Erasmus+

Final Report

Policies for universities and affected municipalities to enhance collaboration and incentivize local entrepreneurship

ENDORSE

DELIVERABLE IO4

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1. Introduction

Many regions throughout Europe are affected by a so-called brain drain - the outmigration of highly qualified people. In the wake of demographic change and a shortage of skilled labor, the situation is becoming increasingly acute, especially for smaller, more peripheral and structurally weaker cities and regions. In order to avoid being completely left behind by metropolitan regions and to maintain economic strength in the region, regions affected by brain drain must develop new strategies and measures to counteract this.

Some of the affected regions are university locations[1]. This offers certain advantages for these regions as universities can have a positive influence on the region's economy in various ways:

- Firstly, they are themselves economic players who are likely to make financial and non-financial investments in the region and employ people.
- In addition, they educate young people who will be available to the region as highly qualified employees after graduation if they can be retained there.
- Furthermore, knowledge is generated at universities. On the one hand, this knowledge can be utilized within the region to advance local conditions there and to strengthen the region's economic situation. On the other hand, this knowledge can be used to develop innovations and product and service ideas that lead to the founding of start-ups.

However, these advantages must also be utilized. To do this, the universities must establish and maintain a good network with regional stakeholders, such as local authorities, business development organizations, companies, schools and others. This is the only way for universities and regional stakeholders to work together to tackle region-specific problems such as brain drain and develop innovative strategies.

This is where the ENDORSE project comes in, focusing particularly on the possibility of promoting entrepreneurship in regions affected by brain drain. The project aims to involve universities in cities and regions affected by brain drain more closely in activities that shape the local business environment to make it more attractive to student entrepreneurs.

Building on the previous project findings and results, policies and strategies will be developed and presented this fourth intellectual output (IO4) for different regional situations. These policies and strategies include

- recommendations for policy measures to promote entrepreneurship,
- policy recommendations to prevent or mitigate brain drain and
- policy recommendation for reginal and local stakeholder regarding an increased cooperation with universities.

Based on these recommendations, regional stakeholders and decision-makers should be able to adapt policy measures to the regional characteristics and requirements of their specific region.

[1] When we speak of universities in this report, we also mean other types of higher-educations institutions, HEI, (e.g. university of applied sciences, universities of arts).

The following chapter, Chapter 2, describes the approach and methods used to derive recommendations on the topics mentioned above. Chapter 3 contains the analyzes carried out and findings from the course of the project. In addition to the findings from the literature and policies, the results of the round tables and UniCity events as well as the student survey are presented here. Finally, conclusions are drawn in Chapter 4 and recommendations for promoting entrepreneurship, preventing brain drain and increasing cooperation with universities are outlined.

2. Approach and methodology

The reduction of brain drain and the promotion of entrepreneurship are complex issues that depend on many different conditions and circumstances. Firstly, it must be clarified how the brain drain came about. Why do highly qualified people leave a certain region and why is the region not able to attract highly qualified people from outside the region? The reasons can vary greatly depending on the region and the regional conditions. They can range from available job opportunities in various industries to a sense of belonging and connection to the region (Albrecht/Scheiner 2022). The same applies to the promotion of entrepreneurship. Accordingly, the possible solutions or strategies are just as varied. In order to be able to provide recommendations for action both in general and for different types of regions, the first step is therefore to collect various general strategies and measures. For this purpose, a mixed methods approach was chosen. The various methods used are briefly presented below.

The topics of 'brain drain/brain gain', 'entrepreneurship' and 'the role of the university in the region' have been analyzed many times in the academic literature. The first step was therefore to collect and review scientific contributions on these topics, followed by a summary of the recommendations proposed therein. These summaries provide an overview of the general strategies and measures suggested by the academic literature.

The next step was to collect actual policies and strategy documents being pursued by the various regional units. On the one hand, action plans and measures envisaged by the EU to combat the 'brain drain' and promote 'entrepreneurship' were analyzed at European level. On the other hand, the universities involved in the project compiled country-specific policies for Austria, Germany, Poland, Sweden, Latvia and Greece and the respective university regions. A table was used for this purpose, which was filled in by all partners (see Appendix 5). This table enabled a quick overview of the various policies to be obtained, comparisons to be made and gaps to be identified.

In addition to the literature review, empirical research was also conducted: round tables, discussion rounds and interviews were included in the analysis as qualitative methods.

The **round tables with students, teachers and regional stakeholders** took place in Sweden, Poland, Latvia and Austria in 2023. The aim was to find out from the students how willing they are to stay in the region, what they think about setting up a business and what they need to be able to imagine setting up a business. Together with lecturers and staff from the respective universities, the ENDORSE team discussed how entrepreneurial education at the universities can be improved, what resources universities, lecturers and staff need for this and what other measures could be helpful to promote business start-ups by students and graduates. The round tables with the regional stakeholders served to find out what they offer to promote entrepreneurship among students, what cooperation's exist and what the regional start-up conditions are like. The findings from the round tables in the four countries were summarized in key points on the various issues. The consideration of all summaries was used to derive region-specific and cross-regional recommendations.

The **interviews with regional entrepreneurs**, conducted as part of IO2 for the teaching materials, provide insights into the founders' motivation, first steps, particular challenges and lessons learnt. This provides first-hand indications of what can be important and beneficial for founders. The interviews were reviewed and the answers to the pre-defined questions were

noted down. This overview made it possible to identify similarities and differences with regard to the questions.

In autumn 2024, the **UniCity networking event took** place in Greece, Austria and Germany. The aim of the event was to engage in dialogue with regional stakeholders on how brain drain regions can move closer together, work together to secure skilled workers and what role the topic of entrepreneurship plays in this. We discussed these points in moderated discussion rounds. The results should supplement the findings from the round tables and interviews. The results were collected with key points on whiteboards together and then briefly summarized by the project team. The results of all three events were then placed side by side in order to derive general conclusions and recommendations.

Archetypes of brain drain regions

The Basic

- Peripheral regions (among the poorest in Europe)
- Problems, amongst others:
  - Socioeconomic, e.g. unemployment, lack of technological progress
  - Demographic, e.g. population loss
  - Physical, e.g. poor infrastructure
- Economic development is below average
- Universities struggle to attract and retain graduates

The Emerging

- Geographically widespread (many in the periphery)
- Regions affected by structural change
- Problems, amongst others:
  - Vacant, underutilized housing
  - Uncompetitive, old local businesses
  - Poor infrastructure
- Sometimes, universities purposely located in these regions to contribute to urban growth

The Advanced

- Bigger or smaller cities in metropolitan areas
- Benefit to a certain extent from agglomeration shadows
- Lack of industrial diversity, innovative performance and economic growth
- Suffering from lock-in effects by path dependence, e.g. determined by less-speedy industrial evolution or traditional socioeconomic structures
- Universities often important contributors to local development (e.g. attract national & international students)

The Frontrunners

- Mainly metropoles and regions surrounding them with certain level of economic dynamism, sectoral heterogeneity, R&D investment, and human capital
- Lack of important social capital, e.g.
  - Knowledge transfers
  - Personal exchange between firms)
- Partly consumer cities that focus on culture, art, tourism and research but often low entrepreneurial success
- Universities attract many national and international students without having a matching labor market

Figure 1: Archetypes of brain drain regions (Source: IO1)

Moreover, a quantitative study was also used in the form of a **student survey**. All universities involved in the project shared the survey link at their universities via various channels (email, newsletter, presentation in the courses/lectures, etc.). In Greece, the survey was also distributed to other Greek universities throughout the country. The survey was intended to generate

a more comprehensive picture of students' choice of location and their propensity to start a business.

Finally, all these methods of analysis are considered as a whole and translated into generally applicable recommendations. The policy recommendations are also applied to four archetypes of brain drain regions (see Fig. 1), which have been developed and identified in IO1. In addition to those general recommendations, specific recommendations for each of these archetypes are provided as well.

3. Analyzes

3.1. Literature Review

Brain drain

Demographic change and the shortage of skilled workers are intensifying competition between European cities and regions. Structurally weak and peripheral cities and regions in particular often lose out in this competition. As a result, they are experiencing a brain drain. As many European university locations cannot compete with the wide range of jobs offered in metropolitan areas, they must find alternative ways to increase the attractiveness of their location and avoid the brain drain. Both the topic of “brain drain” and strategies to combat it have been discussed many times in academic literature. This chapter summarizes, compares and evaluates the recommendations that have been made to reduce brain drain.

