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EDUCATION AND ECONOMIC GROWTH: A KEY RELATIONSHIP FOR UKRAINE IN THE POST-CONFLICT PERIOD

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Abstract

Education is an essential factor for sustainable economic growth and development. There is widespread agreement that regions and countries that are better endowed in terms of human capital tend to grow more and be more resilient.
This paper aims to analyse the pivotal role that education will play in the growth and development of Ukraine in the post-conflict period. The accumulated learning losses caused by the pandemic have been greatly exacerbated by the current conflict, with persistent effects on learning. Following Ukraine's application for membership in the European Union, a reflection is required on the level of education in the country and the need to converge with European averages once the conflict is over.
The methodology used is the analysis of the main education indicators used by the World Bank, OECD, and the European Union, as well as the latest PISA Report, to assess the relationship between quality in education and economic growth. The comparison of statistical data with the European Union shows the shortcomings of an education system that will have to be strengthened. The statistical data underline the idea that enhancing the quality of education will be critical for Ukraine's near future.

Keywords: *Convergence, development, education, growth, human capital.*

1. Introduction

Education is a key factor for sustainable economic growth and development. There is a widely accepted consensus that regions and countries that are better endowed in terms of human capital tend to grow more and be more resilient. This relationship, well documented in the literature, shows that quality in education leads to individual and societal benefits.

This paper aims to analyse the crucial role that education will play in Ukraine's economic growth and development in the post-conflict period. The cumulative learning losses initially caused by the pandemic have been greatly exacerbated by the current conflict, with lasting effects on knowledge acquisition. These disruptions will cause persistent negative effects on learning. However, we need to reflect on the role to be played in the relationship between education and the economic growth needed in the post-conflict period. Following Ukraine's application for European Union (EU) membership, a reflection is required on the level of education in the country and the need to converge with European averages once the conflict is over.

In 2016 an ambitious reform of the Ukrainian education system called New Ukrainian School (NUS) was presented, starting in 2018. This reform tends to put Ukraine on the path to a more European-orientated education, with several key skills for students, of emphasis on foreign language communication, information technology proficiency, entrepreneurship, and civic education.

2. Theoretical framework: the relationship between education and economic growth

The relationship between education and economic growth is well documented in the literature. Early works show how important human capital is for individual productivity and returns. Solow's (1956) basic growth model was later extended to incorporate human capital, reinforcing the idea of the role of education as a factor of production (Mankiw et al. 1992). The human capital endowment of a country understood as the knowledge and skills embedded in individuals, is an increasingly relevant determinant of its long-term growth and development (Romer, 1990).

Human capital is a broader concept than educational attainment as it includes underlying capabilities, personal characteristics, and learning experiences, which may be pre-school or post-school and which build knowledge and enable people to be productive. The concept used in this paper relies on the education component of human capital and, as such, the terms *education* and *human capital* are used interchangeably here. More than the level of education achieved by the population, it is the quality of that education that seems to have a significant impact on the economic growth of a country. Hanushek & Woessman (2015) summarise a series of studies that emphasise the positive effect of the quality of education on growth and reinforce the idea that cognitive skills are the significant explanatory factor behind differences in long-term growth across countries.

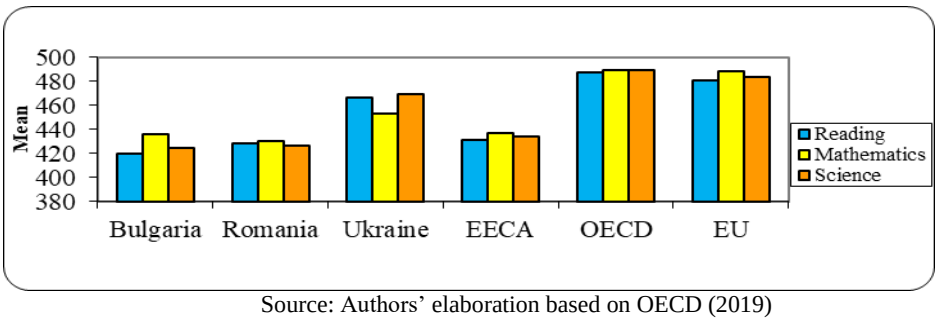
Many of the existing empirical studies focus mainly on comparative measures of education, such as years of attendance in the education system or enrolment rates, presenting ambiguous and even sometimes contradictory results. Many of these problems relate to the measurement of the specification of human capital and the issue of the quality of education (Valero, 2021). Several studies indicate that literacy measures, as a direct indicator of human capital behave better in regressions when compared to traditional years of schooling indicators. This measure is a way to overcome the problem of imperfect comparison of education measures across different education systems.

