

EUROPEAN'S YOUTH RESILIENCE: FROM UNIVERSITY TO THE LABOR MARKET

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Abstract

2022 was declared the European year of Youth and in this context, the role of universities as disseminators of knowledge and creators of the future workforce is very important. This paper seeks to address several questions regarding the correlation between R&D, the existence of qualified work force, the innovation degree, and the adaptability of universities to labour market requirements. While underlying the role of human capital in ensuring regional development, the significance of research and innovation in stimulating the resilience of universities is also emphasized, giving an overview on the Romanian case. In the article, some comparisons between Romania and the rest of the EU member states, related to young generation, are described.

Keywords: European youth, universities, innovation, development, resilience

Introduction

Before presenting some European's youth statistics, we should first look into the endogenous growth models that emerged in the 1980s and were further discussed by Uzawa (1965), Romer (1994), Arrow (1971) and Barro (1990), all emphasizing the importance of investments in research and development (R&D), human capital, infrastructure and thus, creating innovation. While the theory of regional growth has its origin in the neoclassical model of exogenous growth, being based on the Solow model (1956), the process of regional endogenous growth has been attracting more and more attention from different fields of academia (economic, geographical, social), starting from Romer's (1990) attempts to endogenize technologies and human capital (Lucas, 1988). Therefore, there is an "umbrella" of endogenous growth theories at regional level (Stimson et al., 2011): competitive advantages (Porter, 1990), new economic geography (Krugman, 1991), innovative regions (Saxenian, 1994), regions of knowledge (Simmie, 2011) and more.

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One of the central pieces in this paper is represented by the younger generation and universities, the latter seen as a “true economic development engine” (O’Mara, 2005), which contribute to regional innovation and scale effects in economy (Sanchez-Barrioluengo, 2014), with academia having the capacity to create and improve the set of skills required for a well-prepared workforce, often encouraging the appearance of new industries (Marques, 2017), significantly contributing to the innovation network within their region. However, there are often shortcomings, especially in the peripheral regions when it comes to absorption of graduates on the labor market, leading to a rise in unemployment (Evers, 2019; Germain-Alamartine, 2019). Even more, the academic peer’s contribution to the innovation chain will be strictly linked to a rather intrinsic set of motivations, opportunities offered for research and the degree of willingness of researchers to stay in a particular region. While some authors talk about the reasons for why an increase in education would affect growth more positively in countries closer to the technological frontier, citing the reallocation, the migration, and the market size effect (Aghion et al., 2009), others focus on the relationship between universities and innovation (Andersson et al., 2004; Bartik and Erickcek, 2008; Feng and Valero, 2020). Therefore, direct and indirect channels for pushing the frontier of knowledge (Carlino and Kerr, 2015) and making the economy more resilient (Hartt et al., 2019) will be generated. Martin and Sunley (2017) have repeatedly emphasized the importance of resilience as an ability to absorb shocks; thus, the universities could face the shocks by molding future generations through appropriate skills. Even OECD recommended universities to be incorporated into regional innovation strategies to help drive growth (OECD, 2007), whereas a smart specialization strategy has been imposed at EU level since 2011, making mandatory the strategic involvement of universities in regional development. But it should be recognized that the accumulation of knowledge has its roots in the economic and institutional characteristics, making infrastructure and accessibility pre-conditions for the innovative process (Nijkamp et al., 2022). Several authors pay special attention to the importance of strategic planning of the innovative development in higher education, talking about the universities’ chance to thrive in a highly competitive global scientific area under the everchanging conditions of digitalization and internationalization (Kassymova et al., 2019; Zhavoronok et al., 2020). Even more, a well-grounded digital adaptability for universities, especially in emerging markets, contributes to a more sustainable system, capable of returning to the desired path after shock perturbations while enhancing the attractiveness level of education. In the so-called quintuple helix, developed and modeled by several authors (Carayannis et al., 2012; Campbell et al., 2015; Tonkovic et al., 2015; Halibas et al., 2017) we find five main stakeholders as follow: the knowledge sector (academia), government, business/private, civil society and creative industries, with adjustments in each model, all promoting a knowledge economy that pursues innovation. After all, each country’s main goal is to improve its welfare levels for its citizens and to increase its competitiveness levels globally.

