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**Article — Published Version**

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Theoretical and Applied Economics

*Suggested Citation:* Tudorache, Maria-Daniela (2021) : Development in Romania during the post-crisis period: A human, economic and social perspective, Theoretical and Applied Economics, ISSN 1844-0029, General Association of Economists from Romania, Bucharest, Vol. 28, Iss. 3(628), pp. 15-32,  
<http://www.ectap.ro/development-in-romania-during-the-post-crisis-period-a-human-economic-and-social-perspective-maria-daniela-tudorache/a1552/>

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## Development in Romania during the post-crisis period: A human, economic and social perspective

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**Abstract.** *This paper aims to provide an analysis of the interaction between human, economic and social development in Romania, in the period 2010-2019. To facilitate the examination of the human development, I have used the human development index and its components, while the economic development has been examined using gross domestic product per capita and its determinants. On the other hand, in the case of social development, I have used the poverty rate and other relevant indicators. The conclusion of the paper is that Romania has been on an upward trend in terms of development in the post-crisis period, but further progress are needed to be able to mitigate the development gaps towards the European Union.*

**Keywords:** development, human, economic, growth, poverty.

**JEL Classification:** O11, O15, I32, R11.

## 1. Introduction

The term "development" is complex and ambiguous and can have many meanings, depending on the context in which it is used. In economics, development refers mainly to increasing the size or growth rate of an economy by producing more goods and services. Conventionally, if an economy generates more goods and services, the population can benefit from a better standard of living, as a consequence of economic growth.

Therefore, development is defined as a combination between economic, social progress and quality of human life. Therefore, this paper aims to combine three types of development: human development (expressed by human development index – HDI), economic development (expressed by GDP per capita), respectively social development (expressed by poverty rate). The motivation for choosing this theme consists in the fact that ensuring an equilibrium between all development forms is key for promoting sustainable development. In this context, there is a need to identify the way in which the forms of development interact, implicitly the possible compromises between them, but also to analyse the way in which the development evolved in Romania during the period 2010-2019.

The main objective of this paper is to examine the evolution of these three types of development in the post-crisis period (2009), in Romania. This goal will be achieved by meeting the following specific objectives:

- (i) Examining the evolution of human development, using the HDI and its components.
- (ii) Monitoring the evolution of economic development, expressed by GDP/capita and other relevant indicators.
- (iii) Examining the evolution of the social development (expressed by poverty rate) drivers.
- (iv) Analysing the chain of effects of HDI – GDP/capita – poverty rate.

## 2. Literature review

The concept of development has been analysed by several economists. However, the most exhaustive definition of development is considered to be that provided by Amartya Sen (2001), stating that development refers to human freedom and to the removal of obstacles to freedom, to allow individuals to choose their own destiny. Obstacles to freedom, in Sen's conception are considered to be poverty, corruption, lack of opportunities, poor education and health systems, and inefficient governance. On the other hand, Dinu (2017) states that development takes place when all industrial revolutions are implemented.

According to the United Nations (UN), human development has emerged from discussions about the difference between economic growth and development in the second half of the 20th century. Until the early 1960s, gross domestic product was considered an indicator of a nation's progress. A few years later, economists have begun to focus on finding other ways to measure a nation's well-being. In this context, economists began to focus on employment policies, income redistribution and meeting people's basic needs, which helped to pave the way for addressing human development challenges. Human

development focuses on improving people's lives, which is achieved through freedom. The foundations of human development are considered to be health, creativity, knowledge and access to the resources needed for a decent life. Besides these, other factors that contribute to the creation of optimal conditions for human development are environmental sustainability and gender equality. Dinu (2006) stated that a modern society must focus on the transformations of the human dimension, which in turn is driven by actions in education, the promotion of democracy and legality.

In terms of economic development, Sen (2001) stated that this concept is superior to economic growth, given that economic development reflects the social and economic progress of a country. Economic growth is a vital and necessary condition for development, but it does not guarantee development. At the same time, the California Association for Local Economic Development (CALED) argues that economic development is the creation of wealth at the community level, which ensures an increase in prosperity and the quality of life of individuals. On the other hand, Krueger and Myint (2016) point out that economic development is the process by which simple, low-income economies are transformed into modern industrial economies.

According to the World Bank (2021), social development refers to the inclusion of people who have been economically and socially excluded. German Corporation for International Cooperation (GIZ) states that social development takes place when nations are based on social policies, such as equal opportunities and solidarity, and that education, health and social protection systems provide citizens the opportunity to develop from their own resources and to live independently. Simultaneously, New Brunswick Government (GNB) states that social development refers to increasing the well-being of every individual in a society to reach their full potential.

Regarding the human development index, according to the UN, a high level of education (in particular, a high rate of graduates) have a positive impact on the HDI. At the same time, Soviz and Chavooshi (2019) stated that education has a greater positive impact on the human development index, compared to life expectancy and per capita income. The most important form of education, according to the authors, is considered to be public education, which has a more important role than higher education. On the other hand, Jespersen (2011) affirmed that education has significantly contributed to the improvement of HDI in the last half century, but nevertheless, the inequality of people who have access to education is a challenge in terms of the human development of a nation. Rinaldi (2017) demonstrated by using a multiple regression, that an increase of school years and of number of literacy among a population leads to an increase in the human development index. In addition, Dinu and Socol (2006) indicated that the accumulation of human capital, technical progress and the increase of labour supply lead to long-term economic growth.

