

AN OVERVIEW OF THE RECENT EVOLUTION OF THE SOCIOECONOMIC DIMENSION OF INEQUALITY. THE CASE OF CEE COUNTRIES

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Abstract

This research explores the evolution of several socioeconomic indicators belonging to the aggregate dimension of inequality (income, health, life expectancy, education, and sustainable development) in 5 CEE countries spanning 2010-2019. A special focus is dedicated to Romania's national and regional framework due to mixed evidence concerning inequality's impact on economic growth, poverty and human development. Our main results show a high value of this group's recorded human development index (HDI), indicating an elevated level of the population's well-being. Nevertheless, further analyses reflect severe disparities among countries and regions in terms of productivity, earnings, and social inclusion, corroborated by losses in education and welfare due to increased inequality.

Keywords

inequality, economic growth, human development, CEE countries, Romania

Introduction

According to Kuznets (1955), inequality is a consequence of economic growth, and certain studies of the last decades (Barro, 2000; Forbes, 2000; Halter et al., 2014) advocate a positive association between concepts, while others (Cingano, 2014; Chang et al., 2018) lean towards the existence of a negative relationship or highlight a mixed outcome (Chambers, 2010; Berg et al., 2018). Madsen et al. (2018) also support a negative growth-inequality link by employing a Two-Stage Least Squares (2SLS) approach for a sample of 21 OECD member countries between 1870 and 2011 and observe that at low levels of economic and financial development, income inequality hinders economic growth.

Based on these contradictory findings, researchers have focused on studying the structural dimensions of inequality that can lead to a slowdown in development (Easterly, 2007; Pickett and Wilkinson, 2015). Recent studies (Castells-Quintana et al., 2018) suggest that in the short term, the impact of inequality may vary under different socioeconomic dimensions (i.e. captured by the Human Development Index), and although there may be a positive impact of inequality on economic growth in developing countries (Forbes, 2000; Halter et al., 2014), it would negatively impact the education component. Therefore, the results obtained in this regard argue for a strong negative long-term impact of income inequality on human capital accumulation, which can be much more pronounced in countries with low levels of development.

By studying the recent economic performance of certain ex-communist states from Europe, namely Romania, Bulgaria, Poland, Hungary, and Croatia, we notice that these countries experienced an upward trend during 2010-2019, all reaching the maximum threshold in 2019¹. From this point of view, the countries that recorded significant economic growth rates in the last decade were Hungary and Poland (with very similar trajectories). In contrast, Bulgaria recorded the lowest performance, which belongs to the middle-income category. We also observe that since 2017, Romania has slightly surpassed Croatia in terms of GDP growth, while the situation was the opposite in the baseline period.

In Romania, factors such as poor transport infrastructure, weak accessibility of the population in certain regions to qualitative health and educational services, and an abundant but low-skilled workforce amplify socioeconomic disparities and impede economic productivity. As Istrate and Horea-Șerban (2018) claim in their study concerning the evolution of Romania's development regions between 2010 and 2015, the poorest areas are located in the East and South of the country, where the population is employed mainly in the agricultural sector conditioned by plain areas and the high incidence of cereal crops that generate low incomes for individuals. On the other hand, by analyzing several poverty and inequality indicators such as the poverty line defined as 60% of the median disposable income, the at-risk-of-poverty threshold and the Gini coefficient, the authors find a two-way relationship between poverty and income inequality, both in the short- and long-term.

Likewise, since our work focuses on the importance of socioeconomic drivers' influence on the growth-inequality nexus in emerging countries, the effects of inequality should also be studied concerning the social dimensions of sustainable development. Our hypothesis is supported by the contributions of Sen (1981, 1999, 2000), who introduced the relevance of certain dimensions, other than purely economic or pecuniary ones, that affect the income distribution among households, concentrating on human development. To support her premises, the author has developed an indicator that measures an economy's well-being, prosperity, and degree of development, known as the Human Development Index (HDI). This composite and multidimensional index considers and analyses key factors such as a population's health, educational attainment and income level and ranges between 0 (low human development) and 1 (high human development). This concept complements the idea approached by other authors, such as Ravallion (2011), according to which a sustainable growth process cannot be achieved without considering the aggregate dimension of human development, which is not limited only to the implications of economic factors.