Currently, one of the most effective ways in order to achieve these goals are shaped by innovation and indirectly, by human capital (Dineri, 2020). It's impossible to deny the strong correlation between a nation's educational system and its economic development, the expenditure on education and human capital being vital aspects in a country's socioeconomic development status (Jellenz et al., 2020), while emphasizing how highly influential is tertiary education in particular to a country's economic performance.

1. The situation of the European youth labor market

To understand the current situation of the European youth labor market and its main strengths and weaknesses – while taking a particular interest on the Romanian case - we briefly discussed a few relevant indicators in that notice by analyzing the results presented in the EU Youth Strategy, the European Innovation scoreboard 2022 and European Skills Index¹, while also taking a look into the younger generation's involvement in today's society across EU member states. Specifically, we took a particular interest in checking on one hand unemployment rates, the standard of living, requirements and opportunities in the labor market for recent graduates and on the other hand the education levels, participation rate in voluntary activities and the interest towards performance.

1.1. In need for government support and a better infrastructure

Here, we ask ourselves how can the model thrive in a country where one of the actors neglects part of its duties? While numerous countries choose to invest in innovation by encouraging and allocating funds for academic research, Romania lags behind, allocating just 0.47% of GDP for R&D in 2021, far below the European target of 3% (Europe Strategy 2020, 2020). Under-investment remains a massive problem for the Romanian academic field as funding mechanisms to support researchers and innovation remain weak. Obviously, such a low level of spending on core public services like education creates a certain socio-economic background that determines an essential impact on human capital.

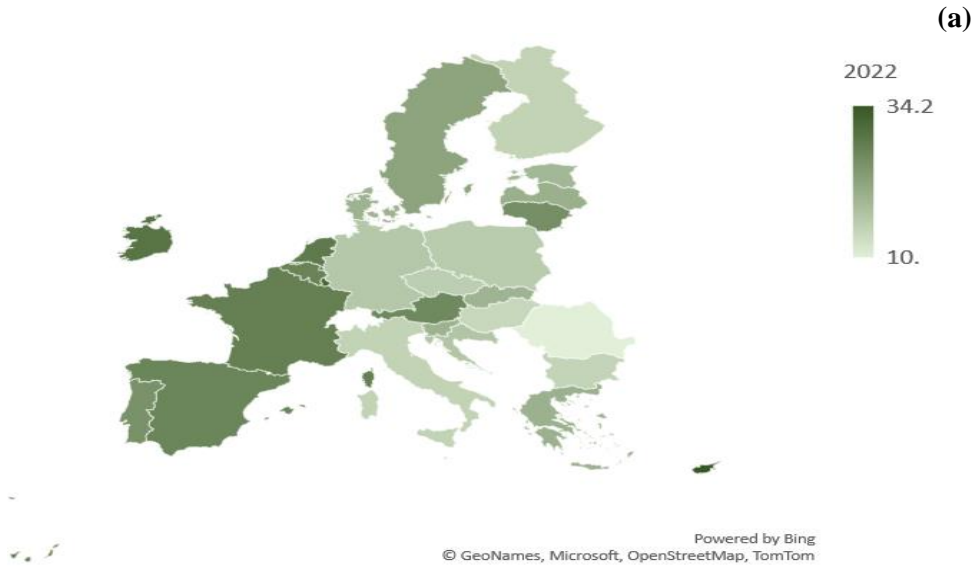
According to Regional Innovation Scoreboard 2022², the Romanian innovative sector stands poorly, the country falling into the least innovative category classified as the “Emerging Innovators” - bottom low performers. One of the main reasons that led to this reality is the low percentage of young people (below 30) that had completed tertiary education (10%), compared to 20.6% at European level (Eurostat, 2022).

