

REGIONAL DISPARITIES AND SUSTAINABLE DEVELOPMENT IN ROMANIA: INSIGHTS FROM EU FUNDS ABSORPTION DATA 2021-2027

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Abstract: The absorption of European funds by a state, respectively by its regions, represents a means of real support for sustainable development. However, regions, most of the time, fail to have even a similar absorption, which implicitly leads to disparities between them and to the uneven development of a state. Nevertheless, the role of such funds is in fact very closely linked to the idea of supporting balanced sustainable development. Thus, given the current context, in which sustainability is becoming a genuine concern for states, the issue of economic sustainability is frequently being encountered. In light of these considerations, the article aims to analyze the absorption of European funds in relation to the situation of sustainability indicators at the regional level in Romania. For these reasons, the main purpose of this research is to highlight regional differences and their trends from the perspective of sustainability and funds. Therefore, the study methodology will be shaped around official statistical data, whose interpretation and correlation will allow an understanding of the real situation in Romania, thereby identifying interregional gaps. Finally, the research conducted in the article will provide a relevant perspective on the situation in Romania, with the results aiming to make a significant contribution to the field of study through their relevance and importance.

Keywords: sustainable development, European funds, regional development, disparities

JEL CLASSIFICATION: E60, Q01, Q56, R10, R11, R13, R58

INTRODUCTION

The allocation of funds to the member states of the European Union can be seen as a financial-strategic measure, aimed at increasing the welfare of the countries. Additionally, it also targets regions in less favourable situations, where the harmonious development of a state is affected by the disparities between territories. The European Structural and Investment Funds (ESIF), the Fund for European Aid to the Most Deprived (FEAD) and payments made from the European Agricultural Guarantee Fund (EAGF) formed the main financial instruments for the period of 2014-2020, and within the programs they financed, the so-called Regional Operational Programme (ROP) was also allocated, which had an aim to support the regions from the European states.

Currently, the well-being of a region can be analysed through the lens of certain sustainability indicators and on which it is assumed that this allocation of funds should have a significant impact. Precisely because of these considerations, this paper wants to study the impact of the absorption of these funds on several sustainability indicators and, at the same time, to identify whether by allocating those money, the regions from Romania have managed to improve their situation and reduce disparities in terms of sustainability. Through this approach, it will be possible not only to observe whether there is a reduction in interregional disparities, but also to assess the real effect of European funding on the sustainability of the eight development regions. Thus, the real situations at the regional level will be put into perspective, as well as the achievement, or not, of the goal pursued by these European measures. The work has in this sense a very high relevance for future comparative studies that could be carried out following the completion of the current funding phase.

LITERATURE REVIEW

From a strategic point of view, the objectives of the European Union are very much aimed at increasing the well-being and sustainability of both Europe and the planet. Thus, in order to achieve them, the EU undertakes a series of actions, including allocating various funds to a series of programs (Kranjac *et al.*, 2017). Moreover, the goals behind these allocations were and are very much focused on the idea of a united, economically and socially stable Europe; however, "Euroscepticism" was not mitigated by the simple allocation of money and the scientific literature has managed to identify the fact that this condition changes when the absorption of funds is accompanied by improvements in the labour market, i.e. when real opportunities appear at the local level (Crescenzi, Di Catalodi and Giua, 2020).

Following the financial crisis that occurred in 2008, the situation of states and especially that of the regions in Europe, was one that created different reactions, with a strong impact on their development and due to which interregional disparities were amplified (Oprea *et al.*, 2020). In this sense, a relevant issue found in the literature is that of the link that exists between the economic evolution of a region and its capacity to absorb European funds (Marcu, Kandzija and Dorotic, 2020). However, in order to be sustainable, regions must also develop socially, not just economically, and which requires a reduction not only of economic disparities but also of social ones, precisely because both represent a problem for certain states in Europe (Bălăcescu *et al.*, 2022). It must be noted that today, sustainability plays an important role both at the local level, such as in the case of smart cities (Kaur, Buşa and Cuc, 2024) but also at the regional level (Klemens *et al.*, 2022) and behind which lies the argument based on the real need to examine sustainability in relation to smaller spatial units (Cheba *et al.*, 2024).

In this regard, the simple allocation of funds is not enough and their absorption plays a fundamental role in the sustainable development of regions and states in Europe, with this aspect being attributed to the fact that in order to achieve sustainability, not only economic decisions are necessary, but also political ones (Buşa *et al.*, 2021). Thus, regarding Romania, several previous studies have managed to identify the fact that the absorption of funds was done with delays or with loss (Oprişan and Dumitrache, 2023) (Feher *et al.*, 2021).

