

The impact of the brain drain process on Romania - possible solutions in order to increase resilience

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Abstract

The paper presents the implications of the brain drain phenomenon in Romania, focusing on possible solutions at European, national and local level. The consequences of the brain drain phenomenon as well as the magnitude of the problem in Romania were analysed based on a quality methodology, namely the secondary analysis of statistical data, all in correlation with other concepts such as trust, vulnerability and resilience. Although there are still no analytical indicators to accurately measure them, the conclusions and recommendations that have been made showed that a bottom-up approach to highlighting the solutions already implemented can be seen as a future model for brain drain analysis.

Keywords: brain drain, increase resilience, cohesion policies

Introduction

The brain drain process is not a new phenomenon - it has been studied longitudinally from the perspective of economic implications at European level (Baláz *et al*, 2004). The socio-political ones have also been approached (Starfield and Frayer, 2007; Carr *et al*, 2005). The term "brain drain" was developed by the British Royal Society to refer to the exodus of scientists and technologists from the United Kingdom to the United States and Canada. Nowadays, it is commonly used to refer to the emigration of the most skilled individuals of a nation. Beine *et al*. (2008) note in their entry in the New Palgrave Dictionary that it is most often used to refer to “the migration of engineers, doctors, scientists and other highly qualified professionals. For example, the 2010 economy and the crisis in Ireland led to numerous stories lamenting the likelihood of university brain drain in graduates (e.g., Fitzgerald, 2011).”

The association of contemporary phenomena with the impact that they produce at local, national and even at community level are absolutely profound, if we take into account the perspective considered in the decision-making process. Scenarios could be outlined, starting from a tactical to an

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operational level, with specific measures regarding the reduction of the phenomena associated with the magnitude of the problem. In addition to the fact that it takes place geographically, the brain drain process (migration of staff in search of a better standard of living and quality of life, higher salaries, access to advanced technology and more stable political conditions) can occur at the organizational level, with a strong impact on industries in an emerging economy, if we refer to the situation of countries with such particular situations.

Before proposing solutions, we aim to understand the magnitude of the problem in a global context, approaching it then particularly in Romania. For example, the latest United Nations statistics show that in 2019, there were 272 million migrants worldwide, which is about 3.5% of the global population, compared to 2.8% in 2000. There are several aspects that contributed to this, such as the lack of jobs, the economic underdevelopment, but also low wages, the overproduction and underutilization of specialists, the lack of research and facilities, discrimination in employment, people's precarious existence, the lack of culture and scientific traditions and the inefficient bureaucratic institutions or the desire for recognition, all of them leading to the increase in the number of highly qualified emigrants in the last decades (Bălan and Olteanu, 2017).

Although, at European Union level two different trends can be highlighted in terms of migration of highly skilled workers. First of all, there are professionals and scientists who are citizens of the European Union and migrate, triggering the brain drain. The second trend refers to the immigration of non-EU citizens to Member States. However, besides these, there can be also identified the manifestation of an intense phenomenon of migration of highly qualified experts from central and southern Eastern Europe to Western countries, the case of Romania being eloquent in this respect, as many statistics highlight. The delayed role of globalization in Romania has been a probable cause. It was only after 1990 and through modest steps that the information society was introduced in our country. As borders have been opened up and more new rights and freedoms have become available to people, the phenomenon of migration has become more accessible to those eager to benefit from mobility. Thus, in a short period of time, Romania became a state with emigration as a mass phenomenon, its citizens leaving the national territory and choosing to live permanently or temporarily in more developed western countries. Until 2006, Romanian migration was characterized by a considerable part of temporary / permanent migration for work, being represented by individuals with secondary education. Once Romania joined the EU on January 1, 2007 the profile of migrants changed again, the migration of highly qualified and skilled people being representative, in the context of the economic crisis.

