham: Springer International Publishing.
- 6. Iatrellis, O., Stamatiadis, E., Samaras, N., Panagiotakopoulos, T., & Fitsilis, P. (2023). An intelligent expert system for academic advising

utilizing fuzzy logic and semantic web technologies for smart cities education. Journal of Computers in Education, 10(2), 293-323.

- 7. Masseck, T. (2017). Living labs in architecture as innovation arenas within higher education institutions. Energy Procedia, 115, 383-389.
- Leal Filho, W., Ozuyar, P. G., Dinis, M. A. P., Azul, A. M., Alvarez, M. G., da Silva Neiva, S., ... & Vasconcelos, C. R. (2023). Living labs in the context of the UN sustainable development goals: state of the art. Sustainability Science, 18(3), 1163-1179.
- Andone, D., Vasiu, R., Bogdan, R., Mihaescu, V., Vert, S., Iovanovici, A., ... & Dragan, F. (2022, March). International Innovative Labs–I-Living-Labs. In 2022 IEEE Global Engineering Education Conference (EDUCON) (pp. 1480-1489). IEEE.
- Porter, M. E., & Kramer, M. R. (2018). Creating shared value: How to reinvent capitalism—And unleash a wave of innovation and growth. In Managing sustainable business: An executive education case and textbook (pp. 323-346). Dordrecht: Springer Netherlands.
- Iatrellis, O., Kameas, A., & Fitsilis, P. (2018, May). EDUC8: selfevolving and personalized learning pathways utilizing semantics. In 2018 IEEE Conference on Evolving and Adaptive Intelligent Systems (EAIS) (pp. 1-8). IEEE.
- Estermann, T., Pruvot, E. B., & Stoyanova, H. (2021). Evolving Models of University Governance: The Governance Models of the European University Alliances. [Online]. Available: https://eua.eu/resources/publications/963:evolving-models-ofuniversity-governance.html
- 13. Brooks, R., & Rensimer, L. (2023). The European Universities Initiative and European spatial imaginaries. Globalisation, Societies and Education, 1-14.
- 14. Accreditation Council for Entrepreneurial and Engaged Universities, 2020. Recognizing Excelence in Entrepreneurship, Internationalization and Engagement. [Online]. Available: https://www.aceeu.org/news/spotlightarticle/id/24
- Claeys-Kulik, A-L., 2019. The European Universities Initiative: Chances and challenges. European University Association Nov. 07, 2019. [Online]. Available: https://eua.eu/resources/expertvoices/134:the-european-universities-initiative-chances-andchallenges.html