3. Methodology and discussion of results

The methodology used consists in analysing some indicators on education, used by the World Bank, OECD, and EU, as well as the latest PISA Report, to assess the close relationship between quality in education and economic growth. The PISA program assesses the literacy of 15-year-olds attending school, in all modalities and training, through a cognitive test that is applied every three years. Three domains are assessed - maths, reading, and science. The latest PISA report currently available is the 2018 report. PISA 2021 has been delayed to 2022, due to post-Covid constraints, and the report is not yet available.

The comparison of statistical data between the EU and Ukraine shows the shortcomings of an education system that will have to be strengthened and whose reform that started in 2018, will have to be completed. We also compare the country with the group of Eastern European and Central Asian countries (EEAC) and, in particular, with Romania and Bulgaria. These two countries share historical and cultural links with Ukraine. The ten countries belonging to the EEAC and participating in PISA 2018 are Azerbaijan (Baku), Belarus, Bulgaria, Croatia, Georgia, Kazakhstan, Moldova, Romania, Turkey, and Ukraine. The comparative analysis of the average values of performance in PISA 2018 in the parameters *Reading*, *Mathematics*, and *Science* (Figure 1) allows us to see that the OECD shows better results than the EU, although not very far from each other, and that the EEAC countries have the lowest values, with differences of about 50 points in each parameter. OECD scores are very uniform, with a small difference separating *Reading* from *Mathematics* and *Science*. In the EU, the pattern is different, with performance in *Mathematics* standing out a bit more from the other two parameters. Finally, the averages of the EECA countries are considerably lower than those of the two blocks and show a similar pattern to the EU, with performance in *Mathematics* standing out.

Figure 1. Average performance in Reading, Mathematics, and Science.



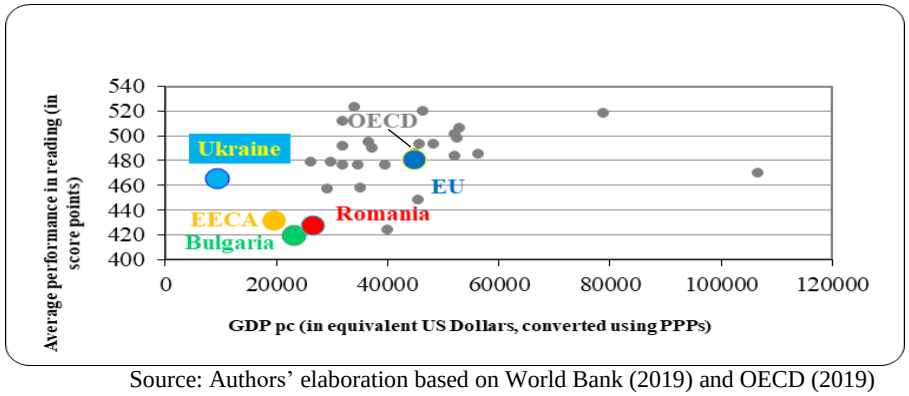
Source: Authors' elaboration based on OECD (2019)

Among the three EECA countries selected for analysis, Ukraine stands out from the start with the highest scores, both about the EECA averages and those of Bulgaria and Romania. Ukraine's figures are closer to the EU and OECD averages than to the overall averages of the EECA countries. However, its pattern is at odds with all the others, with *Mathematics* clearly below the other parameters. On the contrary, Romania and Bulgaria are lower than EECA, although Bulgaria is close to the average in mathematics performance. Between them, the two countries have similar values in *Science* but it should

be underlined that Romania excels in *Reading* and deviates slightly from the EECA standard as *Science* is the parameter with the lowest score.

A correlation between GDP per capita and average reading performance was developed, including Ukraine, EU-27 countries, and OECD and EECA averages.

Figure 2. GDP per capita and average reading performance.



Source: Authors' elaboration based on World Bank (2019) and OECD (2019)

The analysis shows that there is a moderate positive correlation between GDP and average reading performance, meaning that the richer a country is, the better its students perform in reading. However, Ukraine scores much higher on average reading performance compared to countries whose GDP is higher. The country scores better than Romania and Bulgaria, both also above the ECCA average, and is even better than countries with much higher GDP such as Greece, Slovakia, Cyprus, and Malta, and ranking very close to Luxembourg.

4. Conclusion

In terms of various indicators, Ukraine shows values close to and even higher than those achieved by some EU member countries. The big challenge shortly, will be to recover all the lost learnings and to continue the ambitious programme of reconversion of the education system started in 2018. The figures show that Ukraine has great potential for educational convergence with the EU. The education reform, once consolidated and fully implemented, will be a central element for the country's economic recovery, as it will equip young Ukrainians with essential skills for active participation in the country's recovery.

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