The main purpose of this paper is to analyse the impact of the brain drain process on Romania, insisting mainly on the negative implications. After this analysis, solutions will be proposed to limit the phenomenon, correlating measures with the general objectives of the European Union and underlining the role of the local level/authorities in this process (the dichotomy present between good practices and the incipient preoccupation of some institutions). *Why do talented people leave their countries and go abroad? What are the consequences of these migrations, especially on the education sector? What policies can be adopted to provoke such movements from developing to developed countries?* represent the main questions that we attempt to answer by having recourse to qualitative methodology. Hence, this paper will highlight the connection and feasibility of solutions in a current social and economic context, through various scenarios.

1. Theoretical aspects of brain drain process

The brain drain process, in one of the most comprehensive definitions (Dodani and LaPorte, 2005) refers to staff migration in search of a better standard of living and quality of life, higher wages, access to advanced technology and more stable political conditions in different places around the world. We can observe the first manifestations of the phenomenon in the field of health (Mejia, 1981), where international migration first appeared in the 1940s, when many European professionals emigrated to Great Britain and the USA.

In the 1970s, the World Health Organization (WHO) published a detailed study in 40 countries on the scale and flow of health professionals. According to this report, almost 90% of all migrant doctors have moved to five countries: Australia, Canada, Germany, the United Kingdom and the United States (Bach, 2005). The main donor countries reflected colonial and linguistic ties, with a dominance of Asian countries: India, Pakistan and Sri Lanka. By correlating the number of physicians per 10,000 inhabitants with gross domestic product (GDP) per capita, some of the countries that produced more physicians than necessary were Egypt, India, Pakistan, the Philippines, and South Korea. However, there is no reliable information in this direction. In addition, the difficulty to quantify a large - scale phenomena such as migration is obvious, if we refer to both the legislative framework (temporary, permanent records, etc.) and the social one, dominated by the emergence of other negative phenomena connected to migration. The opening of international borders for goods and labour - perhaps the tipping point of the key strategy - in the current liberal and global economy has allowed the phenomenon to emerge on a local scale initially in Central and Eastern Europe.

Thus, we are dealing with a very important and normative concept, that is trust, which represents more often the subject of studies in all parts of the world. However, researchers continue to rely on scores of amounts or averages of standard "trust in government" questions without fully understanding what the concept means or whether these measures are based on comparable ideas from all countries. Precisely because of the normative and subjective content of political trust, what constitutes a trustworthy institution is unlikely to be the same for citizens in different cultural and political contexts. Moreover, transnational research in more diverse environments improves regression analysis (Schneider, 2017).

The exploratory approach of the implications for about half of the countries analysed in the study (Scheinder, 2017) showed some variation between countries that inherited limited trust from the Soviet Union and those that were not part of Eastern or Central Europe. The indicator included citizen's trust in local, regional and national institutions. Another research group suggests a link between "social capital" that influences a wide range of economic and political phenomena. Unfortunately, confidence and recognition tend to have a positive influence, namely, when the level of recognition is low, the level of trust is low as well.

Trust is the most studied concept when it comes to governance. From a collaborative perspective, there may be joint efforts, but these will be studied sequentially. For example, Putnam (1993) uses Italian trans-regional data to show that local governments are more efficient where there is greater civic involvement. In recent years, economists have tried to identify the impact of social capital by using the attitude of confidence in the survey questionnaires. (Knack and Keefer, 1997).

Synthesizing the connection with a certain kind of social capital, the brain drain phenomenon was studied in Romania (Cotârlea and Dragolea, 2013) and the interpretations of the term based on a content analysis revealed the following results:

Table 1. Brain drain concept operationalization

Variable	Operationalization
Brain overflow	Surplus of experts / specialists. Due to the large number of specialists trained in a given country, people cannot be absorbed into the national economy. It could be a solution to remove unemployment.
Brain export	When the "exporting" country receives certain amounts of money for well-prepared young people for several years or only once on departure. It is difficult to establish if these fees cover the tuition costs of experts and / or the benefits they may bring to the national economy during their working life.
Brain exchange	The exchange of experts occurs when the loss of talented young people is offset by experts from other countries. The transaction can be conducted between an underdeveloped country or between two such countries, here the exchange being positive for both parties.
Brain drain	The phenomenon of migration of experts from a less developed country to a more developed nation, without any compensation - vital loss of resources.