¹ European Skills Index. (2021), retrieved from <https://www.cedefop.europa.eu/en/tools/european-skills-index>

² European Innovation Scoreboard 2021. (2021), retrieved from <https://ec.europa.eu/docsroom/documents/46013>

Obviously, this has strong implications for the labor market as employment rates will be higher for better educated people.

Figure. 1. Youth with tertiary education in EU (a) and unemployment for citizens below 30 with tertiary education (b)

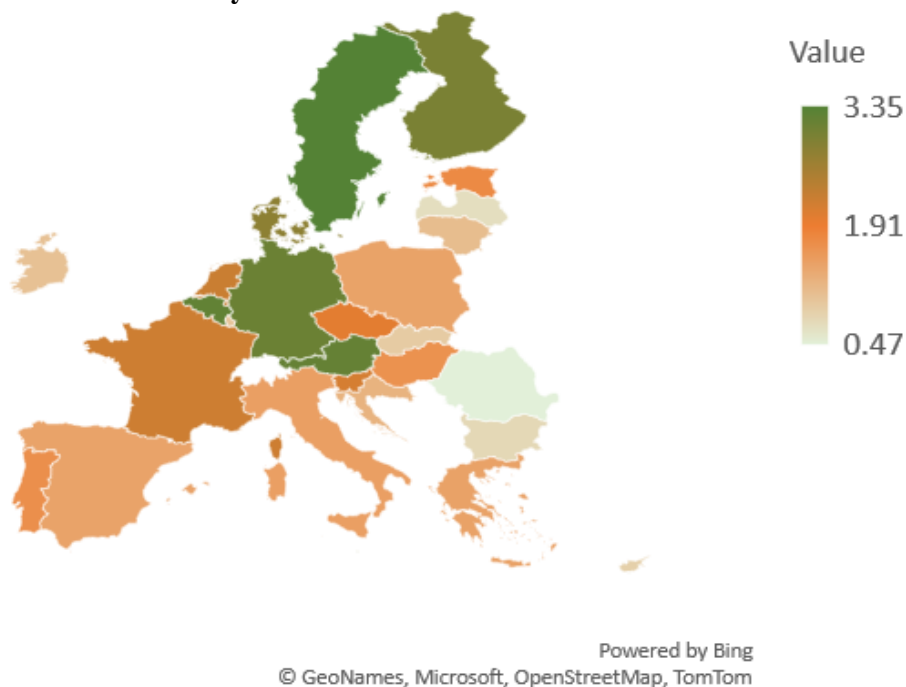


Source: authors' representation based on Eurostat data

When talking about specialists it is worth bringing to the fore the need for a better funding of academia research and R&D in general. Romania stands poorly in this chapter as well, having spent only 0,47% on R&D compared to the EU average of

2,29% in 2021. In agreement with the target imposed in Europe 2020³, only Belgium (3,22%), Germany (3,13%), Austria (3,19%) and Sweden (3,35%) managed to meet the 3% criteria investment in R&D up until now. At the opposite end of the scale with an R&D intensity below 1% we found Bulgaria (0,77%), Cyprus (0,87%), Latvia (0,69%), Malta (0,64%) and Slovakia (0,93%) only Romania having a threshold below 0,5% for three consecutive years (Eurostat, 2021). While over the last 10 years, R&D intensity rose in no less than 19 member states, the situation in Romania remained at best the same, having insignificant fluctuations of 0,01.

Figure 2. R&D intensity across EU in 2021



Source: authors' representation based on Eurostat data

As a direct consequence, the personnel hired in this sector remained at low levels throughout the years and the lowest within the EU, at just 0,3805% in 2020. The EU average shows that 20,6% of people aged below 30 obtained a Phd degree, a value that kept constant over the last two years. However, performance in this sector has slowly decreased in Romania - going from 13,4% in 2014 to just 10% in 2022. At the opposite end, best increase in performance has been registered in