The relationship between HDI and life expectancy has been analyzed by many authors. These include Mare et al. (2019) stating that life expectancy is higher in regions with a high level of human development index. Another relevant conclusion is that of Girum et al. (2018), which indicated that life expectancy is mainly determined by socio-economic factors, and is driven by the quality of services provided to citizens by authorities (health services and health care, environmental factors, education). On the other hand, Alkire and

Santos (2010) mentioned that it is not necessary for a state to have a high life expectancy indicator for reaching a high value of HDI.

There is a positive relationship between growth and the HDI, according to Grubaugh (2015). However, Abraham and Ahmed (2015) found a negative relationship between the economic growth index and human development index in Nigeria, this being insignificant in the short term. Another opinion is that of Ranis (2004), who argued that the increase in income that households and governments obtain as a result of economic growth, improves human development.

Further, Anghelache (2011) demonstrated by a linear regression the fact that in Romania, final consumption is one of the most important factors influencing GDP. Simultaneously, Diacon and Maha (2015) showed that final consumption leads to an increase in GDP by improving living standards. This is more visible in low and middle-income countries compared to high-income countries, given that developed countries are more focused on investment and research and innovation, especially in human capital, compared to the underdeveloped and developing countries. Although, in the authors' view, consumerism is considered a factor that slows down the development trend, at the same time, it represents a proxy for a high standard of living for low and middle-income countries. On the other hand, Chioma (2009) stated that high consumption does not necessarily lead to economic growth. The author believes that investments in stocks, high productivity and industrialization are more relevant factors for a nation's economic growth.

Yanikkaya (2003) studied the relationship between gross fixed capital formation and GDP growth in underdeveloped and developing countries, demonstrating that there is a positive relationship between these variables. At the same time, Gibescu (2010) confirmed a positive relationship between gross fixed capital formation and GDP in the Central and Eastern European countries, especially in Romania, Bulgaria, Check Republic and Poland. Also, according to Ali (2017), economic growth is promoted through investment, information transfer and technology. On the other hand, according to Marinaş et al. (2012) investments placed in 2006-2009 in Romania had a small multiplier effect, despite the fact that their share in GDP was high.

The internet and technology also play an important role in a country's economic development. Therefore, Amiri and Reif (2013) have shown that widespread access to the Internet and technology among the population leads to significant increases in GDP per capita. Therefore, Chong et al. (2012) analyzed, in the short and long term, the relationship between internet users and gross national income per capita in emerging economies. Their conclusion was that there is a significant relationship between these two variables, in the short and long term, given that the use of the Internet in many sectors of the economy (public and private) leads to an increase in GDP. In addition, Tiwari (2008) found that the use of the Internet promotes economic development, respectively reduces poverty in underdeveloped states. This hypothesis was also supported by Dimelis and Papiroannu (2010), who mentioned that this finding is also valid for developing countries.

Ali (2017) affirmed that the increase in human capital and the emergence of new technologies lead to increased productivity and GDP growth, through the channel of

development and creation of goods and services. Therefore, investments in physical capital lead to increased labour productivity, implicitly to economic growth (Zulu and Banda, 2015). Furthermore, Korkmaz and Korkmaz (2017) demonstrated that technological innovation in OECD countries leads to improved labour productivity, which in turn leads to high levels of output. In terms of labour cost, Ahmad et al. (2003) stated that increased labour productivity and higher unit labour costs in OECD countries have led to higher GDP, especially in European countries, (e.g.: Italy and Germany). Furthermore, Emsina (2014) pointed out that labour productivity and economic growth are key factors in maintaining and improving global competitiveness. The conclusion of the paper is that productivity and labour costs did not change in the pre-crisis period, respectively after the crisis in the states of the European Union. Another opinion is that of Aceleanu (2011) and Şerban (2012b), who argued that lifelong learning is a practice of avoiding long-term unemployment and deteriorating human capital. On the other hand, Jula D. and Jula N. (2007) stated that poor productivity leads to higher prices, which in turn leads to a lower demand for services.

Regarding the determinants of poverty, Socol et al. (2010) confirmed an indirect relationship between social protection spending and the mentioned indicator. Fiszbein et al. (2014) pointed out that social protection spending is intended to help millions of Europeans escaping the burden of poverty. Moreover, Kiendebeogo et al. (2017) stated that in episodes of economic crisis the number of people receiving social assistance increases, which leads to a reduction of the population exposed to the risk of poverty. On the other hand, Deaton (2017) found that social benefits do not reduce poverty, and only create social workers. However, Marinaş (2010) indicated that promoting sustainable growth encourages social cohesion and employment.

Quintano et al. (2018) affirmed that the share of young people not following a form of education, training or employment (NEETs) is increasing in European countries, which raise additional concerns given the predisposition of young people to be exposed to unemployment, poverty and social exclusion risks, which have a negative impact on economic growth and the well-being of citizens. The authors recommended focusing on an education system with an important role in training young people to ensure the global competitiveness of the economy. During the economic crisis, NEETs increased, which is also linked to the increase in the unemployment rate, due to the low work experience of young people in the labour market and lower qualifications (Marelli and Signorelli, 2015). In addition, Jianu (2019) analyzed the effect of NEETs on poverty in the EU using panel data for 2010-2016 and identified a positive impact coefficient.