Recommendations	
Strengthening job opportunities and job conditions in the region	Regions with more favorable labor market conditions, such as extensive job opportunities in various sectors and a good wage level, are generally at an advantage (Jäger/Kreutzer 2012; Hamm/Jäger/Kopper et al. 2013; Buenstorf/Geissler/Krabel 2016; Albrecht/Scheiner 2022). Peripheral regions are often at a disadvantage here (Gareis/Diller 2020). Studies show that the higher the level of education, the more willing people are to leave the region (Buch/Hamann/Meier et al. 2011; Albrecht/Scheiner 2022). Job ambitions of highly qualified people often require flexibility (Busch/Weigert 2010). This might be due to the fact that highly qualified people have no other choice, as there are not enough job and educational opportunities in their home regions. The recommendation relates to improving the education and job opportunities so that especially highly qualified people are not forced to migrate to other regions (Albrecht/Scheiner 2022). Regions that attract university graduates can benefit from these mechanisms in the long term. The reasons for that is that students have already passed the most mobile biographical phase of their lives by the time they graduate. They are therefore more likely to stay in the region (Flöther/Kooij 2012).
Gaining working experience in the region	Regional work experience reduces the tendency to leave the region after graduation; this finding applies to all groups of students including international students (Niebuhr/Otto/Rossen et al. 2022). Bringing students into contact with regional companies, e.g. through study projects, student jobs or internships, can be a strategy to bind graduates to their university region.

Feeling at home / belonging	A sense of belonging also plays a role that should not be underestimated when deciding on a location (Jäger/Kreutzer 2012; Hamm/Jäger/Kopper et al. 2013; Albrecht/Scheiner 2022). On the one hand, this is determined by where parents, family members and/or friends live. On the other hand, a feeling of home can also be acquired when students feel comfortable at their place of study, for example, and when they make new contacts and friendships. Many graduates move to regions of the same type as their home region or migrate to regions of their university type. The latter is particularly likely for graduates from peripheral regions, as their home regions may have a lack of job opportunities (Buenstorf/Geissler/Krabel 2016). This opens up an opportunity for university locations if they manage to make students feel comfortable there and provide them with the conditions they need. One strategy for retaining international students at the university location is to offer language courses and support with job applications (Thies 2022).
Improving the quality of life in the region	Cultural and social amenities may not play a decisive role, but they are neither insignificant. Here too, peripheral regions are often at a disadvantage compared to metropolitan areas (Albrecht/Scheiner 2022).
Improving city and/or regional marketing, better employer branding	Often there is also a lack of awareness of the advantages and strengths of regions (Albrecht/Scheiner 2022). For example, some regions do not have the big-name companies that everyone is familiar with. However, these regions may have interesting small and medium-sized companies that are hidden champions. Many people living in that region, such as students, are often unaware of these firms thus making it difficult to properly assess the opportunities offered by the regional business landscape (Masch/Ulrich 2021; Masch/Gutenberg/Ulrich 2021). In such cases, employer branding and a better city and regional marketing can help to increase the awareness and knowledge about the opportunities in the particular region.

Promoting entrepreneurship

Entrepreneurship can have a significant impact on the economic development of a region and is therefore a promising strategy for regions affected by brain drain. Young start-ups in particular often have innovative ideas and growth ambitions that in turn can have a positive impact on the economic dynamism and revitalization of a region. For structurally weaker or more peripheral regions, there is an opportunity to boost the economy by promoting start-ups and creating a start-up-friendly environment. Regional universities can serve as an engine for this and favor innovative start-ups from students, graduates and employees of the university with various activities. This chapter summarizes, compares and evaluates the recommendations that have been made to foster entrepreneurship.

Recommendations

Entrepreneurial ecosystem and networks	Academic literature emphasizes the importance of entrepreneurial ecosystems and networks. Accordingly, an **entrepreneurial approach** can strengthen regions if the region succeeds in creating strong networks between many different regional stakeholders. These stakeholders include entrepreneurs, policy makers, universities (and students), communities and other regional interest groups (Lara-Bocanegra/García-Fernández/Gálvez-Ruiz et al. 2022; Dick-Sagoe/Lee/Boakye et al. 2023; Huggins/Munday/Thompson et al. 2023). Likewise, state/government, the broader public, local and regional firms/industries as well as academia in general typically play a role(Carayannis/Campbell 2009). If the regional objective is to encourage certain groups to set up a business, it is important to both offer **networks specifically tailored to the target group** and integrate them into existing networks in a targeted manner. One example for the relevance of connecting 'the right people at the right point in time': migrant founders are one of these target groups. Bringing migrant founders in to contact with other start-ups, established companies and/or scientific institutions can make an important contribution to integrating these groups (Sternberg/Gorynia-Pfeffer/Täube et al. 2023). Such ecosystems and networks are also particularly important in relation to **mentoring programs** and **role models** (Sternberg/Gorynia-Pfeffer/Täube et al. 2023). Potential founders need role models who are tangible and who can provide both advice and (non-) monetary support. Mentoring programs have also proven to be helpful in this respect, too (Ajayi-Nifise/Tula/Asuzu et al. 2024). Additionally, **female founders** have proven to be an often underrepresented and underacknowledged (regional) resource. Thus, it is important to establish contact between potential female founders with female role models to share not only bit also gender-specific their experiences and barriers throughout the entire start-up process (Sternberg/Gorynia-Pfeffer/Täube et al. 2023). However, female founders monitoring in Germany shows that so far only a few women act as business angels and support other founders with investment, advice and contacts (Hirschfeld/Gilde/Walk 2022). All of these aspects make it possible to better imagine oneself as a founder and gain self-confidence through advice from role models – and hence contribute to the likeliness that an own business is started.

	Universities can, for example, establish contacts between students and entrepreneurs and thus facilitate the exchange of experience (Lara-Bocanegra/García-Fernández/Gálvez-Ruiz et al. 2022) both for all groups as well as for specific groups of students, alumni etc.
Entrepreneurship orientation and education	Establishing entrepreneurship and entrepreneurial thinking in the mindsets of people has proven to be an enduring process. For that, it is important to start at an early stage and **promote entrepreneurship orientation and education** already in schools and universities. Students should be offered specific courses on entrepreneurship within their regular study programs (Liu/Gorgievski/Qi et al. 2022; Dick-Sagoe/Lee/Boakye et al. 2023; Liu/Gorgievski/Zwaga et al. 2023; Siddiqui/Mumtaz/Ahmad 2023). These courses should provide them with the skills and mindset needed to develop ideas, turn them into a business and eventually run that business. The following recommendations have been made for the **design of the courses** in the scientific literature: ▪ The courses should be offered on an interdisciplinary basis and not just for specific subjects (e.g. business management) (Dick-Sagoe/Lee/Boakye et al. 2023). ▪ A major barrier for many students is the economic and financial aspects of starting a business. Thus, the university should offer support and information in this respect and, for instance, explain to students how and where they can look for funding opportunities (Lara-Bocanegra/García-Fernández/Gálvez-Ruiz et al. 2022). ▪ The literature also recommends a challenging learning environment in which students learn to think out of the box (Liu/Gorgievski/Qi et al. 2022). ▪ The practical side of such courses is also emphasized as practical course content is said to be more important than imparting theoretical knowledge (Siddiqui/Mumtaz/Ahmad 2023). Learning to experiment is also seen as a vital part of an entrepreneurial mindset and can be helpful in turning ideas into reality (Sternberg/Gorynia-Pfeffer/Täube et al. 2023). ▪ Good and supportive teacher-student and student-student relationships in these courses are furthermore considered conducive to students' interest in starting a business (Liu/Gorgievski/Qi et al. 2022; Liu/Gorgievski/Zwaga et al. 2023). ▪ To be able to offer courses on the subject of entrepreneurship as a university, it is crucial that its teachers are

	provided with the necessary resources and knowledge in advance (Siddiqui/Mumtaz/Ahmad 2023). As mentioned at the beginning, entrepreneurial education should also start in **(high-) schools**. Greater importance should be placed on economics as a school subject. In this way, knowledge about entrepreneurship can be imparted at an early stage and room for experimentation can be guaranteed (Sternberg/Gorynia-Pfeffer/Täube et al. 2023).
Entrepreneurial environment	It is important that the government creates an entrepreneurial environment that is **favorable, supportive and inclusive**. The latter means that targeted efforts must be made to include previously underrepresented groups – whose resources and potentials have remain unused so far – such as women, older people and non-graduates (GEM 2023). In rural regions in particular, it is recommended that the physical **infrastructure** is analyzed and, in most cases, also expanded. This refers to good transport connections (e.g. roads, public transport), good communication infrastructure (e.g. free Wi-Fi in the city center) and the availability of new types of workspaces (e.g. co-working spaces). To create space for innovation in the region, the provision of real-world laboratories as well as science and computing parks is also an option (Sternberg/Gorynia-Pfeffer/Täube et al. 2023). Creating an entrepreneurial climate, especially at universities, is important. Universities and regional policymakers should pool their resources and work together to create such a climate (Greven/Beule/Fischer-Kreer et al. 2024). This is the best way to **utilize synergies**.
Financial and material support	Financial and material support is one of the basic prerequisites for start-up activities and their success (Dick-Sagoe/Lee/Boakye et al. 2023). Raising capital is often a major challenge for those interested in setting up a company (Ajayi-Nifise/Tula/Asuzu et al. 2024). Governments can interact through various measures and thus have a positive influence on the start-up landscape (Lupova-Henry/Blili/Dal Zotto 2021; Ajayi-Nifise/Tula/Asuzu et al. 2024). Examples of this include subsidy programs, support programs or tax benefits and reliefs.
Reduce fears and risks	The Global Entrepreneurship Monitor shows that starting a business is still associated with many fears, which is why many people decide against it. Support with better knowledge of risk

	management techniques or amended insolvency rules that mitigate the costs of failure could contribute to an increase in start-up rates (GEM 2023).
Foster research and development	Research and development are important to generate innovative ideas, which in turn can lead to innovative, future-orientated start-ups (Ajayi-Nifise/Tula/Asuzu et al. 2024). This applies in particular to **future-oriented areas**, such as the development of new processes and technologies in the field of green technologies, which can open up new markets and customer groups (Sternberg/Gorynia-Pfeffer/Täube et al. 2023). This could encourage potential entrepreneurs to look beyond the easily accessible sectors for ideas and thus tend to develop more sustainable, innovative companies (GEM 2023). Likewise, **Social Innovations** should not be forgotten as they are suitable for raising endogenous potential beyond technology and existing industrial paths, which is particularly relevant for regions under structural economic transition processes (Terstriep 2018; Herzog/Krehl 2024).