In light of these findings, it is more than important to further study the relationship between fund absorption and sustainability, so that it can be determined to which extent did the EU funds impact the socio-economic development; a relevant question which is also raised in the literature (Surubaru, 2021).

RESEARCH METHODOLOGY

The research methodology chosen for this work is quantitative, more precisely one based on the interpretation of the relationships between the absorption rate of certain funds and a series of sustainability indicators. In this regard, for the funding component, the Regional Operational Programme (ROP) allocation rate associated with the European funds for the 2014-2020 period was used as a reference. It is worth mentioning that the final absorption of these funds took place in 2024, which is why the period of time for which the official data on the absorption rate were extracted was that of 2020-2024. With an important addition, namely that given the construction of the allocation of these funds for the period of 2014-2020, the rate is a general one, therefore concentrated at the country level and not one specific to each development region, as it otherwise exists starting with the new series of allocations.

Regarding the sustainability indicators and in accordance with the official statistical data provided by Eurostat, the following indicators were selected as relevant for this research: Persons at risk of poverty or social exclusion; Early leavers from education and training; Employment rates; Gender employment gap and Gross domestic product at current market prices; all of which are reported at the level of the 8 development regions in Romania (NUTS 2). Their selection was not random and is intended to cover some of the most sensitive issues at the socio-economic level of these territories, as well as to facilitate the construction of the empirical study. Moreover, the use of data provided by Eurostat is frequently found in the literature, even in quantitative/empirical studies (Sala, Gaia and Cerati, 2022) (do Amaral, Kovacheva and Rambla, 2020).

Thus, in order to achieve the general objective of the research, namely that of highlighting the regional disparities and sustainable development in Romania from a financial perspective of fund absorption, several Pearson correlations were performed and which have the following structure: In the first part, the correlations between the fund absorption rate and 4 out of the 5 sustainability indicators were analysed for each region. This analysis does not aim to determine only the financial impact of absorption on situations related to people at risk of poverty or social exclusion, school dropout, employment rate or gender disparities; rather, it aims to present disparities from this perspective, namely whether through the allocation of funds, the discrepancies between regions have remained the same, increased or decreased. In the second part, the paper analyses the correlation between the Gross domestic product at current market prices by NUTS 2 region indicator for each region and the absorption rate. Aiming to identify if, by allocating these funds, the regions recorded an increase in GDP and whether this was somewhat balanced or if it was only sustained in certain cases, thus reinforcing the disparities between the territories. In this context, the purpose of the chosen research methodology is to highlight both strong and atypical correlations, thus strengthening the final conclusions of the research and also its general objective.

RESULTS AND DISCUSSIONS

4.1. Analysis of correlations between ROP absorption and sustainability indicators by NUTS 2 regions

The first analyses of the research focused on identifying possible correlations between the absorption of EU funds from The Regional Operational Programme (ROP) and the four indicators of sustainable development for each of the 8 regions, with the mention that for the Bucharest-Ilfov region, one of the indicators (Early leavers from education and training) did not have all the data available, so it was not included in the study. In light of this, the first region whose situation was

analyzed is the North-East one (see Table no. 1).

Table no. 1. Correlation between sustainability indicators and absorption rate for N-E region

Pearson's Correlations North-East Region

			Pearson's r	p
Effective Absorption Rate	-	Persons at risk of poverty or social exclusion	-0.924	.025
Effective Absorption Rate	-	Early leavers from education and training	-0.347	.567
Effective Absorption Rate	-	Employment rates	-0.887	.045
Effective Absorption Rate	-	Gender employment gap	0.749	.145

Source: Authors' own research

According to the data in Table no. 1, the only sustainability indicator on which the absorption of funds had a beneficial effect was that of Persons at risk of poverty or social exclusion, where according to Pearson's r, there was a strong negative correlation, and with a relevant statistical significance according to the p-value. This means that with the increase in the absorption rate, the percentage of persons at risk of poverty or social exclusion decreased. It remains to be seen whether this correlation is maintained in the case of the other regions or not. Hence, the next analysis is that of the South-Muntenia Region (see Table no. 2).