The economic crisis of 2009 has led to rising poverty Patache (2015) states that the group of people leaving school early is a high-risk group, given the fact that they find it harder to find a place in the labour market, of being included in vulnerable categories at risk of poverty. Therewith, Lavrijsen and Nicaise (2015) showed that school dropout can be prevented if the socio-economic context (poverty rate, unemployment) is favorable to the population. In addition, Antonescu and Chisăgiu (2016) demonstrated that early school leaving is a major cause of poverty and poor employment, which subsequently lead to reduced productivity and growth potential.

According to Šileika and Bekerytė (2012), there is a positive relationship between the unemployment rate and poverty rate, but developing countries generally do not face high unemployment. In this respect, Nasar (2014) considers that poverty is caused by high unemployment and underemployment. The positive relationship between these variables has been also confirmed by Muhammad and David (2019). Their study formulates some recommendations for the national authorities to create vocational qualification programs, increase spending on education, but also the minimum wage to combat poverty. To this extent, Jula and Jula (2015) argued the need to alleviate unemployment and support the workforce by appropriate policies.

Karagiannaki (2017) confirmed a strong positive and statistically significant relationship between income inequality (expressed by the Gini coefficient) and poverty. Furthermore, Burke et al. (2019) demonstrated that poverty is influenced by the Gini coefficient, GDP/capita variation, literacy rate and income level in a country. Besides that, Lakner et al. (2019) pointed out that reducing Gini by 1% per year in each country has a higher impact on reducing global poverty than increasing its annual economic growth by one percentage point. In the authors' view, this suggests that reducing inequality is the best way forward in eradicating extreme poverty.

Regarding the role of education, Șerban (2012a) indicated that it is essential for an economy, especially for economic growth. Furthermore, Auria (2020) stated that education has a significant impact on poverty, GDP and income inequality, and an essential condition for a country to ensure an optimal level of education for its citizens is by committing an optimal level of resources for this sector. Therewith, Hidalgo-Hidalgo and Kortajarene (2014) indicated that increasing public spending on education has the role of promoting equal opportunities and preventing poverty. In addition, Jackson et al. (2016) demonstrated that increasing education spending by 10% per year leads to 7% higher wages and a 3 percentage point reduction in the annual incidence of adult poverty. Moreover, Aceleanu (2012) stated that education reduces the risk of poverty, because people investing in education find stable jobs easier.

### 3. Methodology

In this article, I have analysed the following concepts: human development, economic development, social development, and their determinants. This analysis covers the period 2010-2019 and is oriented to the evolution of the development process in Romania. The reason why I chose this period is to capture the way in which the studied forms of development, evolved in the post-crisis period that started in Romania in 2009. In this case, to examine the evolution of human development, I analyzed the trends in the life expectancy index, the education index and the economic growth index. I have used statistical data with annual frequency, these being extracted from the UN database.

In terms of economic development, in the first stage, I analyzed the evolution of the percentage change of GDP/capita compared to the previous year, the final consumption

expenditure and the gross fixed capital formation. After that, I determined how the GDP/capita (using the indicator of the percentage change of GDP/capita, lag by 1 year) is influenced by technology (surprised by the indicator of the households with access to the internet at home). To verify these relationships, I used statistical data with annual frequency, extracted from the Eurostat database.

The following analyzed relationship captures the evolution of the economic growth of the gross domestic product, the real labour productivity and the nominal unit labour cost. Next, another relationship that highlights economic development is that between nominal and potential GDP. While studying these relationship, I used quarterly statistics, also extracted from Eurostat database.

Subsequently, I analyzed the indicators that capture social development: the poverty rate (before and after social transfers), the NEETs rate, social protection expenditures expressed as a percentage of GDP, education expenditures expressed as a percentage of GDP, the rate of people leaving the education and training, unemployment rate and Gini coefficient (annual data, Eurostat).

Finally, I have analyzed how human development (surprised by HDI), social development (expressed by poverty rate after social transfers), respectively economic development (defined by the percentage change of GDP/capita) evolves during the examined period.

#### 4. Results and interpretations

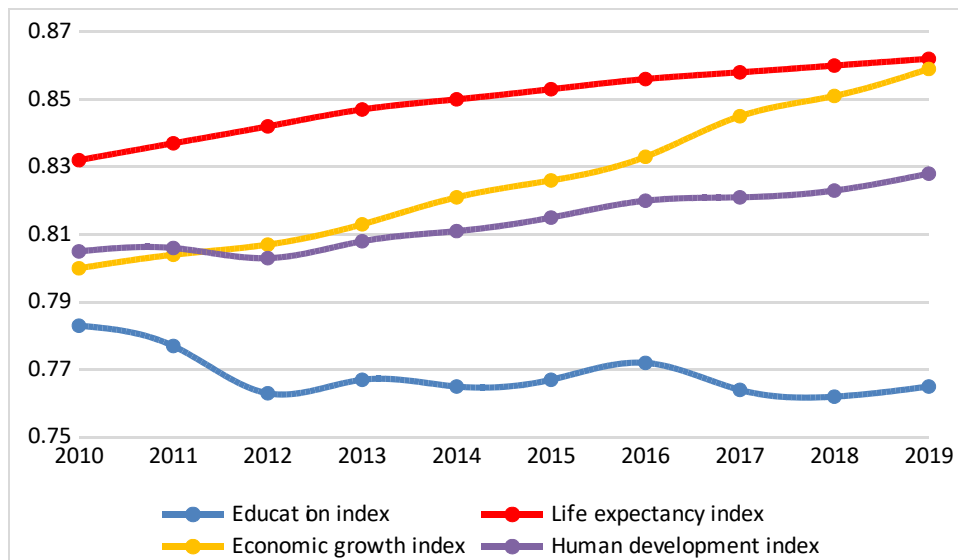
In this section, I analyzed the evolution of human development, economic development and social development in Romania over the period 2010-2019.