Cooperation with universities

Universities can play a decisive role in the development of the region in which they are located. Through their function as employers, educators of highly qualified young people and generators of knowledge through research and development, they can help their region move forward. However, this demands a productive networking between universities and regional stakeholders. Both establishing and maintaining such networks involves a great deal of effort. The benefit of these efforts is synergies that represent a win-win situation for everyone.

Recommendations

Address all regional stakeholder groups	In academic literature, the Quadruple Helix Model (Carayannis/Campbell 2009) is seen as an important driver of innovation and regional development. Close cooperation between the four helices **universities, industry, government and civil society** is considered essential.
Perceive geographical proximity as an opportunity	Studies show that companies of different sizes and popularity mainly enter commitments with regional universities. Better recruitment success and the retention of graduates in the region play a role here, but also the avoidance of competition with other potential employers (Winterhager/Krücken 2015). A **strategic and long-term co-operation** between universities and regional companies must therefore be expanded and strengthened.

Enabling transfer from the universities	In order for the transfer effects of universities to have an impact in the region, information gaps between the university and industry must be overcome, both sides must show interest and conflicts between academic research and practical transfer must be reduced. **Incentives for transfer activities** and personnel capacity must also be made available for the university (Hamm/Koschatzky 2020). This also applies to financial incentives that can improve the entrepreneurial influence of universities (Rinkinen/Konsti-Laakso/Lahikainen 2024). Even more important, however, is the expansion of **dialogue spaces** in which all regional players can meet and exchange ideas in person. This personal dialogue is seen as essential for ecosystems to work properly (Rocha/Brown/Mawson 2021; Rinkinen/Konsti-Laakso/Lahikainen 2024).

Conclusion

Reflection upon the literature review the following aspects become evident:

Brain drain: Much research is taking place regarding its drivers, causes and effects and several policy suggestions have been formulated throughout the years. The results indicate that even though drivers and the like are known and fairly well understood it is difficult to implement direct policies that effectively reduce brain drain or turn it into a brain gain. Reasons could be that the relevant mechanisms at work are inaccessible for standard policies.

Entrepreneurship: Research on entrepreneurship is vast, research on entrepreneurship in relation to regional development is less though still a lot, and research on entrepreneurship as a means to combat brain drain is comparatively scarce. A key point seems to be that the issue is not so much to understand which ingredients entrepreneurship and establishing entrepreneurial mindsets need but to find ways of effectively distributing them to people and to encourage them setting up a business. Hence, how to reach the individual level of persons, preferably at a young age.

University cooperation: The literature is comparatively clear in this field. Research highlights that cooperation between different stakeholders can make a difference and the role of universities may take several facets, including employer, educator, innovator, facilitator and carrier. This makes them a strategic partner for many regional stakeholders and regarding entrepreneurial aspirations.

To put it into a nutshell: Knowledge is either already available or straightforward to obtain. However, it is not trivial to put a value on this knowledge and derive concrete activities and effectiveness from it.

3.2. Existing policies at different spatial levels

European level

At the European level, a large variety of different policy approaches can be observed that are directly or indirectly designed to (1) combat brain drain, (2) foster entrepreneurship, (3) particularly strengthen the role of universities with respect to entrepreneurship. Most of these policies are organized in a way that EU funding bodies typically distribute money towards the EU member states or institutions therein hence delegating the responsibility for precise actions to a lower spatial level.

Looking at the topics mentioned above, it first becomes evident that many EU policies do not necessarily address them separately but in a combined manner. Brain drain, for instance, is often addressed in combination with labor market issues such as a lack of skilled forces (e.g., the “Labor and skills shortages in the EU: an action plan” as of 2024). Likewise, entrepreneurial issues are addressed both in strategies oriented towards socioeconomic challenges, at times also in combination with the role of universities (e.g., “Rethinking Education: Investing in skills for better socio-economic outcomes” as of 2012 or “Connecting Universities to Regional Growth: A Practical Guide” as of 2011). A selection of fundamental policies, receiving bodies or cooperating institutions as well as key instruments may be found in Annex 1.

A key message here is that policies and strategies exist for almost all levels of target groups – from entire member states to single small or medium sized enterprises. Likewise, the range of topics and issues that can be funded with EU money is vast and also ranges from the revision of educational and training catalogues and curricula, via networking issues and training programs to the development of national skill strategies and tax incentives for different stakeholders.

Country Level – Austria, Germany, Greece, Latvia, Poland and Sweden

The country level proves to be very different among the member states. The most striking difference is the way the respective country is organized, i.e. from very centralistic to very federal. Examples showing “maps” of policies and the interlinkages between the different spatial levels may be found in Annex 2.

Commonalities may be found in the precise instruments or actions that exist in the different countries: There is a large number of monetary support policies, such as tax benefits and incentives, business incubators and acceleration programs, loans and grants for certain (entrepreneurial) activities. Likewise, many countries fund different types of training and networking programs for different target groups, both institutions and individuals (typically firms). Additionally, funding and training schemes that are co-funded by the European Union prove similar in the different countries although the technical and hence the national distribution mechanisms might be organized differently.

Looking at a more aggregate level reveals that all countries have national development strategies for regions under economic challenges, transformation pressure or similar. However, the number of ministries and further governmental bodies involved in such programs varies, by and large following the way the respective country is organized.

A list of the core relevant policies at the country level and below may be found in Annex 2. There, a table has been produced for each of the ENDORSE partner countries in general as

well as each university region involved (see also next subsection) and, eventually, each university involved (see next-next subsection).

Municipality Level

The municipality levels addressed in this section encompass the respective university cities of the project partners involved, i.e. Krems/Austria, Mönchengladbach/Germany, Athens/Greece, Ventspils/Latvia, Łódź/Poland and Östersund/Sweden. As cities and municipalities only are not revealing, the corresponding regions have been addressed as well. Selected policy documents, cooperating institutions as well as specific instruments or activities may again be found in the Annex 2, as well.

Inspecting the information for both region and municipalities highlights similarities and differences between the spatial entities in the different countries. Similarly, the embedding of the regional and municipal structure into the national context differs – again the network figures, exemplarily produced for Germany and Poland – reveal substantial differences here (see Annex 3). However, when looking at the specific activities and instruments that are mentioned in respective policies and documents from the municipal/regional level, again similarities

may be identified: Broadly speaking, all municipalities and/or regions have developed policies that pertain to several of the following issues. Sometimes, these issues may be found in combination. Sometimes these instruments are co-funded by federal or EU-money, and sometimes, these activities are held in cooperation with universities, other governmental bodies or in public-private-partnership.

Labor market and related:

- Special economic zones and tax releases (where legally possible)
- Job creation schemes and support, labor market interventions (where legally possible)
- Promotion of start-ups and entrepreneurship/self-employment incl. support for spin-offs

Infrastructure:

- Digitalization support, funding/support of physical infrastructure
- Start-up centers, business incubators, science and technology parks

Training, competence and knowledge:

- Regulatory support and consultancy,
- Training and competence development, mentoring, networking offers, both monetary and in kind

Awareness and realization activities

- Project funding (also co-funding of EU- and/or national money) and support with the respective implementation of activities
- Public awareness campaigns, sponsoring activities and events

University Level

Finally, policies to foster entrepreneurship and, to a much lesser extent, combat brain drain are also developed and implemented at the university level. Though not exactly a spatial but

more an institutional level, the most relevant policies set in place at the ENDORSE partner universities shall be summarized here (details may again be found in the Annex 2).