Source: Adapted from Cotârlea and Dragolea, 2013

If we link all these pieces of information to the brain drain phenomenon, the proposed solutions bring a new contribution to increasing resilience, another new concept that is correlated with the brain drain phenomenon. Resilience and vulnerability are two distinct but interconnected concepts, useful for understanding the response of territorial systems and actors to change, shocks and unforeseen as well as slow changes, such as the brain drain phenomenon.

Resilience, according to some authors (Miller *et al.*, 2010, Pike and Tomaney, 2010), is associated to the assessment of the degree of adaptability and transformability of social and / or economic systems. Having a multidimensional and differential character, they depend on the scale of analysis and are quite dynamic from the perspective of the system in which they operate. Resilience is more often defined as the ability to return to the initial, desirable state, following the manifestation of risk-induced crises with various origins. Even if it is quite difficult to analyse the resilience in correlation with the brain drain phenomenon, the preliminary analysis of some statistical data can generate the necessary conclusions and recommendations regarding some scenarios.

2. The migration and brain drain phenomenon in Romania

For some Member States, the phenomenon of immigration is relatively recently compared to other countries, which have been facing this phenomenon for a long time. In both cases there is a challenge to integrate immigrants, either by developing and implementing mechanisms and policies for the integration of immigrants, or by reviewing existing mechanisms and policies (Popescu and Toth, 2009, p. 7).

The share of immigrants from Europe has grown rapidly over the last four decades, with one out of three immigrants from all over the world moving to Europe. Intra-regional migration is also high in Europe and Central Asia, with 80% of migrants choosing to move to other countries in the region. However, the opposition to migration is often strong, as the benefits tend to be long-term, while the costs - including travel and unemployment - are immediate and concentrated on certain groups (The European Way, 2019). According to Eurostat, the indicator of the number of emigrants in relation to the population of the states can give a certain characteristic to the brain drain process. Emigration is defined as the action by which a person who previously had his or her habitual residence in the territory of a Member State ceases to have his or her habitual residence in that Member State for a period of time that would be or is expected to be at least 12 months.

According to Database on Immigrants in OECD and non - OECD Countries (2015) on immigration, 40% of migrants in the OECD area come from only 10 countries. There are several

OECD countries with large migrant populations in other OECD countries. These include Germany (3.4 million), Poland (3.3 million), the United Kingdom (3.3 million) and Turkey (2.6 million). The main countries of non-OECD origin are, on the other hand, China (3.8 million), India (3.6 million), the Philippines (3 million), Romania (2.8 million) and Morocco (2.6 million).

We are interested in the trend regarding the number of emigrants. In Romania, the highest rate was recorded in 2008, a rate of about 2% of the entire population. The trend, on the other hand, is upward, as evidenced by recent but gradual increases (approximately 200,000 residents leaving the country). Statistical indicators are absolutely relevant - from a strategic perspective they would be used as a preliminary basis in shaping public policies.

According to Eurostat data (2019), compared to 2008, the number of Romanians with a faculty, doctorate or master's/ BA, MA or PHD degree living in another state than the one in which they were born was 144% higher in 2017. The number of Romanian high school and vocational school graduates living in 2017 in another EU country increased from 806 thousand people in 2008 to 1,437,000 people, a percentage of 78.18%. Those with a primary and secondary education level also mark almost have doubled their number. We are talking about 933,300 Romanians in 2017, an increase of 90.2%.