##### **Human development**

First, I analyzed the evolution of human development index (Figure 1) and its components, namely the education index, the economic growth index and the life expectancy index. Excepting the education index, the other indicators are on an upward trend in the analyzed period. Thus, due to significant progress in medicine field and the development of new medication, life expectancy has increased in Romania from 73.7 years old in 2010 to 75.6 years old in 2019. Even if life expectancy has increased, Romania is on the penultimate place in the European Union regarding this indicator, while the EU-27 average in 2019 was 80 years old (80.9 years old at EU-28). The main drivers of low life expectancy compared to other European countries are the lack of an efficient health system, high poverty rate among people older than 65, impediments encountered by patients in hospitals (lack of medicines, bureaucracy of medicines, lack of medical equipment, insufficient medical staff, inadequacy of funds granted to health units).

In terms of economic growth index, I have identified an upward trend in the analyzed period. This is mainly due to the growth policies implemented by the government. More details on these are provided in the economic development section.



**Figure 1.** *The evolution of the human development index and its components in the period 2010-2019*

**Source:** Own calculations using United Nation database.

The regresses registered by the education index indicate the challenges that Romanian education is facing. First, education expenditure calculated as a percentage of GDP was relatively low, on average 3.2%, even if the Education Law no. 1/2011 set the need to finance national education system (from the national budget) with at least 6% of the gross domestic product. During the analyzed period, this recommendation has not been addressed by the government, which leads to school dropout, the increase in the number of functional illiterates and the lack of skills of the population to occupy well-paid jobs.

Therefore, in contradiction with the tendency to reduce the education index, increasing life expectancy and economic growth in period 2010-2019 has facilitated the placement of human development index on an upward trend. In 2010, during the economic crisis, the value of this indicator was 0.805 and in 2019 it reached the value of 0.828 – an increase of 2.85%.

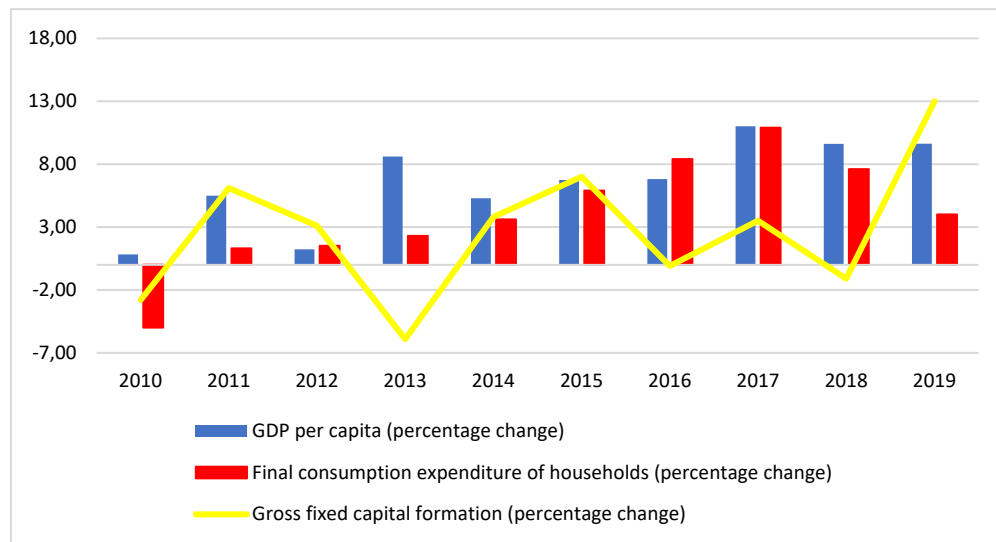
### **Economic development**

To analyse economic development, I examined the evolution of GDP/capita, final consumption of households and gross fixed capital formation (Figure 2). Household final consumption has increased since 2011. Unemployment has risen since the economic crisis, lower wages and job instability during the economic crisis leading to reduced household consumption. Since 2011, once the shock has been overcome, the economy succeed to recover and the population began to allocate more resources to ensure well-being.

With regard to the gross fixed capital formation, the evolution of this indicator has been very fluctuating. Less developed regions need a higher level of investment to close the gaps they have compared to developed regions. In recent years, the level of public investment was relatively low, the main reasons being the pressure exerted by pensions and salary

increases. In this case, greater involvement of local authorities is needed to attract European funds, which will later help the regional development process. At the same time, a higher level of private investment is needed, but these are affected by the public policy uncertainties.