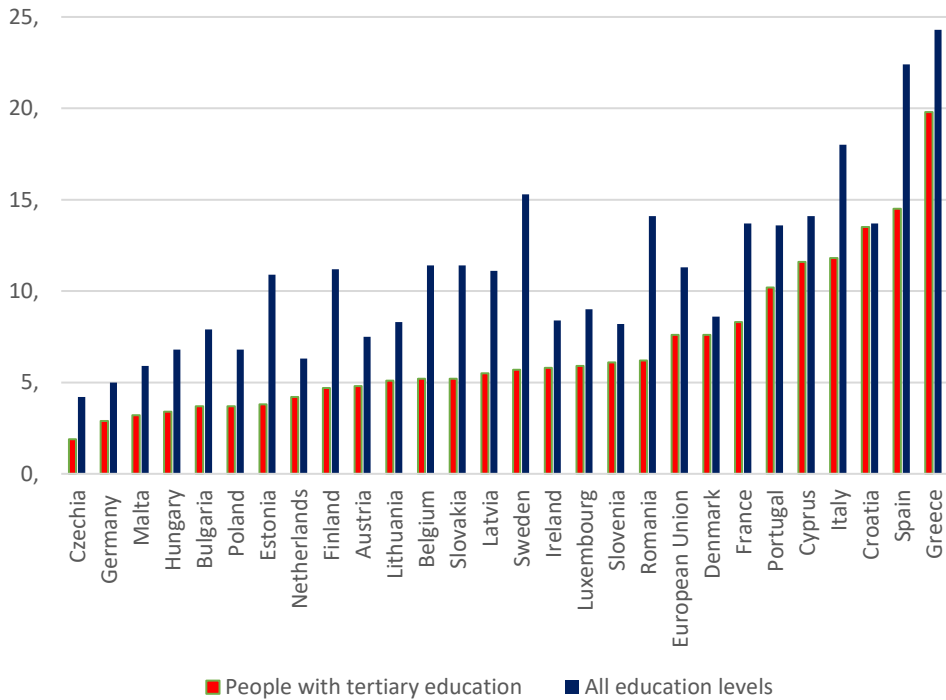
³ Europe 2020. (2020), retrieved from EUR-Lex - 52010DC2020 - EN - EUR-Lex (europa.eu).

Luxembourg and Portugal, countries that managed to increase their numbers of Phd graduates with more than 9%.

In Romania, the unemployment rate among young tertiary education graduates dropped over the years, from 14.6% in 2013 to just 6.2% in 2022, below the European average of 7.6% (Eurostat, 2022). However, if we shift our focus towards the European Skills Index, we can observe that Romanian graduates often get a job that doesn't match their competences. When it comes to the overqualification rate, Romania scores only 55.6 points, proving how often highly educated people are working in lower skilled jobs that don't require tertiary studies, once again pointing out the major problem within the Romanian labor market: the mismatch between the demand and supply of skills, while the indicator for low waged workers rose up to 92, the biggest in the entire Union. Adding to that the fact that employment among recent graduates scores only 39, one of the lowest in the EU, correlated with Romania being at the bottom in high digital skills and third to last in math, reading and science scores, there's no surprise in having the biggest drop out rate (early leavers) among EU member states – 15,6%, more than triple compared to countries such as Poland (4,8%), Greece and Slovenia (4,1%). Therefore, the fact that Romania's tertiary education graduates' percentage – the lowest in the European Union - has improved over the years, rising to 17,1% in 2022 compared to 12,9% in 2011 does not cover the shortages in the labor market; even more, it discourages the young generation to pursue an academic career giving that in most cases underemployment is a standard rule.

Unlike Romania, that falls on the 25th place out of 31 countries when it comes to an ideal output in performance, Czech Republic, also a former communist country until 1990, ranks at the top of the list since 2020, making first place, with an activity rate in the labor market participation of 41, while also registering the lowest youth unemployment rate in the EU (4,2%) compared to Romania, who only scored 26 and had an unemployment rate among youngsters of 14,1% in 2022. The differences are also high if we take a look at the level of recent graduates in employment (39 for Romania compared to 74 for Czechia) and most importantly skills matching (67 compared to 93). Such results place our country second to last when it comes to skills development, registering a poor performance in skills activation, placing Romania in the low-achieving countries.