However, at the methodological level, there are studies that focus on consequences, starting from the trends of phenomena such as migration or quality of life (and that could give the phenomenon a certain association). For example, according to the 2018 Eurobarometer, approximately seven out of ten Romanians still support the free movement of EU citizens who can live, work, study and do business anywhere in the EU (69%). The upward trend recorded in 2017, which reflected the positive attitude of Romanians towards the European community, is maintained in 2018, but rather in terms of the enlargement of the European Union to include other countries in the coming years. This priority is the second most important among Romanians (65%), but the last in the top of the priorities mentioned at European level (43%). According to the same Barometer, for Romanians, the European Union means the freedom to travel, study and work anywhere in its territory, and this fact is mentioned by over half of the respondents surveyed in 2018 (53%). In fact, 69% of Romanians say they are in favour of the free movement of EU citizens, who can live, work, study and do business anywhere in the EU. At the same time, at EU level, citizens in the Member States mentioned unemployment (23%), rising prices, inflation, the cost of daily living and immigration (21%) as the main problems at local level.

Similarly to the internationalization processes of the phenomenon, Soros Foundation (2011) published a study on the implications of the brain drain process on Romania taking into consideration the field of public health, with some examples from the history and initiatives undertaken. Therefore,

calculations show that, in 5 years, at a rate of 2,000 doctors who migrate annually, the Romanian society will become extremely vulnerable, because it will lose 20% of the trained workforce which is a survival resource in the national community. The emphasis is progressive, as there are several phases of accelerating the process. In an ideal perspective, a state should note that the migration of doctors, which is a specific phenomenon of the fourth wave of migration in Romania, does not have the same "lucky" features as the previous waves, from which the entire Romanian society benefited. Moreover, this new dimension of migration management strategy requires specialized knowledge of the phenomenon that is completely missing at present. The situation in Romania involves a fairly careful analysis of the exodus of young people - here the phenomenon of unemployment is significant, especially in small and medium-sized cities. The modern trend is to speed up the process through various policies that do not facilitate the access of young people to education and then to a job. Hence, there seem to be no advantages for the country of origin. (The relationship between the country of origin and the foreign one is quite weak in terms of advantages for the first one.)

Romanian analysts concerned about the phenomenon of migration of educated people have reached the following conclusions. From a financial point of view, for every migrant who graduated from a university, Romania loses approximately 50,000 dollars / person. This amount represents the cost of 16-20 years of schooling, money that cannot be recovered by the Romanian society. Paradoxically, at the Government level, no importance is given to this topic, being generally debated as part of the labor shortage, without any solutions.

3. Solutions regarding the decrease of the phenomenon in Romania and the increase of resilience

Solutions to counterbalance the migration of the most valuable people, by encouraging them to stay in their country or by motivating their return to Romania, must try to remove the causes that determine migration. Therefore, the analysis of national education must look at some clear performance indicators. Solutions could be correlated with intrinsic and extrinsic activities. Research funding is a current problem and could be solved by increasing the percentage of GDP allocated from the state budget according to the minimum value provided by law of 0.8%. These measures could increase the research potential and then take it into account by developing high-tech, value-added industries; this measure can play an important role in the economic healing of the country. The main factors that give realism to concrete actions to be taken are also worth mentioning, as it follows:

- At *government level*: Consistent investment in education in general and higher education in particular;
- At the *tactical level*: A qualitative informational and technological base;
- At the *operational level*: High levels of government spending associated with research and development;
- At the *legislative level*: Effective laws regarding the protection of intellectual property that will support research and development;

The key challenge for empirical effort is to identify the plausible source of exogenous variation either in migration opportunities or in the yield and receptivity of human capital.

At European level, the issue can be debated at its roots. As already explained, the brain drain phenomenon does not activate in a unitary way, but it is maximized by a certain more or less favourable context. For example, the European Committee of the Regions (CoR) is an EU advisory body made up of representatives from the 28 Member States, elected at local and regional level. Through the CoR, they can directly express their views on EU legislation that has an impact on regions and cities. Basically, the representatives are the key factors with regard to the timeliness and feasibility of solutions. Regional and local authorities, associations, NGOs, experts and academics can participate in online surveys, consultations and events. The importance of the CoR is vital - we can think that the reporting of neuralgic problems (such as brain drain in Romania) could be debated from several perspectives, with national and community implications. Within the CoR we could see the importance of solutions from other countries in terms of European issues on growth and jobs, development and subsidiarity, combating climate change and cross-border cooperation. A clear, sustained and well-argued project can be launched in a plenary session in this respect. The Union is committed to diversity and operates on the principles of reciprocity.