**Figure 2.** The evolution of GDP/capita, final consumption of households and gross fixed capital formation in the period 2010-2019

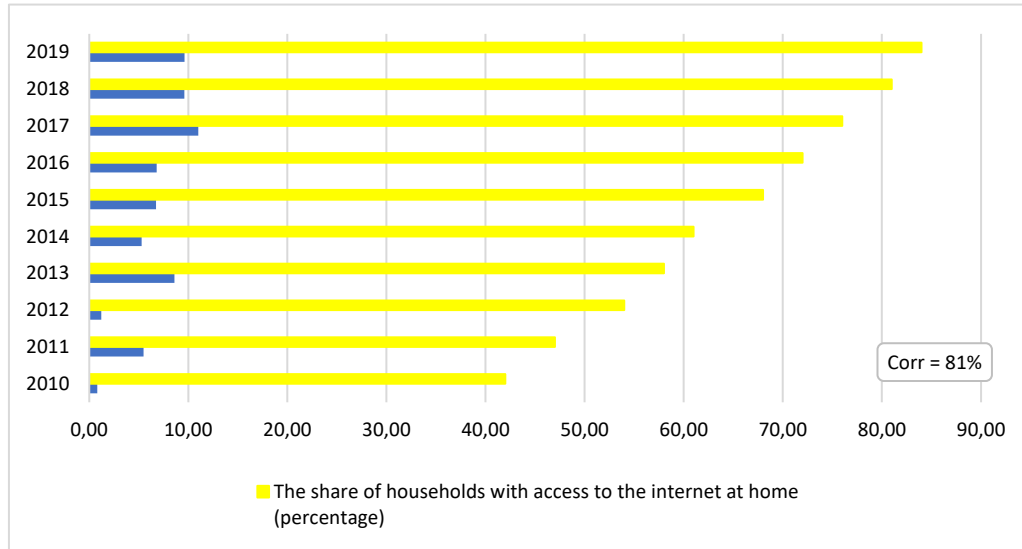


**Source:** Own calculations using Eurostat database.

GDP/capita has been on an upward trend in the analyzed period. The growth policies adopted supported the progressive evolution of this indicator. These include the income tax exemption granted to IT employees, increases of construction workers salaries (also exemptions from taxes and contributions applicable for construction workers), raising the minimum wage, increasing the salaries of public officers, stimulating investment, elimination and reduction of some consumers/producers taxes. In 2019, the most important contributions to economic growth came mainly from investments (+18.2%), construction sector (+17.3%), ICT sector (+8.1%), cultural and recreational activities (+7.5%), trade and transport (+5.1%), services (+4.8%).

Next, to observe how new technologies influence the development of a state, I analyzed how the households with access to the internet at home influences the GDP/capita, and I have identified a positive relationship between these (Figure 3). Therefore, internet access promotes inclusion and innovation, these being necessary for the promotion of economic growth, but also the human development in a country, making easier the access to information.

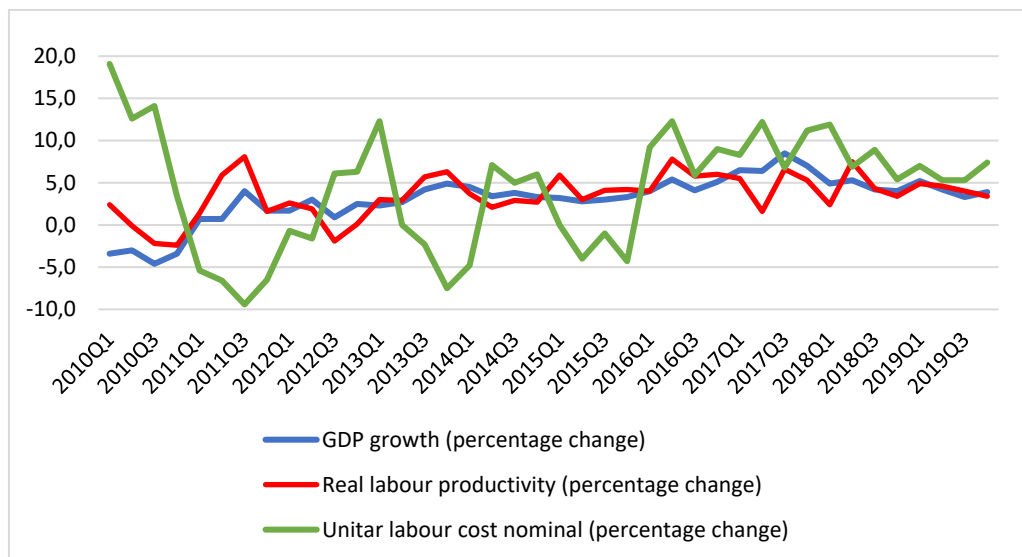
**Figure 3.** The evolution of GDP/capita and households with internet access at home in the period 2010-2019