Literature review

Several contemporaneous studies have focused on the relevance of a specific development level when tackling the extended dimension of inequality (Alvaredo et al., 2018; Brueckner and Lederman, 2018). For example, Brueckner and Lederman (2018) have considered a panel data model that includes the Gini coefficient as a measure of income inequality and the initial level of states reflected by the GDP per capita. The results of this analysis indicate that differences in initial income levels significantly impact the relationship between concepts, claiming that in low-developed economies, transitive growth is stimulated by an increase in income inequality. In contrast, for high-income countries, inequality has a predominantly negative impact. Therefore, we notice that the transmission channels of income inequality considerably depend on the degree of development of a country, supporting the hypothesis that inequality is beneficial for growth in poor countries and harmful for high-

¹ https://ec.europa.eu/eurostat/databrowser/view/sdg_10_10/default/line?lang=en

income ones.

On the other hand, some authors suggest various reasons why countries want to reduce income inequality, even if this decrease has no significant influence on economic growth (Ravallion, 2001; Grundler and Scheuermeyer, 2018). Economic growth has been perceived as a channel through which social disparities can be mitigated by Ravallion (2011), who states that the remarkable growth in China, India and Brazil is due to their progress in combating poverty and social exclusion. However, several developing countries have encouraged economic growth but have not seen a significant reduction in poverty or an improvement in the population's living conditions. One reason was that rapid growth may deepen income inequality in these countries, given that benefits are reduced for low-income households (Leow and Tan, 2019). Hence, achieving high productivity rates is insufficient to ensure individuals' well-being and an equal distribution of opportunities.

Data

For the collection of data related to our sample, we will use as primary sources the databases of the World Bank (<http://data.worldbank.org>, <https://pip.worldbank.org/poverty-calculator>), the United Nations Development Program (<http://hdr.undp.org/en/data>), the United Nations University (<https://www.wider.unu.edu/project/wiid-world-income-inequality-database>), the European Commission (<https://ec.europa.eu/eurostat/data/database>) and the National Institute of Statistics of Romania (<http://statistici.insse.ro:8077/tempo-online>).

First, given the World Bank's method of country classification by national GDP, we can group the selected countries into two categories: medium to high-income (Bulgaria) and high-income (Romania, Poland, Croatia and Hungary). Nevertheless, it should be noted that this classification is updated every year according to the recorded income. In 2010-2019, some states, except Croatia, Hungary and Romania, remained unchanged. Hungary and Croatia were included in the category of middle-income countries in 2013 and 2016, respectively, while at the opposite pole, Romania was included in the category of high-income countries starting with 2019.

Second, the degree of income inequality will be illustrated mainly by the Gini coefficient, which determines the extent to which income distribution among individuals deviates from perfect equality, with 0 representing perfect equality and one absolute inequality. Additionally, we will use other relevant indicators to capture income inequality, such as the S80/20 quintile ratio, which illustrates the ratio between the income of the 20% of the population with the highest income (first quintile) and those of the poorest 20% of the population (last quintile). To reflect the overall socioeconomic dimension of the countries considered, we will highlight specific indicators illustrating the degrees of poverty and human development using the poverty rate, the global HDI, and the HDI extensions for life expectancy, health, education, and social inequality.

Results

Since the GDP per capita as a proxy for economic growth does not reflect the size of the income distribution within a particular country and, at the same time, does not provide additional information on the influence of other non-monetary factors that play an important role in determining the welfare of a population, we start our analysis by presenting the evolutive situation of the income inequality level in the five analyzed countries (**Figures 1 and 2**).