The European Union is taking measures against such numbers by launching initiatives and programs such as the European Year of Youth in 2022 and currently, the European Year of Skills as the Digital Economy and Society Index shows that 4 out of 10 people lacks basic digital skills. In an attempt to encourage its citizens to embrace the lifelong learning process, the EU has endorsed the social targets for 2030, stating that 60% of adults should be in training yearly. This is imperative keeping in mind that a well aligned workforce with the market requirements contributes to sustainable development, raising the stake for companies and supporting the innovation process.

Figure 3. Unemployment rates by education level for youth in 2022

Source: authors' representation based on Eurostat data

In this scenario we find it necessary to improve the relationship between the academic and the private sector aiming to reduce the distance between companies and the educational field, following the Czech model. They have high educational programs within the public universities, offering graduates multiple opportunities to find a job - even to those who studied in English and have no knowledge of the Czech language. Besides, a stronger cohesion between universities and labor market allows students to take part in local and international projects, developing soft and hard skills alike, which facilitates an easy entrance into the professional field. Another aspect worth mentioning is the flexibility of the labor market (also present in Poland) when it comes to working hours and the effectiveness of the public employment services which adds to the high average salaries. All are missing aspects from the Romanian labor market, where one the main issues young graduates encounter is the lack of experience in the work field, a requirement needed to get a job with a decent salary. However, just like a domino effect it's almost impossible for the majority of students to have a job before graduating and still frequenting courses, most dropping out of school after a semester or two or choosing not to present their final thesis and thus never graduating. Here lies the profound need to reconfigure and transform the

educational system and to adapt it to the market needs, curriculum and program wise, but also the necessity to get closer to the work field. For the infrastructure to fundamentally change, the initiative must belong to both parties, as the responsibility for well-educated generations must not lie only in the hands of universities but also the government and the private sector, as it is in the country's interest to shape better specialists.

1.2. A post-pandemic view over the European education system and labor market

It is imperative to also briefly mention the acceleration process of sketching a digital agenda for universities due to COVID-19 that should have started years before. The movement of universities to the online environment has stirred mixed reactions in the academic world, among students and professors alike, each having mixed feelings about the decision. We admit there are several advantages to moving online, the most noticeable being the removal of the financial barriers, giving access to a wide range of specialized events for free, and bringing researchers closer together, indirectly supporting and encouraging the innovative process in the meantime. Another positive aspect impossible to neglect is the improvement of time management since the system now allows a bigger flexibility in schedules and events. However, it is a system that has dramatically reduced the interaction process between professors and students, the latter struggling with the lack of motivation, most of them being characterized by high levels of disinterest while missing the social aspects of university life. Distance learning and the digitalization agenda of universities definitely has its benefits, but ultimately, a hybrid system turns out to be the optimal solution for everyone.

But the shift did not happen only in the educational field, but also in the private labor market as a divergent workforce emerged from the universities benches asking for better compensation, more vacation days and bigger salaries as Europe is facing an ongoing cost of living crisis, while the corporate sector is raising concerns about the skills gap and the inability to attract talent. The biggest labor shortages in Europe appear to be in the building and machinery sector, while health and ICT are close behind, followed by the food industry and the teaching jobs for early childhood and primary educators (Future of Jobs, 2023). Indeed, the EU tackled some issues signaled by students and recent graduates, regulating the unpaid internships, allocating every year more money to the Erasmus+ budget and attempting to involve and engage the younger generation more in European affairs, but the core problem remains.

Currently, the rising cost of living is a worrying matter for 93% of the Europeans, not just for the younger generation, followed shortly by the threat of being at risk of poverty – a danger the youth is much more exposed post pandemic than before 2020. While for some countries the cost of living remained steady (Czech

Republic) and for most even dropped a few points compared to last year (Luxembourg, France, Germany, Belgium), others (Romania, Bulgaria and Lithuania) stand at opposite ends, marking a substantial increase in the living costs by roughly 2 points. Even though the blame falls mostly on the lack of government's actions for the wellbeing of the people, the situation is generally widespread throughout Europe.