**Source:** Own calculations using Eurostat database.

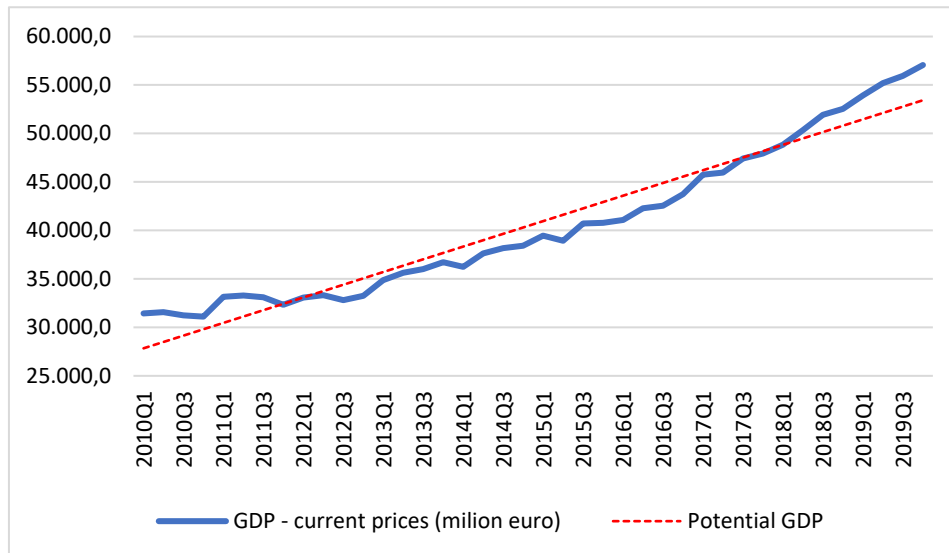
According to Figure 4, there is an inverse relationship between the percentage change of nominal unit labour cost and the percentage change of real labour productivity. In principle, the rate of economic growth follows a similar trajectory to that of real labour productivity, the correlation between these being quite high (69.61%). In the period 2017-2019, there was a reduction in the nominal unit labour cost, this being promoted, in particular, by the high rate of wage growth.

**Figure 4.** The evolution of the economic growth, of the nominal unit cost with the labour force and of the real labour productivity in the period 2010-2019



**Source:** Own calculations using Eurostat database.

**Figure 5.** The evolution between gross domestic product (million euro) and potential gross domestic product in the period 2010-2019



**Source:** Own calculations using Eurostat database.

Next, according to Figure 5, in the period 2017-2019, Romania has eliminated the recessionary output-gap, which was manifested after the economic shock of 2009. However, the graph does not capture the whole period of the recessionary gap, since I have used nominal GDP data. However, the evolution of real GDP and output-gap data extracted from AMECO highlight the fact that in Romania the recessionary output-gap manifested in the period 2010-2016, and starting with 2017, the output-gap has become expansionary. At the same time, the respective graph also highlights the persistence of pro-cyclical policies, which does not ensure a real equilibrium at the level of the economy.

### Social development

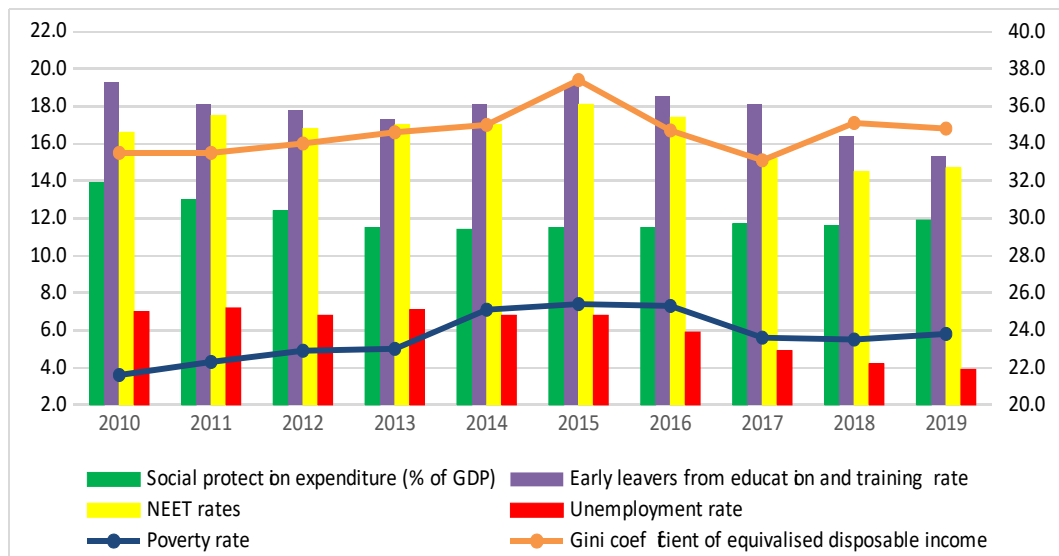
The poverty rate has been on a downward trajectory during the analyzed period, but its value still stood at high levels (23.8% in 2019), placing Romania on the second place in terms of the highest poverty rates in the European Union. The most affected people at risk of poverty are in rural areas, who have a low level of education and those who belong to the category of vulnerable groups (single-parent families, families with many children, the elderly). Despite efforts to increase salaries and pensions, income inequality (measured by the Gini coefficient) remained at a high level. Starting with 2018, the Gini coefficient increased after being on a downward trend in the period 2015-2017.