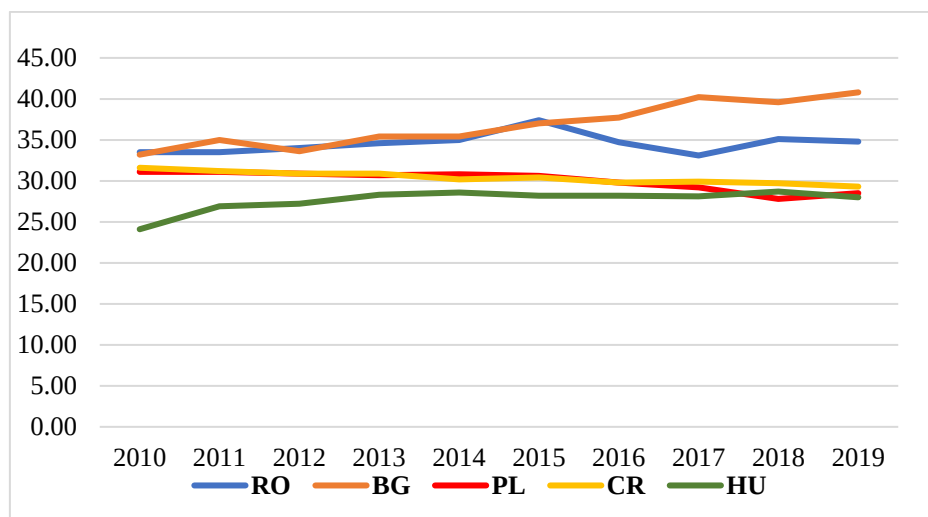


Figure 1. Evolution of the Gini coefficient between 2010-2019

Source: <https://ec.europa.eu/eurostat/databrowser/view/tessi190/default/table?lang=en>

At first glance, we observe that the degree of inequality in income distribution is very high, with values ranging between 24-40.80%. We also note that the countries with the highest economic growth rates (Poland and Hungary) recorded lower inequality than the others. In contrast, Bulgaria and Romania, which recorded lower but positive growth, occupied leading positions in terms of unequal income distribution.

Moreover, **Figure 2** confirms that in Bulgaria and Romania, the level of inequality was significant throughout the considered period, given that in 2019, the ratio between the first and last quintile was 8.10 in the case of Bulgaria (an increase of 2.24 percentage points compared to the baseline period) and 7.08 in Romania (0.97 percentage points increase), respectively. This indicates that the income of the richest 20% of Bulgarians was about eight times higher than that of the poorest 20% and about seven times higher for Romanians. For the other countries, the quintile rate was similar and amounted to about half of the value of the ratio recorded by Bulgaria in the final year.

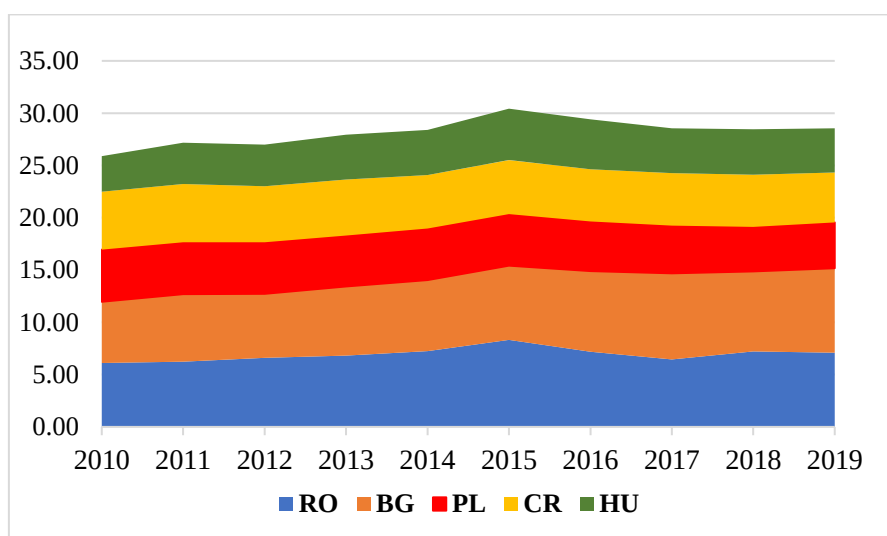


Figure 2. Evolution of the S80/20 ratio between 2010-2019

Source: <https://ec.europa.eu/eurostat/databrowser/view/tessi180/default/table?lang=en>

Next, suppose we deepen our analysis by referring to these economies' degree of human development (**Figure 3**). In that case, we notice that the HDI values are higher than 0.8 in the CEE group. According to the classification of the United Nations Development Program (UNDP), these results denote that the level of human development reflected through HDI is elevated, with the highest values recorded by Poland and Hungary. In addition, taking into account the Human Development Index adjusted for inequality (HDI-I), which illustrates the level of human development when inequality is taken into account, i.e. captures losses due to inequality in health, education and income, we see that this indicator has significantly deviated from the standard value in the case of Bulgaria and Romania, which accentuates the detrimental impact of inequality on human development in these states.