The most obvious university policy is the design and implementation of respective study programs at the Bachelor or Master level. Furthermore, the implementation of entrepreneurship-related, business management-oriented courses or modules in non-economic programs is typically found at the universities. A closer look at the six institutions analyzed here also reveals that all of them offer extracurricular training and/or mentoring activities. Many of them also host start-up centers, which are at times also well-known beyond the university itself, and organized several types of networking events and opportunities with different stakeholders from the quadruple helix, i.e. government, industry, public and academia.

From a university perspective, the role of academia in regional innovation systems and contexts is addressed in university development plans, mission statements or similar. The term "third mission" occurs there at times. Instruments and activities to "operationalize" such overarching topics also range from study programs to networking events and the supply of consultancy and business incubators incl. training offers. Likewise, explicit cooperation between university and municipality or region may be found, too. Examples are student competitions on "real" topics or cases provided by the municipality or region, approaches towards the foundation of social enterprises in the municipality, concise support and mentoring of students on their way from having an idea to being an entrepreneur incl. best practices and training from local experts.

Conclusions
Although the six countries, regions, municipalities and universities differ, they pursue relatively similar policies and instruments. All entities developed a broad range of policies and strategies to address local/regional/national challenges in terms of – amongst others – brain drain and entrepreneurship. Though not overly striking, it should be mentioned here that the actual socioeconomic, demographic or geographical location situations substantially varies between the regions. A classification of all brain drain region in Europe (see IO1, and Fig. 1 here) has revealed substantial regional differences. Still, all regions and municipalities facing brain drain tendencies resort to similar measures to addressing this and to contribution to regional development and prosperity. However, while measures and policies sound or read similar, they will most likely experience site-specific arrangement and designs. The following descriptions of local events provide further insights here. Looking at the large amount of strategies and policy documents, at the cooperation bodies and institutions as well as the role and engagement of regions and municipalities and the offers the universities make on top reveals that much effort is taken and that much of this also meets a need. However, as will become clearer when analyzing the Round Tables (Ch. 3.3) and UniCity events (Ch. 3.4), the issues seem to be not so much a supply one but equally so an informational one

3.3. Round Tables

In 2023, round tables were held at four project partners' locations in Austria, Poland, Sweden and Latvia, namely Krems/Austria, Łódź/Poland, Östersund/Sweden and Ventspils/Latvia. All

round tables took place with students, teaching staff and regional stakeholders and were intended to provide more detailed insights into the topics of brain drain, entrepreneurship and regional cooperation between the university and regional stakeholders.

Specifically, the round tables pursued the following objectives for the different target groups:

Round tables with students	Round tables with academic staff	Round tables with stakeholders
▪ Assess students' willingness to stay in the region ▪ Assess students' willingness and ability to participate in entrepreneurship-building activities offered by universities ▪ Identify existing gaps in the universities' educational offerings and support activities as perceived by the students ▪ Point out possible actions that could help closing the identified gaps and boosting the students' potential for business ventures ▪ Identify students' expectations with regarding the entrepreneurial support system.	▪ Identify existing gaps in the universities' educational offerings and support activities as perceived by the teachers ▪ Point out possible actions that could help close the identified gaps and boosting the students' potential for business ventures ▪ Observe the willingness and possibilities of introducing changes in study programs and individual courses ▪ Assess whether the academic staff has the competences necessary to fill the identified gap	▪ Identify the forms and scope of collaboration between local/regional stakeholders and universities, e.g., in the context of preparing students for entrepreneurial activities and challenges ▪ Identify conditions and barriers to collaboration between local/regional stakeholders and universities ▪ Point out possible actions that could support improving collaboration between local/regional stakeholders and universities

To fulfill these objectives, targeted questions were developed for the different topics that should be discussed with the respective participants. During the round tables, large sheets of paper with these questions were laid out on the tables and the participants were asked to write their thoughts, answers and comments on small sticky notes and attach them to the questions. The subsequent discussion was then conducted based on these notes. The main results of the round tables and discussions are summarized in the following tables and a conclusion is drawn afterward.

Results of the round tables with students	
Krems, Austria	**Östersund, Sweden**
▪ Reasons for leaving the region: ○ language barrier ○ cultural barrier ○ limited workplaces ○ limited resources (market size, human resources) ○ isolation ▪ Entrepreneurial skills exist, but there is no ability to practice them ▪ Lack of networking and capital opportunities ▪ Voluntary, practice-oriented courses by experts would be helpful (e.g. for setting up a company while studying) ▪ Regional support programs are not well known, thus there is need to raise awareness and provide more information to students ▪ Krems is not as international as advertised	▪ Most students intend to stay in the region ▪ Important factors to stay or leave includes: ○ Jobs ○ Career opportunities ○ Personal development ○ Housing ○ Salaries ▪ Consider that they have right background (education) ▪ Lack of entrepreneurship in education, even in business administration study program ▪ The students ask for more: ○ Entrepreneurship in their education, ○ Management ○ Leadership ○ Internship ▪ Increase networks – mentorship, guest lectures, internship
Łódź, Poland	**Ventspils, Latvia**
▪ Reasons for leaving the region: ○ Poor public transport ○ Aesthetics of the urban space ○ City's social problems ▪ Good region for founding a start-up due to ○ Location ○ property opportunities ○ place full of artistry ▪ lots of competition, level of innovation and difficult Polish law ▪ More training, exercises and workshops in running and setting up a business (interdisciplinary, academic and practical aspects) ▪ Universities should run career offices (e.g. offering training, internships and guidance) ▪ Universities should collaborate more closely on such programs.	▪ Jobs are a main factor in the decision to stay or leave the region ▪ Further reasons for staying include attachment for family reasons. ▪ Some students find Ventspils more attractive than the capital city, Riga, for setting up their business ▪ General aspects relevant for setting up a business include: ○ Support throughout the entire process is needed ○ Passion for running one's own business is necessary ▪ Some obstacles in or with Ventspils includes: ○ Number of competitors is either too small or too big ▪ Number of inhabitants and market size too small

▪ Networking with companies, graduates, etc. ▪ Support system for young entrepreneurs is not well known. ▪ University should focus on its informational role.	

Results of the round tables with academic staff	
Krems, Austria	**Östersund, Sweden**
▪ Study programs are overloaded with content. ▪ Think out of the box and provide extra-curricular activities ▪ Determine the right time for entrepreneurial courses: neither too early and not too late in the study program. ▪ Teambuilding and team-work projects are essential skills. ▪ Provide students with networking and connections to local companies. ▪ Use local entrepreneurs as teachers to provide practical experience and role models to stay in the region and share the entrepreneurial spirit. ▪ Idea: student companies, idea contest or shared master thesis (interdisciplinary) ▪ Communicate more what the university is doing as institution. ▪ Support students to take-over existing businesses instead of starting new ones.	▪ Students need to gain an increased entrepreneurial thinking/approach. ▪ There is a need for increased collaboration with business. ▪ Consider self-employment as an alternative to employment But… ▪ difficult to find working forms for working with the so-called third mission (i.e. co-operation with the surrounding society) and, ▪ difficult to find space for new courses in the existing programs ▪ the competence exists at university-level, but still conservative thinking remains at university level
Łódź, Poland	**Ventspils, Latvia**
▪ Young people come to Łódź to study, but many leave the region afterwards ▪ Problem: Proximity to Warsaw (i.e. better job offers, better paid) ▪ Benefits of staying in Łódź: cheaper cost of living, but still access to shops and cultural institutions	▪ Up-to date teaching programs including practical relevance and student-centered courses. ▪ Professors should want to be teachers ▪ Relevant skills for students include: ○ Start-up management ○ “learning by doing” ▪ Getting hold of both the own education and the field.

▪ Universities do not encourage the development of entrepreneurial skills: interdisciplinary and inter-university cooperation, practical workshops
▪ Courses should be taught by academic staff, entrepreneurs or jointly.
▪ Regional support system for young entrepreneurs include:
  ○ entrepreneurship incubators
  ○ support programs
  ○ start-ups
  ○ co-financing, business angels and venture capital funds
  ○ …
▪ Entrepreneurial education should start earlier (e.g. kindergarten)
▪ Stronger cooperation between the university, the city and businesses
▪ Implementation of economic and social incentives for young people.	

Results of the round tables with stakeholder	
Krems, Austria	**Östersund, Sweden**
▪ Teach entrepreneurship much earlier and already set this mindset to kids in middle school: make innovation for the youngest generation desirable ▪ Open up entrepreneurial offers for different age groups/generations/disciplines ▪ More entrepreneurial projects will create more jobs and graduates might stay in Krems for those jobs ▪ Building networks and strengthen communication by acknowledging the triple and quadruple helix models. ▪ Idea: Advice center for all questions related to business founding. ▪ Improve the flow of information between students, teachers and stakeholders. ▪ Encourage entrepreneurs to act as mentors for young founders: support and take away fear.	▪ Lack of educated people, a big problem in society. ▪ Lack of knowledge if university's courses are aligned to local needs. ▪ Wish to create more connections with students during the study period ▪ Want to be an attractive region beyond the university environment.