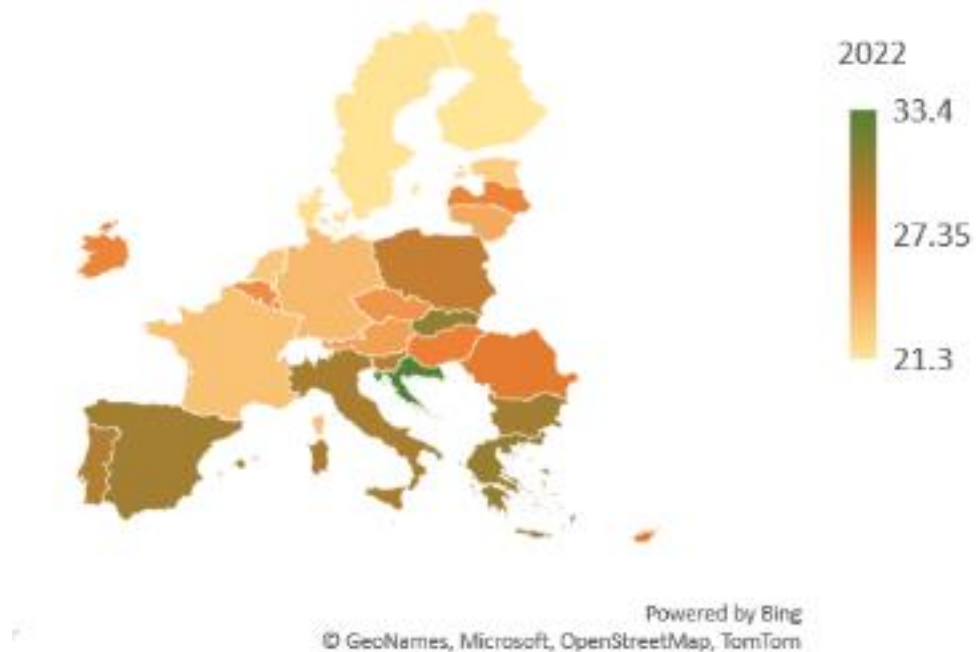
Figure 4. Cost of living Index 2023



Source: authors' representation based on Eurostat data

After an economic crisis from a decade ago, a pandemic that kept us on lockdown for 2 years and it still has repercussions and a current inflation spiking monthly, the future doesn't seem to withhold bright solutions. Despite internships being offered, non-binding guidelines provided for member states to help the youth find jobs, the wages still remain far below the standard living wage, endangering their integration in the labor market and also forcing them to find other ways to make ends meet, opting for living with their parents several years without the prospect of buying a place of their own.

Figure 5. Estimated average age of young people leaving the parental household in 2022