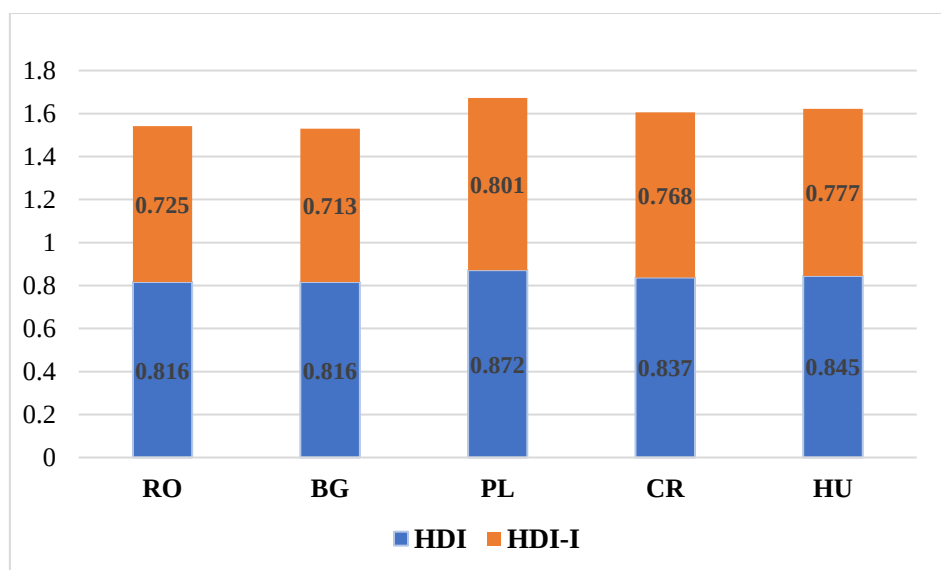


Figure 3. HDI and HDI-I indicators in 2019

Source: Author's calculations using <http://hdr.undp.org/en/data>

Thus, following this brief analysis, the cumulative findings show that all states registered positive economic performances, mentioning that some of them, namely Poland, Hungary and Croatia, registered lower income inequality than others. In Romania, the inequality coefficient was higher than that of Croatia, but the GDP growth rate in the last period has been higher in Romania's case. Also, although the degree of human development in these countries is considerably high, we may argue that socioeconomic discrepancies amplify the negative impact of inequality on the growth process, noting a considerable influence of the inequality dimension on the human condition.

Therefore, the contradictory results obtained in Romania's case motivate us to conduct an in-depth study of its socioeconomic framework, especially due to the possible existence of a positive inequality-growth connection fostered by social factors, as argued by Ravallion (2011), and Todaro and Smith (2015), among others. In this respect, using the database of the National Institute of Statistics of Romania (INS), we have collected data on the socioeconomic evolution of Romania at both national and regional levels during 2010-2019.

Our research starts from a general setting to a particular one by analyzing the economic performance, income distribution, and poverty and human development levels at the national, regional, and county levels over the reference period. First, **Figure 4** illustrates the contribution of Romania's regions to the formation of national income in 2010, considered the starting point, and 2019, considered the final point. In terms of economic performance, we note that the most

developed region of the country, Bucharest-Ilfov, maintains its leading position over the years, contributing in 2019 with approximately 26.60% to the formation of the national GDP, followed at a considerable distance by the South-Muntenia, North-West and Centre regions. The worst-performing regions are West and South-West Oltenia. In this case, our results emphasize that inter-regional disparities between developed and less developed areas were maintained in both periods. Still, in recent years, these differences have not increased between the less developed ones (West, South-East, South-West Oltenia, and North-East).