Table no. 2. Correlation between sustainability indicators and absorption rate for S-Muntenia region

Pearson's Correlations South-Muntenia Region

			Pearson's r	p
Effective Absorption Rate	-	Persons at risk of poverty or social exclusion	-0.971	.006
Effective Absorption Rate	-	Early leavers from education and training	0.515	.374
Effective Absorption Rate	-	Employment rates	-0.772	.126
Effective Absorption Rate	-	Gender employment gap	0.348	.566

Source: Authors' own research

Table no. 2 shows that also in the case of this region, the first sustainability indicator is the only one that has a strong significant correlation with the absorption of funds (p is less than 0.05, while r is strongly negative), even stronger than in the case of the previous one. However, the situation remains equally unsatisfactory for the rest of the indicators. The next region studied is the one of the North-West Region (see Table no. 3).

Table no. 3. Correlation between sustainability indicators and absorption rate for N-W region

Pearson's Correlations North-West Region

			Pearson's r	p
Effective Absorption Rate	-	Persons at risk of poverty or social exclusion	0.149	.811
Effective Absorption Rate	-	Early leavers from education and training	-0.361	.551
Effective Absorption Rate	-	Employment rates	-0.947	.014
Effective Absorption Rate	-	Gender employment gap	-0.477	.416

Source: Authors' own research

Table no. 3 provides a first indication that the negative correlation between the absorption rate and the Persons at risk of poverty or social exclusion indicator is not a general trend in the regions of Romania. However, it is important to consider the relationship between absorption and Employment rates presented in this table, as it is contradictory and non-specific, indicating that as the absorption of EU funds increased, employment rates decreased. The fourth analysis is that of the South-East Region (see Table no. 4).

Table no. 4. Correlation between sustainability indicators and absorption rate for S-E region

Pearson's Correlations South-East Region

			Pearson's r	p
Effective Absorption Rate	-	Persons at risk of poverty or social exclusion	-0.965	.008
Effective Absorption Rate	-	Early leavers from education and training	0.971	.006
Effective Absorption Rate	-	Employment rates	-0.941	.017
Effective Absorption Rate	-	Gender employment gap	-0.927	.023

Source: Authors' own research

In the case of the South-East region, the situation of the first indicator returns, being again satisfactory. Furthermore, a statistically significant strong negative correlations can also be observed between the absorption of funds and the Gender employment gap indicator. This means that a higher absorption rate is associated with a reduction in gender employment inequalities ($p < 0.05$). The following analysis will be that of the Centre region (see Table no. 5).

Table no. 5. Correlation between sustainability indicators and absorption rate for Centre region

Pearson's Correlations Centre region

			Pearson's r	p
Effective Absorption Rate	-	Persons at risk of poverty or social exclusion	-0.511	.379
Effective Absorption Rate	-	Early leavers from education and training	0.045	.943
Effective Absorption Rate	-	Employment rates	0.131	.834
Effective Absorption Rate	-	Gender employment gap	-0.803	.102

Source: Authors' own research

For the Central region, there was no statistically significant correlation between sustainable development indicators and the absorption of European funds (ROP funds). The next region is South-West Oltenia (see Table no. 6).

Table no. 6. Correlation between sustainability indicators and absorption rate for S-W Oltenia region

Pearson's Correlations South-West Oltenia Region

			Pearson's r	p
Effective Absorption Rate	-	Persons at risk of poverty or social exclusion	-0.616	.269
Effective Absorption Rate	-	Early leavers from education and training	0.892	.042
Effective Absorption Rate	-	Employment rates	-0.750	.145
Effective Absorption Rate	-	Gender employment gap	-0.814	.093

Source: Authors' own research

The results presented in Table no. 6 are not satisfactory, however, one must also take into account the atypical positive and significant correlation between the absorption rate and the Early leavers from education and training indicator, a situation also present in Table no. 4. This shows that with the increase in the absorption of funds, the percentage of those who leave education and training early has also increased, an unnatural result. Next, the Western Region is analysed (see Table no. 7.)

Table no. 7. Correlation between sustainability indicators and absorption rate for Vest region

Pearson's Correlations West Region

			Pearson's r	p
Effective Absorption Rate	-	Persons at risk of poverty or social exclusion	-0.863	.060
Effective Absorption Rate	-	Early leavers from education and training	0.433	.466
Effective Absorption Rate	-	Employment rates	-0.908	.033
Effective Absorption Rate	-	Gender employment gap	-0.848	.070

Source: Authors' own research

For the West Region the situation is a little different. In the case of people at risk of poverty and social exclusion, the p-value is very close to the 0.05 threshold, hence very close to being significant, also Pearson's r shows that there is a strong negative correlation between the absorption of funds and this indicator, which means that there could be a real link between the two, a situation that is worth following and analysing in the future. At the same time, as in the case of the North-West region, there is a strong and significant negative correlation between the absorption rate and the Employment rate, an atypical issue but which, given the zonal context, namely that the two regions are in the vicinity, could imply some deeper problems. The last region being that of Bucharest-Ilfov (see Table no. 8).