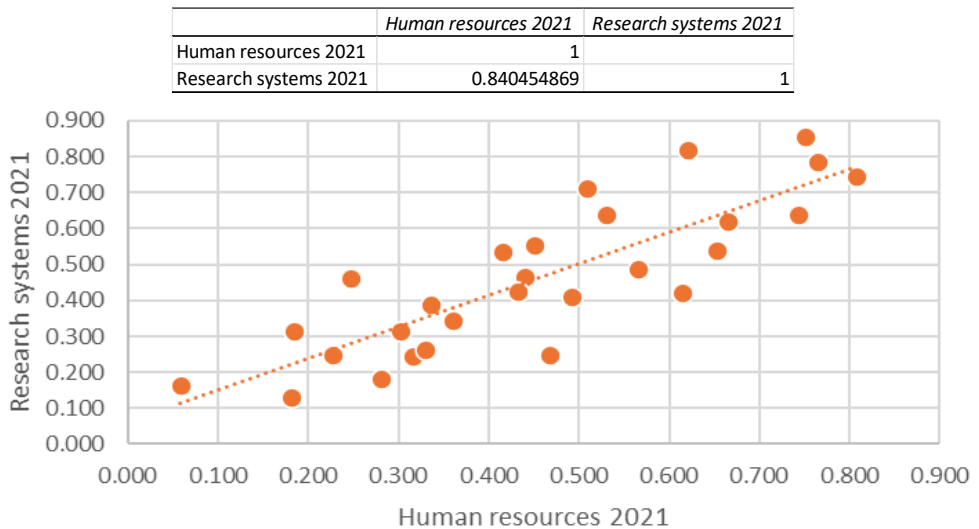


Source: authors' representation based on Eurostat data

With inflation rising through the roof, interest rates tagging along, and wages being left behind, Millennials and generation Z is struggling to pay rent or even save a deposit for buying a house. While only 32% of young people live independently across Europe, some states find themselves in the situation to take extreme measures. Spain, for instance, is aiming to support its younger generation by offering special renting allowances and abandoned houses as the regulations put into place after the economic crisis in 2008 were meant to preserve the financial stability of the member states also made it almost impossible for the young adults to borrow. France maintained their energy prices capped to just 4% for the younger generation up until January 2023. Other countries, such as Lithuania, struggle to withhold their future working class as 47% of the immigrants are people aged between 15 to 25 years old, while the ones that obtain a degree try to find a job for a foreign company hoping it will up their earning potential. In Italy, most students find in the position to ask for the financial support of their parents as there is no minimum wage and internships are roughly paid with approximately 800 euros a month, rent being more than 50% of the income. OECD expressed their warning regarding the younger generation in the context of the pandemic, stating that there was a long term scarring risk on their economic situation and careers. (OECD, 2021)

To sum up and reinforce everything that has been previously presented we checked to see the correlation's intensity between human resources and research systems, two of the main drivers of innovation taken from the European Innovation Scoreboard. Human resources includes three indicators, two of them being briefly analyzed above: new doctorate graduates in STEM, population aged between 25-34 with completed tertiary education and population aged 25-64 involved in lifelong learning activities; while research systems is made up of three indicators that measure the international competitiveness of science by focusing on: most cited publications, international scientific co-publications, foreign doctorate students.

Figure 6. Correlation and scatterplot for human resources and research systems



Source: authors' representation

According to Pearson correlation, a value of 0.840 between human resources and research systems suggests a strong positive relation, at a Sig=0.01. To have a better visualization over the results, the scatterplot illustrates the same results, showing there is a positive relationship between the two variables and that with each increase in human resources the system research values will tend to increase. Thus, a growth in human capital output can generate more international citations, as the quality of the papers will improve, and the attractiveness levels will follow an upward trend as foreigners' interest for the domestic market will surge.

Conclusions

This paper emphasized the role of research, innovation and better infrastructure for a nation's growth and for the improvement of its welfare levels as well as its competitiveness one. The indicators taken into account and the small analysis that has been conducted proved once again that education lies at the foundation of a nation's development, while human capital holds the key that can unlock a society's potential to achieve greatness. The need for an improvement of the current infrastructure in the Romanian tertiary education system is imperative, as academics and researchers need more incentives, support (financial, technical) and acknowledgments for their efforts, as working hours are often supplemented and extended during their alleged free time, giving the massive amount of work that is due, the overload in bureaucratic matters and the crowded daily teaching schedules and multiple administrative meetings. Romania's educational system is no stranger from the deprivation of government support, and while other East-European countries make efforts, despite their geopolitical and corruption issues, the former does not seem like it could be bothered, a stand that got us at the bottom of the EU for several years consecutively. Romania will not be able to ever prevail its condition characterized by high corruption levels, a political instability on the rise, poor governance, illiteracy and underdevelopment if it will not choose to invest in its citizens, following the example of other countries in the bloc that dealt with their condition.

All in one, to be resilient, educational institutions must consider the prospects of the labor markets and develop their curricula accordingly.

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