Therefore, as can be seen in Figure 6, the poverty rate, the unemployment rate, the NEETs rate and the early leavers from education and training rate are evolving in the same direction as the Gini coefficient, which shows that the precarious situation from a social point of view in Romania led to an increase in income inequality. In this case, national authorities must take social measures to ensure the well-being of its citizens, by ensuring well-paid

jobs (by increasing the minimum wage, in accordance with a mechanism that depends on the main economic indicators, such as inflation, growth and labour productivity), prevention of school dropout, especially in rural areas, respectively providing vocational training programs for young people and adults, in order to integrate into the labour market. Education, since ancient times, it was considered an important factor supporting the escape from poverty. This provides the population with well-paid jobs, decent wages, which will later lead to a reduction in the Gini coefficient.

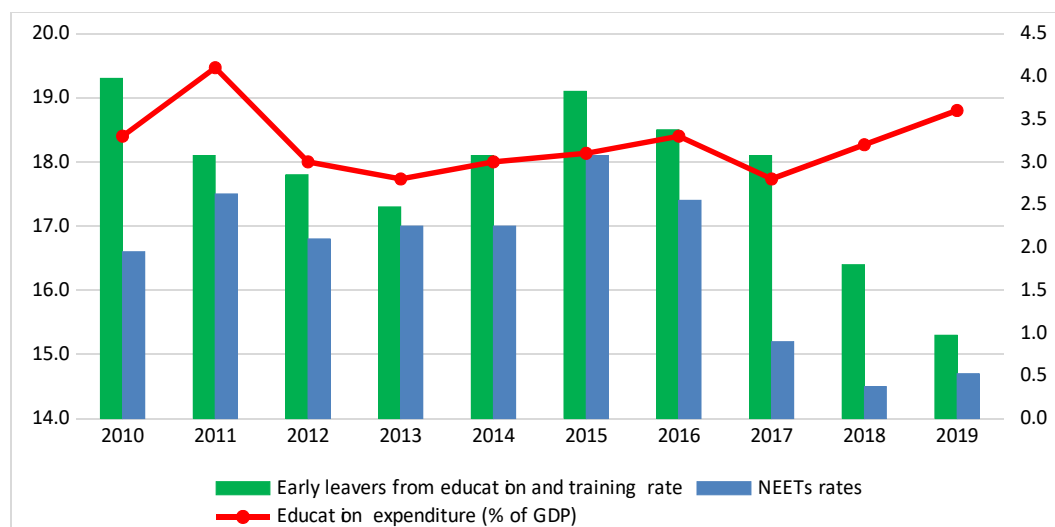
Simultaneously, according to Figure 7, during the analyzed period the expenditures on education remained at a low level in Romania. Underfunding of the education system and the lack of reforms have led, in the long run, to school dropout, respectively high unemployment among young people. Romania needs, first of all, a reform of education, supported by public policies and investments to be adapted to the new requirements of the labour market. Secondly, measures must be taken to combat early school leaving, especially those who come from disadvantaged regions/areas, who are forced to work, instead of going to school.

**Figure 6.** The evolution of the poverty rate after social transfers, the social protection expenditures, NEETs rate, the early leavers from education and training rate, unemployment rate and Gini coefficient in the period 2010-2019



**Source:** Own calculations using Eurostat database.

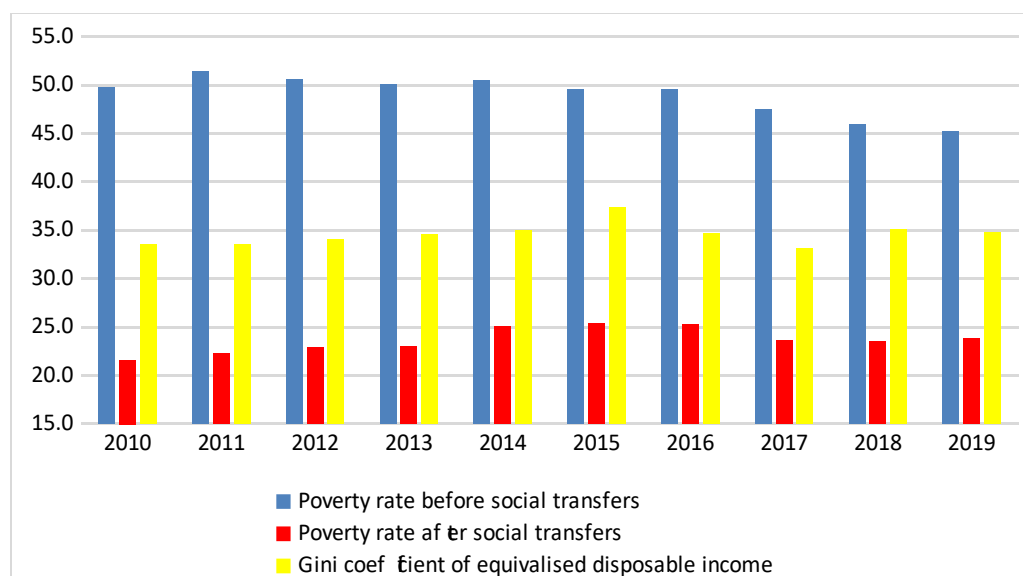
**Figure 7.** The evolution of education expenditures, the early leavers from education and training rate and NEETs rate in the period 2010-2019



**Source:** Own calculations using Eurostat database.

Social transfers have a very important role in reducing poverty and inequality. According to Figure 8, social benefits are very important in Romania for reducing poverty among the population. Expenditures on social protection increased during the analyzed period, helping to reduce poverty and reduce Gini.