Łódź, Poland	Ventspils, Latvia
▪ Cooperation between universities and secondary schools is needed. ▪ Universities should establish cooperation with business and enable internships. ▪ At universities, we educate employees not entrepreneurs ▪ Teach what it means to lead and how teamwork works ▪ Consistent and joint image-building activities: stronger marketing of the offers of the region and universities (also outside the region) ▪ Joint actions of the local government, companies and universities to attract companies ▪ Entrepreneurial education should start earlier (e.g. kindergarten) ▪ Create good living conditions (communication, housing and entertainment etc.) ▪ You need to provide a whole set of advisories / institutions to support young entrepreneurs ▪ Business is created by people (leaders): use them as role models	▪ Supportive aspects include: ○ Innovation grants ○ Cooperation between the public and private sectors. ○ Business Support Center ▪ Initiative and “will” to set up a business on the one hand and a government granting respective aspirations one the other hand should align.

Conclusions

The results of the round tables on the topics of brain drain show some differences and similarities between the four European regions. Most of the participating students in Östersund/Sweden can imagine staying in the region, while this is less common in Krems/Austria, Łódź/Poland.

The reasons for **staying or leaving a region** often overlap. Job and development opportunities, salary levels, housing and public transport are particularly important, but softer factors such as cultural and leisure facilities, the social environment including family bonds, the cityscape and a sense of belonging also play a role. To attract students and graduates, regions must fulfill these requirements. Often the regions also have good location conditions, but these may not be sufficiently recognized by the target group. This was also pointed out several times in the round tables. These advantages of regions must be marketed more strongly and communicated to the target group. To this end, image campaigns and the provision of information are measures to improve potential knowledge gaps among students and graduates.

With regard to the **education of entrepreneurial skills**, the results of the round tables show deficits in all regions. The participating students would like to see more entrepreneurial education, particularly practical and interdisciplinary courses, exercises or workshops – also from experts in the field. Career offices, internships and mentorships are also suggested. In addition, the participating students believe that existing support programs for young entrepreneurs are not well known. Universities should take on the role of information provider here and disseminate the information more strongly to the students. The participating academic staff's statements largely confirm those of the students. The involvement and cooperation of people and related institutions from the field (entrepreneurs, companies) is also considered important: on the one hand to impart expertise and on the other hand to pass on experience and act as role models.

Networking opportunities between students and companies should be strengthened. Possible formats for students could include interdisciplinary student companies, idea contests or shared master's theses. However, the inclusion of this content in the already full curricula is often not easy. According to both academic staff and stakeholders, entrepreneurial thinking should be taught long before university (in schools or even kindergartens). **Cooperation between these educational institutions** is proposed. In addition, programs on entrepreneurial thinking could also be offered across generations and target groups (students at secondary school, students at universities, alumni, professionals). Another point that is also mentioned several times in the round tables with the academic staff and stakeholders is the distribution of information on entrepreneurial offers and opportunities. The flow of information between students, teachers and stakeholders (local authorities, companies, other educational institutions, etc.) should be improved in order to highlight the region's opportunities and make the region attractive to potential founders.

3.4. UniCity networking events

In November and December 2024, three UniCity events took place, one each of Germany, Greece and Austria. The target group for these events were regional policymakers as well as other stakeholders who deal with the topics of brain drain and entrepreneurship – and how to address them. The aim of these events was first to present and discuss up-to-now ENDORSE project results and second to brainstorm and draft recommendations together with the participants to reduce brain drain and promote entrepreneurial thinking and behavior among young people. The results of the discussion rounds are shown in the following tables.

Documentation of the German event

UniCity event in Germany on November 7th, 2024
On November 7th, 2024, a UniCity event took place in Mönchengladbach/Germany. Invitees were persons from all three out of four helixes in Mönchengladbach, Krefeld as well as other regional authorities in the broader area. Eventually the invitation list was encompassing persons from academia/universities, industry/business, state/government. Eventually, a list of about 20 commitments was reached but due to sickness, postponements and no-shows, finally seven participants took part representing both different stakeholder groups and different parts of the region. Thus, the small number of heads still captured a broad range of places and perspectives.

Summary of the discussion

Brain drain

Recognition of brain drain / brain gain

- Though it is a rather "sedentary" region (i.e. no fundamental "escape tendencies" from long-established families), brain drain is recognized in the region
- Metropolitan cities close by, such as Düsseldorf and Cologne, outshine the university region of Mönchengladbach and Krefeld
- Problem is known, but seemingly nothing is being done about it

Potentials and possible strategies

- Targeted marketing campaigns for school children, students, young professionals, and later returnees
- Communicating the strengths and special features of the region
- Individual and personal advisory services
  - Transition from school to university or career
  - Advice for job changers
  - Advice for people interested in starting a business
  - Migrants, especially with respect to showing them more appreciation regarding their knowledge and education
- Nationally attractive degree programs to also attract more students from outside the region
- Correlation between study satisfaction and the willingness to stay in the region can be observed

Entrepreneurship

What encourages start-ups?

- Holistic "psycho-social" start-up consulting
- Target group-oriented consulting, assistance and coaching

What inhibits start-ups?

- Too large range of consulting services for founders
- Local and regional initiatives compete with their offerings
- People interested in founding a company overwhelmed when it comes to finding the right offer for them

Potentials and possible strategies

- Improve didactics in schools
- Streamline school curricula and curricula at universities in a targeted manner, teach interdisciplinary skills that increase start-up mentality instead
- Students need
  - insights into different job opportunities, types of companies, sectors and industries
  - role models they can identify with ➔ connotations and stereotypes can thus be overcome

Regional players

- Foundation and setting up a business are still strongly focused on technology
- Also include partners, initiatives and companies from other areas, such as social enterprises

Documentation of the Greek event

UniCity event in Greece on December 13th, 2024

On December 13th, 2024, a UniCity event took place in Athens/Greece at the premises of the Regional Development Institute, which is a University Research Institute of Panteion University. Following a screening of stakeholders, a table with 72 potential participants was

completed including Universities, Chambers, Policy Makers from Central Administration and local government, civil society and third sector, start-up companies, private sector, while excluding the host Institutions' stakeholders and policy makers.

Based on this screening an electronic invitation was sent to the list of stakeholders and policy makers with a complete description of the project, the purpose of the invitation, and the expected outcomes from the meeting. On parallel, a big number of contacts was made with the invitees.

The organizers created bonds with the stakeholders and provided them with all the necessary information about the event and the value added of their participation both for them and for the program. Clearness of the purpose and scope of the invitation, precise information about the venue and accessibility, including facilities for parking space if necessary, direct contact for clarifications and support as well as previous collaboration with most of them resulted in a total number of 42 participants.

Summary of the discussion

Brain drain, Innovation and Entrepreneurship

Does the university contribute to Innovation?

- There are a lot of results from research programs and projects conducted by Greek universities, but there is difficulty in utilizing these outcomes to promote youth entrepreneurship.
  - Numerous findings from basic research exist, but often "remain on the shelves".
  - Basic research should be transformed into applied research that adds value to the economy.
  - Therefore, a mechanism is required to leverage research results through youth entrepreneurship.
- The university needs basic research to understand natural and social phenomena. However, it also needs to cultivate skills and capabilities to ensure that the results of basic research can be utilized for applied research, entrepreneurial action, marketable products, and ultimately, local development.

Does the university contribute to local development and brain drain?

- Local development benefits from innovation as it expands economic activity, creates opportunities, and attract new people (or retain those already present).
- By combining education, research and collaboration, the university can play a central role in stimulating local development while creating an environment that encourages talented individuals to remain and contribute to their communities.

How can the university collaborate with other institutions in the public and social/private sector to support brain gain through the innovation and entrepreneurship?

- When talking about public institutions, reference is made to all administrative bodies at all levels of governance (local, national and super-national) as well as to state-finances organizations, chambers of commerce, research institutes, foundations for research and innovation. When talking about the social sector, reference is made to incubators, spin-offs, start-ups, innovation hubs or networks, social enterprises.

- All participants agreed that the mobilization of individual initiative was crucial, supported by social and public institutions through funding, training, coaching, and mentoring.

Documentation of the Austrian event

UniCity event in Austria on December 12th, 2024

On December 12th, 2024, a UniCity event took place in Krems/Austria. Invitees were all kinds of reginal stakeholders. After marketing the event among these people, it took place with 9 participants who actively engaged with different questions regarding the improvement of entrepreneurial education and the combat of brain drain. Four overarching topics emerged throughout the exchange that are summarized below.

Summary of the discussion

1. Regional Challenges and Opportunities

- Brain Drain: A significant challenge is retaining university alumni as many migrate to Vienna post-graduation.
- Regional Branding: Lower Austria and its cities, Krems for instance, require stronger branding to position themselves as attractive innovation hubs.
- Start-up Ecosystem:
  - Start-ups were highlighted as crucial contributors to regional attractiveness and economic growth.
  - However, scaling businesses beyond product development (5-7 years) is a challenge due to funding limitations.