Table no. 8. Correlation between sustainability indicators and absorption rate for Bucharest-Ilfov Region

Pearson's Correlations Bucharest-Ilfov Region

			Pearson's r	p
Effective Absorption Rate	-	Persons at risk of poverty or social exclusion	-0.677	.209
Effective Absorption Rate	-	Employment rates	0.636	.249
Effective Absorption Rate	-	Gender employment gap	-0.517	.372

Source: Authors' own research

In the case of this region, none of the indicators was statistically significantly affected by the rate of absorption of funds. Concluding this part of the study by indicating the general lack of important correlations.

4.2. Analysis of correlations between ROP absorption and GDP indicator

For this analysis, it should first be mentioned that the available Eurostat data covers, for the GDP indicator, only the period of 2020-2023, 2024 not yet being recorded. In this sense, for the correlation between Gross domestic product at current market prices by NUTS 2 region and the fund absorption rate, the situation is much more favorable, with the results for each region being statistically significant (see Table no. 9).

Table no. 9. Correlation between GDP and absorption rate for all regions

Pearson's Correlations Gross domestic product at current market prices by NUTS 2 region

		Pearson's r	p
Effective Absorption Rate	- GDP at current market prices North-East Region	0.994	.006
Effective Absorption Rate	- GDP at current market prices South-Muntenia Region	0.994	.006
Effective Absorption Rate	- GDP at current market prices North-West Region	0.996	.004
Effective Absorption Rate	- GDP at current market prices South-East Region	1.000	< .001
Effective Absorption Rate	- GDP at current market prices Centre region	0.998	.002
Effective Absorption Rate	- GDP at current market prices South-West Oltenia Region	0.988	.012
Effective Absorption Rate	- GDP at current market prices West Region	0.996	.004
Effective Absorption Rate	- GDP at current market prices Bucharest-Ilfov Region	0.995	.005

Source: Authors' own research

The results of Table no. 9 indicate that there is a strong positive correlation between the absorption of funds and the Gross domestic product at current market prices by NUTS 2 region indicator, especially in the case of the South-East region, where it is perfect with a p value lower than <0.001. However, this situation compared to that of the other sustainability indicators analysed, raises a series of concerns. From which, it can be considered that although GDP has grown following the increasing absorption of funds, the real situation in the regions has not improved, on the contrary, in some cases it seems that it has had an opposite trajectory.

CONCLUSIOS

According to the research results, it can be considered that with regard to regional disparities in Romania, the absorption of ROP funds did not have a significant positive effect from two perspectives. First of all, the correlations between the 4 sustainability indicators and the absorption rate indicate in principle a very small improvement of the situations in the regions. The *Persons at risk of poverty or social exclusion* indicator being the only one that had a positive trend of reducing disparities in terms of social issues. Moreover, the atypical correlations identified by the research only serve to reinforce the growth of disparities. Thus, the overall situation is disappointing and does not reflect the goals and results sought by allocating such funds. In this regard, the issue of inefficient absorption of funds could be attributed to weak policies, where planning and prioritization did not reflect the real needs of the territory, or did not have a long-term vision. On the other hand, these issues may also be due to a reduced administrative capacity, which can negatively affect the integration of strategies at regional level. Additionally, the lack of monitoring and evaluation may have played a key role in correcting the unsatisfactory results in the regions.

Secondly, the correlation between the absorption rate and GDP for each region, even if strong and significant, had a similar manifestation, which could lead to the maintenance or even the generation of regional disparities, as the GDP growth was not one that balanced the situation between regions, but rather was just a natural increase of this indicator for each region. In conclusion, it can be noted that although the purpose pursued by these financings, respectively funds, is one aimed at ensuring the good development of all regions and at standardizing sustainability, overall, the results of the study indicate that, at least in terms of the funds allocated in the period of 2014-2020, they have failed to improve the situation in Romania and have not achieved their objectives from a sustainability perspective.

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