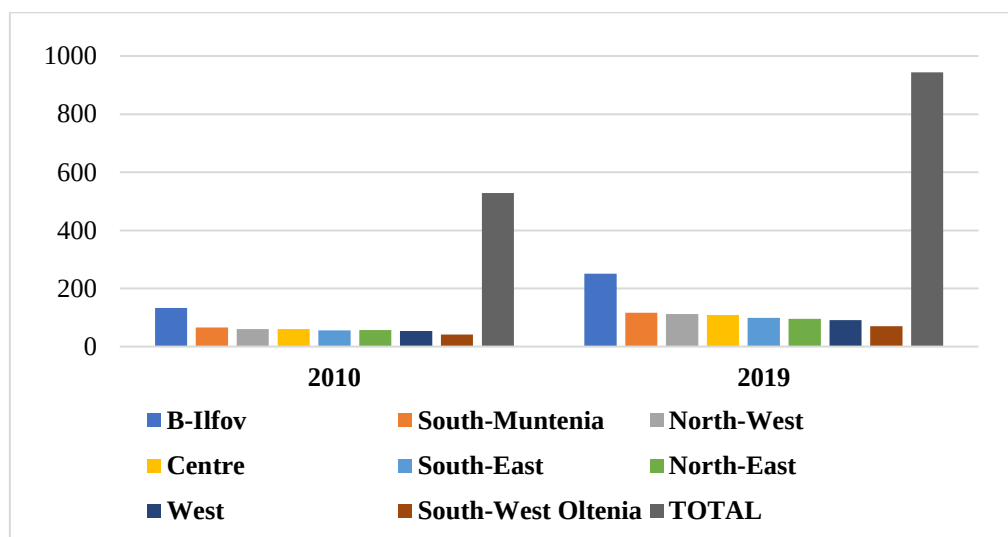


Figure 4. Regional GDP in 2010 and 2018 (billions of Lei)

Source: Author's calculations using <http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table>

Furthermore, let us look at the economic evolution at the county level. Our spatial cartograms reflect a higher discrepancy within regions compared to the inter-regional one due to differences between counties, some being more economically developed while others are significantly poorer (**Figure 5**). Besides Bucharest County, which is known to be an outlier in terms of GDP, we notice that in 2019, Timiș and Cluj concentrated over 50% of the result of the West and North-West regions, respectively, while counties such as Dolj, Argeș, Brașov, Prahova, Constanța and Iași crossed the regional threshold of 30% of the economic activity of their regions. By contrast, about a quarter of all counties have a very low GDP, most of them being located in the South-Muntenia region (e.g. the counties Călărași, Giurgiu, Ialomița) and the eastern areas of the country (e.g. Vaslui, Vrancea). Therefore, the premise that regional economic productivity is strongly influenced by between-counties disparities is confirmed, expecting these fluctuations to result from the impact of specific social and economic factors.

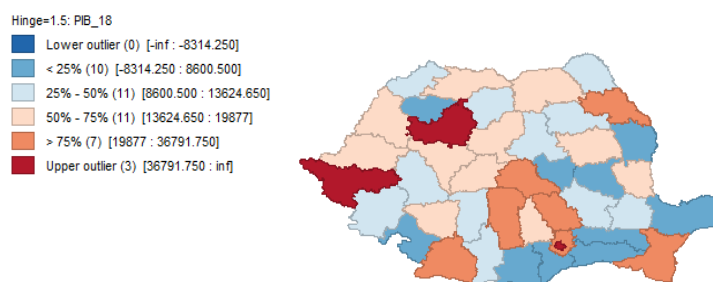


Figure 5. Counties' GDP in 2019
 Source: Author's calculations in GeoDa 1.20.0.36

Second, we notice in **Figure 6** that the population's incomes have significantly decreased compared to the baseline period. The ranking of regions has slightly changed: in 2010, the highest income individuals were from South-Muntenia, West and North-West, while currently, the wealthiest people are located in the Centre, North-West and West regions (not taking into account the Bucharest-Ilfov region, which permanently marks an extreme value). This finding is confirmed by the intense economic activity in Braşov, Sibiu, and Alba counties and by the dominant economic potential of the growth poles Timiş and Cluj in the West and North-West regions.