As it is known, most initiatives are capped when the financial factor is disputed. One third of the EU budget, is allocated to the EU cohesion policy, which reduces regional disparities, creates jobs, opens up new business opportunities and addresses major global issues such as climate change and migration. Consequently, the brain drain phenomenon can be approached sequentially in the Committee and financially supported. In addition, the actors who could implement the solutions (Romanian regional universities for example) could participate in consultations, emphasizing the phenomenon from its roots (academic communities are the biggest connector in the analysis of this phenomena).

In the form of *#CohesionAlliance*, public campaigns, exchanges of international practices and local visibility through non-governmental organizations may be initiated. Further, with regard to

youth policies, the Erasmus+ program has always facilitated an exchange of good practices among the young population. Funding for this project could be much more visible given the fact that more and more young people are interested in finding perspectives and a high level of quality of life in Western European countries.

At the national level, as we identified in the analysis section of the phenomenon, the concept was only considered as integrated in various measures of employment strategies or of vulnerable groups' integration. The most important measure can work on the incentive-reward relationship, prohibiting measures being irrelevant in the context of European principles on the economy and free movement of citizens. Therefore, there are a number of other solutions that could be implemented, such as:

- Granting fiscal facilities for employees or for companies operating in the country. Information technology is the key strategic factor especially in the North-West and West region of Romania. The IT-C sector is operational, an example being the multitude of IT clusters that have been materialized and that function efficiently. The IT sector is perceived as the engine of the development of some cities (such as Cluj-Napoca) and could expand in the coming years due to the specialization and vitality of the cities that have a University. Developers are exempt from paying payroll tax and companies are encouraged to develop their activities through tax facilities such as the single tax rate. In other areas considered a priority, large companies negotiate directly with the state certain tax facilities (currently *Mital Steel* and *Renault*). Financial measures could work as an incentive, but do not guarantee a certain sustainability. In addition, the issue needs to be addressed nationally, due to real centralization.
- "Ignoring the phenomenon" in the idea that the lack of departed specialists will be filled by specialists from even poorer countries. It is not a fair policy, but it could work for some underdeveloped regions or small communities. In the absence of initial capital, specialists could bring the financial resource, the human resource being much more connected through these networks.
- Encourage technical assistance. We know that nowadays the public sector is quite oversized and the work in the administration is quite standardized. For example, there are programs that would facilitate specialists (such as internship programs) or even public-private partnerships. The critical point could be public health, the area with the most acute crisis in terms of staffing and underfunding. The disparities in the field of public health are very obvious, the quality of services not being correlated with current trends. For this reason, a cut could be achieved by

additional funding or by ensuring a public-private partnership, which would include more specialists.

- Encouraging professional connections between specialists in the country and their compatriots who have migrated leads to a better understanding of the conditions in the host country. In this section, the phenomenon could be amplified due to a rather strong intragroup social capital.
- Identifying sectors where industrial development is significant and the need for schooling is under-dimensioned. Thus, certain government policies could facilitate, in some active cities, sources (creative industries, food industries, etc.) and their correlation with university tuition. The role of local universities could increase, providing local expertise and recognition. The expansion of university education in highly trusted university centres could seek to cover teaching activity in small and medium-sized cities, where educational infrastructure exists.
- Increase funding in the research and development sector. Financing the activity in this economic classification is crucial. Statistics show a share of less than 1% of R&D funding in GDP (last positions in the European Union), which is a wrong approach, in a sector that deals mostly with the problem of the brain drain phenomenon. Hence, in the absence of infrastructure and funding, you cannot be encouraged to perform.
- Visibility and internationalization. For example, in the 1990s and 2000s, more than 900,000 highly educated people entered the US labour market as a result of a temporary visa program. Germany has adopted a green card work permit system that allows educated immigrants and their families to stay in the country for 5 years. In Romania, young people who graduated but could not find a job would enjoy this measure. Such a program could be initiated in Romania for specialists from other countries. A new approach in a fairly uniform culture could change perceptions and it would be appropriate to carry out a pilot program. After the feasibility analysis, such a measure could be included for Romanian citizens, but with an emphasis on the final destination and the creation of facilities also through public-private partnerships. Absorption is the most difficult indicator to achieve, but not impossible if the feasible measures are adopted.
- Promoting the *Start - UP Nation* program. The *Start - UP Nation* program is a program which encourages and stimulates the establishment and development of small and medium enterprises (SMEs), implemented by the Ministry of Business Environment, Trade and Entrepreneurship. The granting of *a minimis aid* under the Program is a real catalyst for communities and a real financial support for the applicant specialists. The program is in