2. University Contributions

- Education and Networking: Universities should focus on fostering innovation by integrating students into regional projects and start-ups.
- Infrastructure Support: Universities can act as “funding sources” by providing incubation spaces, mentoring, and services like “buddy coaching” for start-ups and founders.
- Cross-sector Collaboration: Strengthen collaborations between universities, start-ups, local governments and firms to create robust regional innovation networks.

3. Cultural and Structural Barriers

- Risk Aversion: Fear of failure among founders was identified as a significant cultural barrier.
- Bureaucracy: High levels of bureaucracy in Austria hinder entrepreneurial activities and innovation.
- Innovation and Growth: Despite strong support systems, the ability to scale innovations internationally remains underdeveloped.

4. Retention of Talent

- Quality of Life: Highlighting the region’s culture and livability is crucial to retaining graduates.

- Family Support: Families were identified as key drivers or obstacles for entrepreneurship due to social and financial factors.

Conclusions

All UniCity events have proven successful and discussing stakeholders know their regions fairly well. Although all regions face specific challenges some shared findings and conclusions can be drawn:

The stakeholders show a professional attitude towards their **region and its current state**, such as demographic challenges incl. brain drain, missing or untargeted entrepreneurial support systems, unfavorable regional images and hence strong spatial competition with other places (e.g. capital region, neighboring metro areas), bureaucratic processes and barriers.

Against that background, all of them have clear ideas on what to improve and which **policies** to design. However, most of these ideas are neither recently new nor easy to implement. Ideas and suggestions remain on a rather abstractive level but a clear-cut operationalization strategy that is embedded into the regional structures and institutions is still pending.

Similarly, putting research results on fostering and supporting entrepreneurship and regional development into practice is challenging and many results “remain on the shelves” (citation from Greek UniCity event), seem little developed and or are simply unseen. Thus, **leverage points** for utilizing existing regional knowledge both from academia and from practice need to be more clearly identified and used. These leverage points also point to a regional void as individual effort and initiative often seem the true drivers of change and development rather strategic, embedded structures and related positions.

Collaboration among all regional stakeholders is perceived helpful and especially universities are seen as an anchor point therein. Universities core is science and teaching as well as knowledge transfer into the region. Further issues encompass uptake of regional knowledge as well as joint innovation and networking.

Many stakeholders see a key for combatting brain drain and fostering or supporting entrepreneurship and entrepreneurial thinking in **individual and tailor-made offers** that actually meet the needs of potential entrepreneurs, young professionals etc. This may point to entrepreneurial skills, administrative knowledge, legal fundamentals etc. but likewise take a holistic perspective, i.e. include people’s backgrounds and personalities. Thus, **looking beyond** pure economic, professional and job-related aspects and on people’s private and social situation seems so far underacknowledged facet when designing regional policies combatting brain drain and fostering entrepreneurial ecosystems.

3.5. Student Survey

Background

One aim of the survey was to better understand student’s location choice after graduation and to identify decisive factors for their respective decisions. In addition, the survey should provide insights into students’ propensity of starting a business at their place of study. In both cases, both promoting and inhibiting conditions for staying and/or for starting a business should be

singled out. Following the ENDORSE project's focus, the survey and related results refer to students located in structurally weak regions, peripheral regions and/or regions under transformation pressure. Eventually, the results are evaluated on an international comparative basis and placed in the context of urban and regional development

The survey was conducted in November and December 2023 at Hochschule Niederrhein University of Applied Sciences, also as a test run for the international surveys. The survey was then carried out at the other universities involved in the ENDORSE project and further Greek universities in spring and summer of 2024. It was designed as an online questionnaire and distributed to the students according to the possibilities of the respective university.

Various channels, such as newsletters, email distribution lists, social media and presentations in courses were used to promote the survey and achieve a high response rate. The intention was to generate a fully random sample and thus obtain representativity. However, the survey could not be directly distributed to all students personally but had to go through the channels mentioned before, selection biases cannot be fully ruled out. This needs to be kept in mind when interpreting the results.

The survey covered three topics: willingness to stay or leave the university region (henceforth called brain drain), attitude and experience with respect to entrepreneurship, supply and demand of training offers related to being an entrepreneur. Additionally, some biographic information was collected.

Sample characteristics

Eventually 571 complete responses were obtained, although country-specific response rates differ:

Austria	Germany	Greece[2]	Latvia	Poland	Sweden	**Total**
134	97	263	25	32	16	**571**

The responding students were mostly female (61.6%), studying in a bachelor program (79.1%) and were in their first or second year of study. These figures suggest that that the responding group is younger and more female than the university average, i.e. the entire population covering all students enrolled in all universities where the survey was distributed.

Regional brain drain

Looking at all responding students reveals that just about a quarter (26.8%) of the is actually planning to stay in the respective university region whereas roughly two out of five students (41.7%) are planning to leave the region. 31.5% of the responding students are currently undecided and thus the main target group when combatting brain drain. If their needs are met appropriately, the chances are higher than in the planning-to-leave-group that they will stay in their university region and contribute to regional prosperity there.

Looking at the stated reasons why a student would stay or leave the region is revealing: Jobs and family matter. No matter if a respondent said stay or leave, they would name "(no) suitable

[2] The survey in Greece was not only sent to students enrolled at the ENDORSE partner University Panteion University in Athens but also to several other universities in Greece. This is one reason why the responses are much higher than in the other countries.

job opportunities" a main reason for their decision. Students willing to stay only put more weight on the proximity of families and friends than on the availability of suitable job opportunities or further economic reasons although the differences are small (91.4% vs. 87.3%). Students planning to leave the region name predominantly economic reasons – jobs, wages, corporate landscape, costs of living. Proximity to family and friends is comparatively subordinate. This is also true for the availability of amenities such as sports and culture. A closer look into the six countries confirms the "European" findings by and large.

Additionally, infrastructure connection and physical accessibility play a substantial role for the location decision of the students at the Lower Rhine in ***Germany*** as the university region of Mönchengladbach/Krefeld is in the vicinity of metro areas such as Aachen, Bonn, Cologne, Düsseldorf .The line of reasoning is used by both planning to stay- and planning to leave-students: network connection works in both directions – easy come and easy go. The situation in Krems/***Austria*** is similar to the one in the surveyed German region with the capital city of Vienna being in about one-hour travel time by car. Here, the agglomeration shadow of Vienna is likely to be effective. Additionally, the unavailability of good cultural, sports and other leisure activities seems to be another push-factor in the Krems-area.

The ***Greek*** students, located in several bigger cities all over Greece including the capital city of Athens, largely mirror the European findings: suitable jobs, proximity to family and friends as well as the regional corporate landscape are weighted highest among the responding students. The better the regional labor market (or the perception thereof, the study does not permit causality interpretations here), the higher the willingness to stay – just outweighed by those already willing to stay as they name social bonds first.

A closer look at the responses from the ***Latvian***, ***Polish*** and ***Swedish*** students confirms the findings so far. However, the number of respondents is less than ten at times and shares thus easily reach 100%. Hence, a more detailed analysis is omitted here and some numbers may be found in the Annex 4 where fact sheets for all countries are provided.

Attitude towards and experience with entrepreneurship

Whereas more than half (57.4%) of the responding students have (had) personal contact with self-employed people, just about 10% of the responding students have personal experience with running a business. Taking into account that the students are in their first or second year of study, it is likely that there is some pro-entrepreneurship bias among the respondents. Reasons could be that students with a positive attitude towards the term "entrepreneurship" were more likely to either open a business or have opened and completed the survey. Against that background, it is not overly surprising to find that two out of five (44.1%) of the responding students are or have been considering to open a business.

These students' main reasons for opening a business can be summarized as seeking independence. Among the top three nominations (multiple answers were permitted) are "being my own boss", "prospect of higher income", and "realization of one's own product or service idea". They see difficulties and hurdles in relation with opening a business in different facets of money: acquiring enough capital, high personal risk and unclear income situations are named first. Consequently, when asking these students what they would need in order to increase the likelihood that they actually open a business, different support and network structures were

mentioned: support with funding and bureaucratic requirements and networking opportunities with local firms and role models.

Looking at the regions and trying to understand how the students perceive the (endogenous) regional potential is both enlightening and sobering: the students are often not aware of the regional economic and start-up landscape and (maybe thus? – insights from the UniCity events point into that direction, see Ch. 3.4) the university regions under consideration tend to have a negative image among the respondents.

Country-specific results are rare, students' issues with entrepreneurship therefore comparable. The findings described above also fit for the subsample of ***German, Austrian and Greek*** students. Additionally, the ***Latvian, Polish and Swedish*** students' answers point into a similar direction although items not mentioned so far occur within their answers such as the need of support with IT administration, digitization and web design, the lack of a sound business idea and/or suitable co-founder.