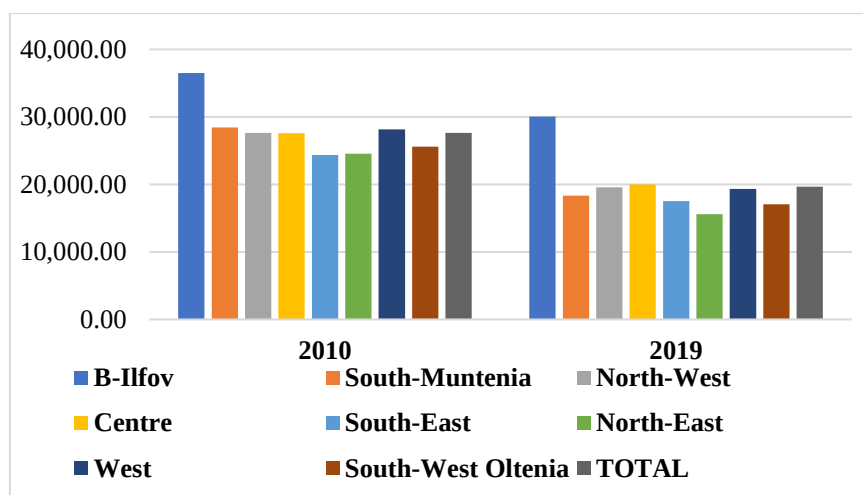


Figure 6. Average annual income per inhabitant by region
 Source: Author's calculations using <http://statistici.INSSE.ro:8077/tempo-online/#/pages/tables/insse-table>

Moreover, given that households' incomes in distinct regions do not vary considerably, we expect the potential degree of socioeconomic inequality to be caused by significant differences in counties within the same region. This theory will be verified by employing spatial maps that provide a clear visualization of the units (i.e. counties) considered. According to **Figure 7**, the outcomes highlight that the income distribution at the county level is not homogeneous, varying notably between the counties of a region, among both economically developed and less developed ones. This heterogeneity is also reflected by the large number of counties constituting the middle-income groups (25-75%). For example, we observe that

disparities are significant in the North-West, West and Centre regions, with incomes being very heterogeneously distributed among the population. More precisely, individuals' incomes are significantly elevated in Cluj, Sibiu, Mures, Braşov and Arad and extremely low in Bihor, Bistriţa-Năsăud, Timiş, Harghita and Covasna.

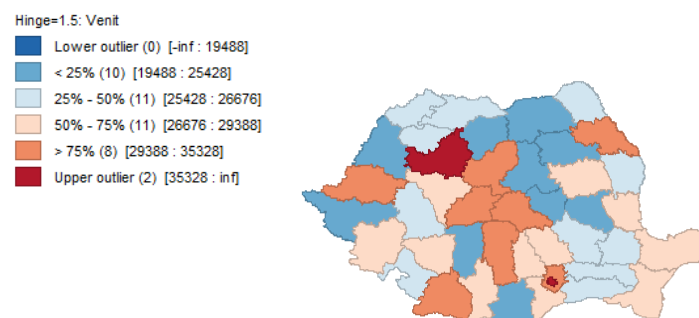


Figure 7. Population incomes at the county level in 2019

Source: Author's calculations in GeoDa 1.20.0.36

Third, analyzing the degree of poverty registered at the regional level, we note that in 2019, the poverty rate significantly increased compared to 2010 in the regions South-West Oltenia, North-East and South-Muntenia and decreased in the West, Centre and North-West, respectively (**Figure 8**). In addition, the poverty rate was more than seven times higher in the North-East, South-West Oltenia, and South-East regions and over six times higher in South-Muntenia than in the Bucharest-Ilfov region. The poverty growth rate between 2010 and 2019 was negative only for the West and Centre regions.

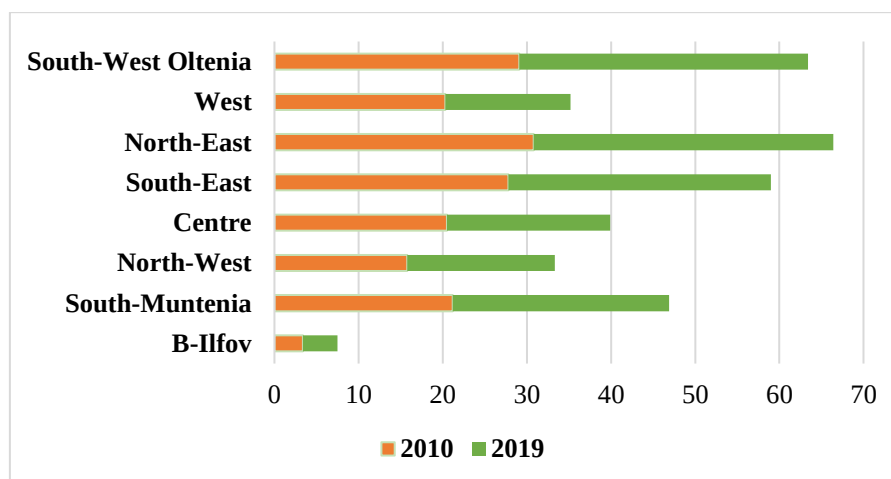


Figure 8. Regional poverty rate

Source: Author's calculations using <http://statistici.INSSE.ro:8077/tempo-online/#/pages/tables/insse-table>