accordance with EC Regulation no. 1407/2013 on the application of Articles no. 107 and no. 108 of the Treaty on the Functioning of the European Union to *minimis aid*. The main objective of the *minimis aid* is to stimulate the establishment and development of small and medium enterprises and improve their economic performance, with priority in less economically developed geographical areas, where the density of SMEs is low, compared to the European average. The advantage of this program is that it covers the 8 development regions, testing creativity and, at the same time, the bureaucratic work in a community interest. An adopted policy that would facilitate the reduction of fees for them could also be essential as a promoter for project submission. Romania and Cyprus had the lowest share (below 3%) of fast-growing companies of over 12%, according to the latest EU report on SMEs (EU SMEs 2016/2017). It would also be beneficial for certain support and consultancy schemes (specialists with experience in regional workshops) to provide public expertise in an area that is not at all friendly in terms of funding. These SMEs could have results in terms of employability and reduced migration, especially in those communities where high unemployment rates are recorded.

At the local level we can opt for small initiatives but with a strong impact, especially in the field of exchange of practices. An example of good practice is represented by Belgium. The BEWARE Fellowships Industry scheme aims to enable Walloon SMEs or accredited research centres in the Walloon-Brussels Federation to benefit from the expertise of highly qualified researchers and, consequently, to encourage an innovation process within the Walloon host. The program lasts five years. BEWARE Fellowships Academy is a scheme focused on technology transfer. It allows researchers (between 18 and 36 years) to carry out a research at a university of the Walloon-Brussels Federation, with 25% of the time to be spent in a Walloon company. Here the approach is one of collaborative governance (Nabatchi *et al.*, 2018) in which the increase of the integration of specialists relies on a collaboration, thus reducing the phenomenon by encouraging expertise. In Romania it is absolutely feasible because the research centres would benefit from an important expertise from the private environment and the corporate responsibility policies could be directed in this respect.

Another successful initiative is Copenhagen Capacity. In 2014, Copenhagen Capacity launched the “Ambitious Talent Strategy for the Copenhagen Region 2014-2017”. The strategy involves the participation of 12 members of the group (mayors from regions near Copenhagen, representatives of universities and companies established in the region). The ESF-funded Talent Bridge project and the Capital Region for the Growth Forum aimed to maintain the region as a leading metropolis in Northern Europe. One project stood out then - “We will strengthen your career in Copenhagen”. This

initiative consists of running "Cluster Campaigns" through the digital channel. These campaigns are aimed at potential foreign jobseekers interested in settling in the region. According to the Greater Copenhagen (Copenhagen Capacity website) analysis of the potential budgetary impact of incoming international talent, each foreign worker is likely to bring EUR 96,000 / year to the regional budget (EUR 295,000 / year if the worker has a family).

In line with the national approach, Hungarian cities have also begun to consider ways to stop the brain drain at the local level. In 2015, the Nagykanizsa Local Council and the Local Urban Group, made up of talented young people, NGOs and representatives of social institutions, joined *CHANGE!*, a 3-year URBACT project (2015-2018). A joint dialogue was organized in the form of regular meetings with experts from their area of activity. This was followed by an analysis of needs and strategic points, the solutions being proposed by participants.