Supply and demand of additional training and the role of universities

What I don't know, I'll have to learn. Universities are places of knowledge creation, sharing and exchange. The last part of the survey explicitly addressed the role of the own university and how it could contribute to the students seeing themselves more as entrepreneurs. Thus, they were asked to name contents that should be added to the curricula and that were seen supportive and/or needed to be better prepared for being a founder.

The top three among all responding students are: (1) Core business modules, such as business idea development and business model design. (2) Creative workshops, such as design thinking and pitch workshops, (3) Risk management and mitigation strategies. Multiple answers were permitted here, too.

Looking at the different countries, however, reveals slight differences while generally being in line with the entire sample's results: ***Germany***: 61.9% of the responding students also ask for more "Personal skills (personal resilience techniques, conflict management, negotiation etc.)" and another 57.7% name "Administrative modules, such as project management, capital procurement and law for founders". ***Austria***: The students name similar items as the German students, but the variety of nominations is much broader. So, for example the top-one and top-two nominations each only reach 16.1%, top-five nominations scores 10.7%. ***Greece***: By and large responding like the entire sample and showing a similarly broad response behavior as the Austrian students, the Greek students also highlight a need for "Marketing related modules, such as market research, under-standing customers" (13.8%).

Latvia, ***Poland*** and ***Sweden*** are not discussed separately as the low number of respondents would result in citing topics that essentially a handful of students named. Top-nominations may nonetheless may still be found for each country in the Annex 4.

To put the student survey results in a nutshell:

Jobs and family matter for the decision whether or not to stay.

Independence is attractive and money matters when considering to be an entrepreneur.

Administration, law and regulation distress when thinking about being a founder, whereas creativity and risk management skills might give wings.

4. Conclusions and recommendations

4.1. Establishing an inventory of existing actions and policies

Both the literature review and the different empirical surveys match insofar as all of them postulate and verify that regional development and (regional/local) innovation systems are complex, interconnected structures influenced by various factors including political systems, institutional arrangements, and stakeholder interactions. Following the ENDORSE project's scope, this section now examines and summarizes the interplay between entrepreneurship, brain drain, and university cooperation within the context of regional development.

As can be derived from both the literature and the analysis of selected policies from the EU-level to the university-level, the overarching political system and its configuration play a crucial role in facilitating networking and funding and thus in shaping regional development policies and outcomes. Within this complex, interwoven relationship, regions can be conceptualized – and this can be seen here to some extent, too – as a set of formal and informal institutions "played" by different stakeholders. This institutional framework encompasses policies, main players, and path-dependent processes that influence regional development trajectories.

Looking at the figures for Germany and Poland as provided in Annex 3 highlights that it is essential for all regional developers to first and foremost understand the structure of the own regional development by identifying and analyzing the key stakeholders. Precisely, a comprehensive stakeholder and related policy analysis can reveal the intricate relationships between various actors in the regional (entrepreneurial and innovation) system.

Therefore, a hands-on initial step or recommendation is the following:

> **Produce tables similar to those found in relevant Annex 5 and related figures as shown in Annex 3 as these tables can help elucidate where a region stands and how it is integrated into broader funding networks. This analysis can provide valuable insights into the flow of resources and the distribution of power within the regional system.**

Universities, as discussed both the literature and proven in the empirical ENDORSE work, play a critical role in shaping regional innovation networks. Thus, carefully and purposefully strengthening the link between universities, businesses, and municipalities is essential for creating an entrepreneurial environment that can retain talent and foster innovation. The sheer number of different sources of information (see e.g., teaching Material from IO2), however, reveals that carefully and purposefully is to be taken literally. There is – at times more than enough – information on the market. What is missing is a steward (or a point of contact) to help you find your way through this jungle. This is one leverage point, that universities can and to some extent already do fulfil.

Another point to ponder is that it is well-known that effective regional development is not an overnight process, but requires significant time and patience. Likewise, as the literature review has shown, very much effort in term of time and money, development approaches and strategies have been developed and tried out. However, brain drain still is an issue and one-size-fit-all policies seem to not exist. Combining these findings with insights from the empirical material points to a gap here: approaches seem rather broad, at times also supply-driven but not

so much focusing on actual and current needs of those persons, who are asked to change their job mobility/residential choice behavior and stay in the region, for example. Nevertheless, it is obvious that policy cannot chase individual cases and respond immediately to every present idea.

Listening over presuming knowledge Acknowledging limited resources, carefully and purposefully observing (present and over time) and responding to needs and demands rather than "supply planning" could be a viable way here. Of course, this claim is nothing radically new but it may add a facet that has not gained full attention so far. Nevertheless, the 'installation' of brain drain-key accounts could be useful here. Ideally, this group of stakeholders that typically have invested the respective time and or have the job of doing so is key accounts, i.e. persons who are familiar with the paths, institutions and intricacies of their region. They play a crucial role in navigating the long-term nature of development initiatives responding to brain drain and the resulting need of coordinated intraregional cooperation.

Therefore, the development process regional stakeholders initiate, support and finally let go should involve celebrating small successes and taking numerous incremental steps, adhering to the principle that **"little things add up"**. Referring to the empirical material, both the UniCity Events and the student survey support this finding. Many respondents have stated that information has been there but that it needed someone to curate it and then to bring the respective stakeholders together, such as students looking for a job and employers looking for new talents – enriched with success stories of matches.

Thus, successful regional development requires a **sound stocktaking** followed by a patient, collaborative approach that emphasizes synergies over competition. By focusing on responsive strategies suitable to the political and governmental system and design, by an effective resource allocation, and by acknowledging both vertical and horizontal cooperation, regions can derive responses to brain drain and, probably in the mid-run, (more) entrepreneurship. Yet, the process demands time, key stakeholders with local knowledge, and a willingness to celebrate small victories while working towards larger goals.

Summarizing these findings into options of actions and, eventually, policies gives the following:

Regional stakeholders: Find key accounts and equip them with resources such as time, money and decision-making power.

Both the key accounts, their bosses and regional stakeholders: Take time to purposefully observe what is needed, act accordingly and celebrate milestones.

Key accounts: Observe and act accordingly, endowed with necessary resources (see item above) that you may distribute according to identified needs.

4.2. Policy recommendations on how to avoid brain drain

Looking specifically at the brain drain issue some of the ENDORSE partner regions as well as many other regions in Europe, currently face (see IO1), reveals that main challenges are similar. One the one hand, the drivers are issues on the personal level such as feelings of home, family-relationship. This is also tightly linked to individual values and norms which cannot be addressed directly and whose change is a process of years and personal development. On the other hand, the drivers for brain drain can be found on a macro level such as demographic

transition, (global) economic situation, or simply geography. Regional, local and university-specific policies thus can just mitigate effects coming from outside the region but struggle to actively combat or foster these 'macro influences'.

As both the literature review and the empirical material show, a multifaceted approach is vital to tackle these issues and foster regional growth. To address these issues effectively, regions must adopt a comprehensive strategy that focuses on identifying and fulfilling the needs of young people while simultaneously enhancing the appeal of local opportunities. Two main strands within this are general information about the region and tailor-made individual counselling.

General information collection and distribution

Regional stakeholders such as representatives from government bodies, the private sectors as well as institutions such as business support agencies need to focus on **identifying and meeting the needs of young people** (i.e. those likely to leaving the region thus sustaining the brain drain). Following the empirical analyzes, meeting the students' needs may involve improving regional amenities and opportunities that align with the young professionals' preferences, enhancing the communication about regional strengths, and creating and/or marketing meaningful local opportunities in employment, family life, and leisure activities.

Particular attention should be given to the finding that students willing to stay and students likely leaving the regions often give same reasons in the survey for their decision: the (un)availability of suitable jobs. Participants at the Round Tables and the UniCity events, however, often state that students and young professionals were not aware of the options and potentials the region actually provides. Some students support this with their responses regarding regional knowledge. Therefore, **clear-cut information and target-group specific communication** is essential to fully unleash the endogenous regionals potentials resulting from reduced brain drain. Effective marketing of regional strengths, such as options for a good work-life balance, high quality of living incl. comparatively low rents and costs of living, and strong entrepreneurial opportunities, is crucial for attracting and retaining talent.

As state in the subsection before, regional key accounts would be a means of doing this. Following the understanding of regions as systems (entrepreneurial ecosystem, innovation system), key accounts desire support from other stakeholders, namely local firms and education institutions. Thus, **strengthening the cooperation between "the region", schools and universities** is a promising means here. Information about the region and its current potentials conveyed in formats and events, which are tailored to the specific needs and questions of school students, students, graduates and/or young professionals, can contribute to retaining talent within the region. Particular means are joint programs, guest lectures, and early exposure to higher education opportunities. Likewise, integrating students into local businesses during and after their studies is essential, with programs like internships, collaborative projects or dual study programs.