Last but not least, looking at the evolution of the human development indicators, Figure 9 denotes an important reduction in health and education inequality in 2019. Nevertheless, this improvement is distorted by a considerable increment in the degree of income inequality, which is also confirmed by the recorded human inequality index. The loss due to inequality exceeds

this indicator in the final period, indicating that disparities differ in magnitude. Therefore, although the global HDI shows a higher degree of human development in Romania compared to the baseline period, the loss due to inequality has notably widened due to increased income inequality.

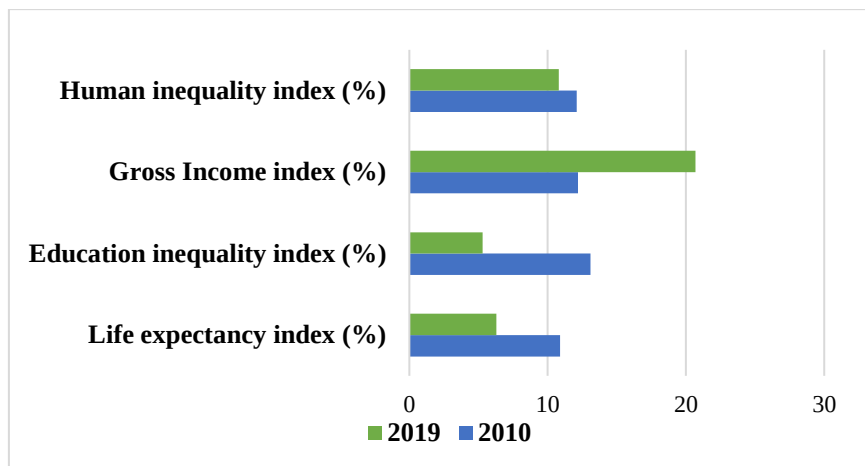


Figure 9. Human development dimensions

Source: Author's calculations using <http://hdr.undp.org/en/data>

Conclusion

On the one hand, the obtained results argue that in Romania and other CEE countries, social discrepancies and poverty tend to be stimulated as income inequality increases, given that inequality can hinder the socioeconomic disparities-reducing effect promoted by economic growth. In addition, we support quantifying the impact of the growth-inequality nexus to implement inclusive policies effectively. This outcome is also confirmed by Ravallion and Chen (2007), Fosu (2010), and Breuning and Majeed (2020), who demonstrated that while economic growth can reduce poverty, a higher level of income inequality undermines the efforts to combat poverty and social exclusion, concluding that growth cannot be associated with a reduction in poverty in the presence of unequal income distribution.

On the other hand, if we refer to the regional dimension of income distribution in the specific case of Romania, our findings depict a widening of the income gap between the rich and the poor supported by a Gini coefficient of 34.80% and the S80/20 quintile ratio of approximately 7.1 in the last period. Furthermore, we find that the degree of inequality in income distribution has significantly expanded over time at the regional level, the individuals with the highest incomes being located in the Bucharest-Ilfov, Centre and North-West regions, while poorer areas are represented by the regions South-West Oltenia and North-East.

Therefore, taking into account the differences in regional income distribution, economic activity, and poverty degree and analyzing their overall interdependence, we tend to believe that the existence of a positive relationship between economic growth and income inequality in Romania can be explained by the appearance of fluctuations of these variables at inter- and intra-regional level. These effects can further be amplified or diminished by the influence of socioeconomic drivers such as poverty and the human development dimension.

Regarding the degree of human development registered by Romania in 2019, our outcomes show a very high value of the indicator, placing the country in 53rd out of 189 in the

UNDP's annual ranking². Compared to the baseline year, the HDI slightly increased in 2019, but enough to rate the country in the first half of the highest developed countries globally. However, the gap between the human development level and the influence of inequality has severely widened since 2010, demonstrating a solid impact of the inequality scale on the human dimension. In conclusion, this argues for considering the aggregated perspective of several social and economic triggers, not only the common macroeconomic variables, when analysing a country's stage of economic development.

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²<https://hdr.undp.org/data-center/country-insights#/ranks>

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