In Romania, the initiatives are quite limited, but identifiable especially in the cities of growth poles in the North-West region and in the South Region (Bucharest). *Cluj - IT* is a cluster-based organization made up of organizations active in the field of information technology: service providers and software solutions, universities and research institutes, public bodies and other catalytic organizations. Established in October 2012, Cluj IT is an innovation-based value chain network of Romanian IT companies and related organizations whose purpose is to increase the competitiveness and growth of IT services and products on international markets and to create a strong sustainable public-private partnership in order to improve the quality of life of the community. The ecosystem became visible and allowed the expertise of young people involved in the ClujITKnowledge platform, thus finding job opportunities and visibility. At the strategic level, for the coming years the construction of an Innovation City, where job opportunities and the functionality of a modern city are indicators for the vitality represents the main aim. Even if the initiatives seem to be taken only in certain regions, funding opportunities are accessible, through the European Structural Fund and through the European Regional Development Fund, meeting therefore the priorities and policies of the European Union in the concerned countries.

Conclusions

Free movement of workers, one of the fundamental rights enjoyed by European citizens, has facilitated intra-EU labour mobility. However, in some regions ("sending regions") this freedom has led to a significant migration of highly educated labour to the benefit of other regions ("receiving

regions"). This is driven by a growing competition for talent on the one hand, and the limited ability of sending regions to create attractive conditions for its workers, on the other hand.

Local and regional authorities (LRAs) in sending regions have to deal directly with the socio-economic effects caused by the significant loss of talent or brain drain. Addressing these effects may require the formulation of appropriate policies and / or measures to retain, attract or regain a high level of educated workforce. As we have pointed out, the deepest causes are revealed by the fact that the analyses were carried out only at the stage of existence and no concrete measures were adopted, as evidenced by regions in Northern or even Central Europe.

As a first recommendation, it is essential for local and regional authorities to be aware of the problem of brain drain. They should also identify the talent they want / need to retain, attract or regain. Information can be obtained even after a preliminary data analysis. For instance, establishing a dialogue with the involved talent and a collaborative approach seem to be essential, in a context where collaboration is the key. This is especially true for young talent/people.

A second recommendation concerns the need for player coordination and resource synergy on which to focus talent-based growth strategies. Both circumstances arise, for example, when there is a smart specialization strategy. Coordination between relevant players is also envisaged to improve local / regional correspondence of talent supply and demand. Similarly, the aim is to strengthen a region's capacity to produce talent by nurturing its talented youth - the role of universities as a catalyst.

A third recommendation is related to the opportunity to identify key leadership sectors for retaining / attracting talent. Examples show that targeting promising sectors by local authorities can definitely contribute to the competitiveness of the region.

A fourth recommendation is to stimulate the absorption of outside talent. This could be achieved by attracting international talent and / or regaining such talent that has previously moved. It may involve the creation of specific or medium-term projects or strategies, as well as brand initiatives aimed at rewarding talent.

The last recommendation would be to reduce some potential legislative barriers (for example, laws that facilitate and not necessarily burden the beneficial intent of young talent). Shared solutions in exchange for the European best practice could be the key to a solution and an incremental approach. Strategic directions are essential and the measure of impact and evaluation will restore the predictability and sustainability of actions. Even if it tests the regions in Romania, the brain drain phenomenon plays a certain dynamism in local relations, the promoters of bottom-up initiatives that would provide the best results over time. Nelson (2017) proposes an analysis model that would reflect a certain intensity in the local and regional policies undertaken. The pressure factors that favour the

brain-drain phenomenon could have an intrinsic cause. Why are young people's skills and qualifications not recognized? What are those causes and the vicious circle? How could the solutions be implemented? Following the scheme, the model would present a reference for the particularization of the phenomenon in Romania. Retention or a certain culture of resilience could be a predictor in order to minimize it. Even if the infrastructure and technical assistance are, at the beginning, the proven initiatives are sustainable and can be easily integrated into Romanian culture.

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