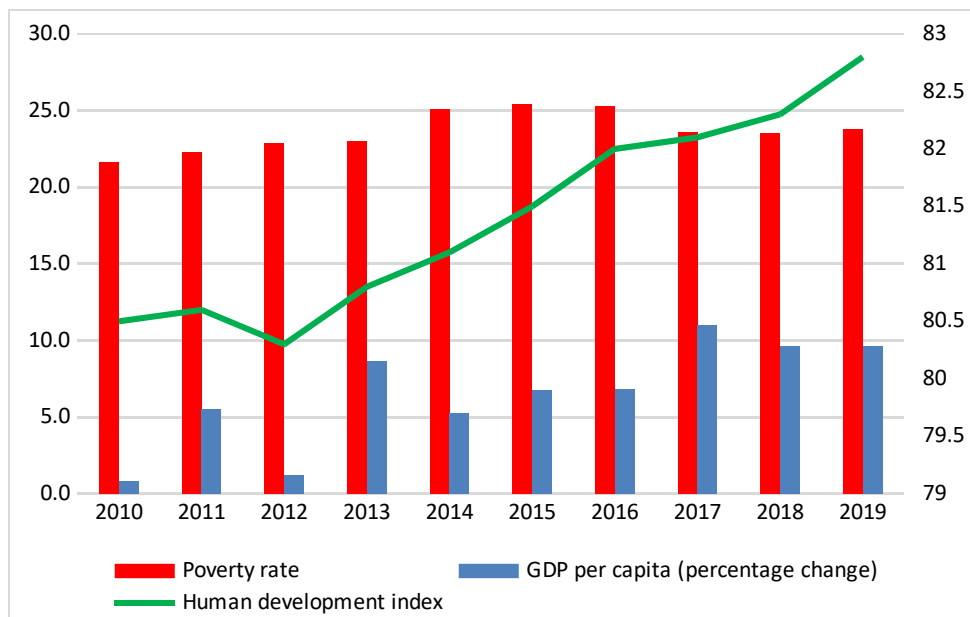
**Figure 8.** The evolution of the poverty rate before social transfers, of the poverty rate after social transfers and of the Gini coefficient in the period 2010-2019



**Source:** Own calculations using Eurostat database.

### The evolution of the human development – economic development – social development

**Figure 9.** The evolution of the human development index, of the poverty rate after social transfers and of the percentage change of GDP/capita in the period 2010-2019



**Source:** Own calculations using Eurostat database.

Figure 9 shows the evolution of human development (surprised by the human development index), economic development (represented by the percentage change of GDP/capita) and social development (expressed by the poverty rate). As it can be seen, when gross domestic product per capita increases, the poverty rate decreases and the human development index increases. This shows that, these three forms of development fits, helping the development of a society, a necessary fact for its proper functioning. Human development, by investing in human capital helps the economic development of a state, this being reflected in the increase in gross domestic product. However, GDP does not capture the development of a society. In order to support the development of a country, beneficial measures are needed for society, such as reducing poverty, inequality, eliminating early school leaving, inclusion in the labour market, all this leading to the development of society as a whole. Measures to improve people's quality of life must begin, first, from the poorest areas of Romania (the North-East, South-East and South-West regions).

## 5. Conclusions

The analysis showed that at the level of a country, there is a need to ensure the analyzed forms of development, namely human development, economic development and social development. During the analyzed period, I found that human development, represented by HDI and its components, was generally on an upward trend. Even if life expectancy has

increased and GDP has risen throughout the reference period, education is on a downward trend, this being also reflected in other indicators analyzed in the context of social development, such as the poverty rate, the Gini coefficient, the NEETs rate, early leavers from education and training rate. In this context, inclusive policies are needed to promote improvements in the education system, through training programs for teachers, investments in research, investment in schools to equip with innovative equipment, the adaptation of the curriculum to the current needs on the labour market and the preparation of the next generations to have digital and innovative skills.

Economic development was on an upward trend during the analyzed period. Policies adopted in Romania managed to get the country out of recession in a relatively short time. However, the increase of the GDP/capita does not generate a full economic development, since the Gini coefficient had an increasing trend in the first part of the analyzed period, then decreasing slightly, but not at the pre-crisis level. The increase in the Gini coefficient shows that incomes have increased more among people in the upper deciles (categorized from the perspective of income), compared to the incomes of people in the lower deciles. In this context, measures are needed to reduce income inequality, by boosting low incomes and higher taxation of wealth and high incomes. Economic development must be felt at the level of the entire population, not just at the level of a certain category of people.

In the end, in terms of social development, Romania has huge gaps at the level of the most of the analyzed indicators, being ranked among the latest countries of EU in terms of this form of development. Therefore, there is a need to adopt policies to reduce early school leaving, organizing vocational training courses especially for young people, encouraging investments in education through public-private partnerships, respectively encouraging the use of the internet for all categories of people (including in rural areas).

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