With a closer look at the **labor market conditions and related opportunities**, the following recommendations can be formulated based on the empirical material and backed up with the scientific literature: To counter the perception of a thin labor market, regions should highlight diverse job opportunities the region and its firms offer. Regions and especially the forms therein should furthermore showcase the advantages of working in smaller companies versus large corporations. Regional cooperation is a promising means for this kind of **information and regional marketing**.

Individual counselling and mentoring

Personalized guidance and support play a crucial role in talent retention – particularly the Round Tables and the Uni City events have pointed into this direction. **Implementing person-based means** such as coaching vouchers, offering individualized counselling, and showcasing role models with non-linear career paths can help young people navigate their professional journeys within the region. Additionally, providing targeted support during the transition from higher education to professional life can significantly impact a graduate's decision to remain in the region.

Moreover, in response to the overwhelming abundance of information available to young people navigating their educational and career paths, a **decentralized support system** offers a promising solution. This approach leverages existing structures and relationships within educational institutions to provide more personalized and accessible guidance.

At the **school level**, teachers and senior students can play a pivotal role in offering support and mentorship. Teachers, with their wealth of experience and understanding of the educational landscape, can provide valuable insights into academic and career options. Senior school students, having recently navigated similar decisions, can offer peer-to-peer advice and relatable perspectives on the challenges and opportunities that lie ahead. Similarly, at the **university level**, professors and senior students can form a robust support network for potential as well as younger students. Professors, with their deep subject knowledge and industry connections, can offer specialized guidance on career paths within their fields and refer to own experiences. Senior students, particularly those involved in internships or research projects, can additionally share practical insights about the transition from academic to professional life.

To **enhance the effectiveness of this system**, i.e., interaction between schools and universities, it is crucial to sensitize the multipliers named above to specific topics relevant to the students' and young professionals' development and career planning. Means of doing so may involve training sessions or workshops that equip students and young professionals with up-to-date information on industry trends, potential career paths, and the skills most valued in the current job market. Yet, it is crucial to look at specific needs of the target group and to address it in a purposeful way not following "traditional" or "established" formats in a one-size-fits-all-and-has-always-manner.

Summarizing the finding from these two overarching strands regarding the mitigation of brain drain into options of actions and, eventually, policies gives the following:

Look at the different target groups and provide tailor-made information for them and their current needs.

Specifically address the individual level of persons and offer personal training and support.

Enhance the system by cooperation, collaboration and people navigating the system of actors and information.

4.3. Policy recommendations on enhanced cooperation with universities

Now taking a closer look at the Helix “Academia” as education mostly takes place there and, hence, the target group is comparatively easy to access shall provide more insights into the question “how” to enhance the cooperation between schools and universities in and with the region. As the literature review has already highlighted, the means of doings so are various and as the policy analyzes (see Ch. 3.2) have additionally stressed that (joint) funding schemes have been into play, too. The “Academia”-Helix thus shall encompass the role of universities and further education institutions, such as high schools or vocational training centers. The following recommendations are mainly derived from the UniCity events and enriched with findings from the Student Survey.

Additionally, strengthening networks among universities, start-ups, and local governments is essential. By **creating formalized innovation networks**, all institutions from the “Academia”-Helix as well as local firms can coordinate resources and facilitate knowledge-sharing, ultimately enhancing the region’s innovation capacity. Collaborating with the private sector through public-private partnerships allows universities to co-develop entrepreneurial programs, events, and funding mechanisms that benefit both students and the local economy. The establishment of co-working spaces and incubation hubs can further support such networks by encouraging cross-disciplinary innovation and collaboration among students from various fields.

In addition to fostering collaboration of regional universities with non-university partners, universities should enhance their educational programs by adding or expanding practical entrepreneurship training without compromising their scientific backbone. Such additional courses should **focus on real-world applications and regional challenges**, providing students with hands-on experience that is directly relevant to their communities. Doing this also informs the students about regional potentials and might this motivate them to stay in the region (see Ch. 4.2). It is also vital to offer more opportunities for students to learn **entrepreneurial skills** in practice-oriented environments that promote cross-disciplinary, cross-university, and cross-generational interactions.

To enhance the educational landscape and foster innovation, universities must focus on **targeted approaches** that emphasize practical skills, key competencies, and real-world applications. A well-structured curriculum should therefore incorporate projects that address regional challenges while equipping students with the necessary tools for their future careers. Emphasizing lifelong learning is decisive: entrepreneurial and innovative thinking, along with teamwork and leadership expertise, should be cultivated from an early age. This holistic approach not only prepares students for their future careers but also contributes positively to the broader community and economy.

Tu put it into a nutshell: decisionmakers should focus their activities on

Purposefully strengthening regional network both within academia and between academia and further regional stakeholders

Development, implementation, evaluation and, if necessary, modification of practice-oriented educational programs or trainings schemes in universities and schools.

4.4. Entrepreneurship-related policy recommendations

Entrepreneurship and entrepreneurial thinking have the potentials to reduce brain drain and to contribute to a viable region. Yet, one should refrain from seeing entrepreneurship and running own businesses as a one-size-fits-all solution. Personality traits play a role regarding success or failure of being an entrepreneur, which implies that policy efficacy regarding regional development via entrepreneurial thinking support may be limited from a micro perspective. Likewise, the societal acceptance, recognition and appreciation of entrepreneurs as well as the overarching attitude towards taking risks and handling failures make an entrepreneurial ecosystem not necessarily a solid basis for regional development as this aspect also is beyond the direct reach of regional policies. Analyzing the UniCity documentations and the interviews that were held with founders permit the following summary of how to support entrepreneurship and/or entrepreneurial thinking within a region.

To foster a stronger entrepreneurial culture and support aspiring founders, it is essential to create opportunities for meaningful **contact and networking** with role models, particularly entrepreneurs. Additionally, leveraging successful alumni and local entrepreneurs as role models further reinforces this message by demonstrating that challenges are surmountable and success is attainable. These interactions allow individuals to exchange experiences, reduce fears, and gain a clearer understanding of what entrepreneurship entails.

An interesting finding from the empirical material obtained in ENDORSE is that the focus with role models should be on offering authentic connections with **relatable role models** – individuals who are not necessarily perfect but are approachable and representative of an average student or young professional. This notion of “normal” role models is assumed to help reducing exaggerated respect, lowering entry barriers and therefore making entrepreneurship feel more accessible and achievable. Likewise, by providing insights into real-life challenges and successes, such role models can inspire confidence and offer practical advice, including opportunities for internships or hands-on exposure.

Acknowledging and actively addressing cultural traits is equally important in fostering an entrepreneurial mindset and encouraging students and young professionals to consider founding a business. One issue that should be mentioned here is how to deal with setbacks and (perceived) failure: failure should be normalized as an integral part of the journey, with universities and public campaigns emphasizing its value as a learning experience. As this is to a large extent a cultural and societal issues, direct policy means are difficult to implement. Yet indirect activities such as so-called “Fail Forward”-events can create spaces where entrepreneurs openly share their setbacks and lessons learned, helping to destigmatize failure and encourage resilience.

Support for start-ups should extend **beyond the initial stages of development**. Specific funding instruments need to be created for businesses in their scaling phase, typically five to seven years after launch. Structured mentorship programs, such as “Buddy-Coach” initiatives, can provide practical guidance tailored to the needs of start-ups at this critical stage. These programs should focus on hands-on support that helps entrepreneurs navigate the complexities of growth and expansion. Impulses for such funding schemes and mentoring programs

may originate from both the university's start-up centers and from regional economic support agencies (see Ch. 3.2 for existing policies), separately or jointly.

Entrepreneurship should also be presented **as a flexible pursuit** that accommodates diverse interests and talents. It does not have to be an all-or-nothing endeavor. Individuals can, for instance, explore it alongside part-time jobs, their undergraduate or graduate studies, as a second career path or supplementary activity. Marketing entrepreneurship and start-up formation under this color may be another way of addressing and attracting potential founders.

Reducing both mental and actual bureaucratic barriers is crucial for enabling entrepreneurs to start and scale their businesses more efficiently. Simplifying processes in collaboration with local governments and establishing "one-stop-shop" support services can significantly ease the administrative burden on founders. Eventually, by lowering the perceived barriers to entry and providing practical support throughout the entrepreneurial journey, this approach can inspire more people to take the first steps toward realizing their ideas while feeling supported at every stage of their growth.

Summarizing the findings into three key recommendations regarding what could and what should be done gives the following:

Create and promote networking opportunities with authentic and relatable role models.

Develop a positive, forward-looking attitude towards taking entrepreneurial risk and handling failures on the journey.

Provide targeted financial, administrative and mental support for start-ups beyond the take-off and especially during the scaling phase.

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Annex 1: Policies on the EU Level

Annex 2: Policies by country on the national, municipality and university levels

Annex 3: Visualization of policy interlinkages between national, municipal and university level, examples from Germany and Poland

Annex 4: Student survey, analysis by country

Annex 5: Policies and relevant bodies for their execution, tables by country