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QUANTIFYING THE NUTS 3 REGIONS' FINANCIAL PERFORMANCE THROUGH GOOD PRACTICES IN THE PUBLIC MANAGEMENT. CASE STUDY: ROMANIA

Abstract. *The paper proposes a new statistic model able to quantify the public administrations' performance. The analysis' main goal is to obtain a performance ranking starting from the historical results reported by the accounting system of the regional European administrations. The used methods are the descriptive analysis of databases, the study of the literature on regional models of economic growth and the development optimization measures based on the principles of good practice in local management. The results of the analysis allow to create general performance profiles and objective measurement of the optimization measures in line with the specific European performance targets.*

Keywords: *Regional public performance, Public management, Public administration accounting system, Game theory, Statistical modeling.*

JEL Classification: C73; R13; M40; H1

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1. Introduction

The present public accounting system translates into practice the normalization of the managerial accounting system.

The aspects related to the accounting normalization imply the creation of a regulatory framework introduced at the level of the public units through the internal control code, thus formalizing, through a flexible and adaptable framework, the procedural aspects of the good budget execution.

This paper aims to critically highlight the keys to generating compliance to models of economic performance of local public administration results (at NUTS 3 level) through a critical analysis of the achievements of budgetary executions accounted for by each county in Romania. These executions have been reported at national level through income and expenditure budgets in the dynamics during 2005-2019. In order to ensure comparability, the initial data were corrected using annual inflation rates (National Institute of Statistics, 2019).

The revenue collection financial leverage is a significant component of the compliance by referencing to the result of the exercise (deficit or surplus). This realises the connection between the local and regional development with the national development. This relationship is assessed in the light of similar European achievements, resulting in a ranking of compliance with performance models by presenting the guidelines of regional administrations (pro-consumption or pro-development).

The analysis is focused on the obtaining of a performance ranking starting from the historical results reported by the accounting system of the regional administrations in Romania. As a member of the EU, we consider that the study of the Romania's case is beneficial to any research of this kind in the other EU Member States, as an example of good practices and case studies of the European reference.

2. Literature review

According to some authors, the regional management performance in the context of the economic crisis is determined by the nominal values of the GDP deflator harmonized with CPI on the proxy trend by applying the Hodrick-Prescott filter (Silvo, 2018). The performed performance under these conditions mitigates the asymptomatic trend of unemployment rate by applying the same filter. It generates adjustable performance levels through public policies for the analysed regions.

The spatial models for estimating the economic growth from the perspective of convergence to European policies (Alexa et al, 2019) represent another approach of the performance quantification. They are adjusted with the regional competitiveness index. In this case, the performance evaluation is generated by the

β multiplier which is able to measure the convergence acceptance to the EU policies.

In this context of performance quantification, some authors (Pina et al, 2019) question the evaluation of public management style based on the OECD model. The proposed performance model spans public sector performance on the social and economic dimension, quantifying the main segments which generate surplus value, such as: good practice in public administration, performance in education, viability of the national public health system, efficiency in the use of national infrastructure, on the one hand.

A segment considered in the analysis of public administration performance is, in the opinion of some authors, the limitation of causal relations, social tensions and national particularities in order to guarantee the stability of the process of increasing the efficiency of the public administration under the impact of the EU regulations (Berlach and Striiashko, 2019).

The performance objectives of public sector management are a core of interest after the economic crisis of 2007-2012, through three pillars of excellence: the performance of the public administration processes, the performance of the accounting segment in relation to the technological performance (the generator of sustainable economic growth) and the performance of the adaptive management system (Arnaboldi et al, 2015).

The game theory is addressed in the analysis of economic performance through informal interactions between the main components of the budget (Cohen, 2015; Tudor, Popa, Belu, & Paraschiv, 2016). This theory generates four possible scenarios of cooperation in local public administration between regional decision-makers and regional actors, as well. The quadrant of cooperation with its four sides is thus drawn, from perfect cooperation to non-cooperation.

Other authors quantify the effect of performance gaps by evaluating the predictable budget changes, concluding that the increase in the level of performance influences in a positive and negative sense (increasing the resistance to the budget deficit) the budgetary changes (Flink, 2018).

In the dedicate literature, a meta-analysis of the public organizations' management performance was carried out. It is a history of the performance concepts which covers 24,737 accepted concepts in 49 studies during 1997 – 2016 (Gerrish, 2016). The conclusions of this meta-analysis define the key performance elements of public management, as follows: setting performance targets and implementing them through cooperative measures, using incentives to achieve performance goals, strategic planning of performance, decision making in accordance with established performance, benchmarking of performance, organizational autonomy of local budgets, analysing of performance effects with all actors in the system.

Some authors analyse performance on the basis of the public-private partnership's renegotiation financial models, involving the theory of games (Ping Ho, 2006).

From other point of view, the financial compliance models are addressed through the objectives of cohesion policy, the financial correction pattern and budgetary allocations. The outcome of this approach indicates that non-compliance increases the degree of regional autonomy of the political system, causing repositioning in the implementation of cohesion policy through regional programs (Mendez and Bachtler, 2017).

Other authors view the performance through its motivational aspects generating continuous growth (Gabor, Kardos, Cristache, Nastase, & Petrariu, 2021), also in relation to the historical options regarding the organization of the public system and in relation to the social restrictions on organizational non-performance in social policy (Hong, 2018).

An interesting approach is represented by the public management in the context of budgetary accounting. The judicious use of the resources and the access to historical value-added information, as a result of this use, give public accounting a significant role in preventing the resource crisis during austerity. This creates the managerial control levers under performance conditions with an impact on optimal consumption typology, in order to maximize the impact of organizational management at all social levels (Steccolini, 2018).

Another aspect to be considered in the performance investigation is related to the informational risk. Its quantification generates a net adjustment of information, including accounting, which is useful to public decision makers in optimizing the public costs on significance levels generated by the budget execution (Umehara and Ohta, 2009).

These theories are tantalizing through the use of managerial control levers and software to assess the financial deviations from the initial objectives proposed. The managerial control helps to monitor the financial flows in the public system, and potentially enhances the performance through the coercive control measures (van Helden and Reichard, 2019).

A new performance theory aims at transdisciplinary public leadership, which carries out a joint between traditional public administration and its organizational methods and new public management (Yeboah-Assiamah et al, 2019).

The demographic and economic influence on the financial sustainability of the local governance is analysed under a new approach in (Santis, 2020). The result is a "pathological scenario" in which the local government pursues short-term strategies that will influence the future generations through the effects of these strategies.

The performance of attracting the European funds was viewed from an econometric perspective by other authors (Antohi et al., 2020). This perspective has allowed the design of a dynamic model in order to reduce fraud and error in the management of the European funded projects.

Some studies address performance by identifying the performance gap at the level of public management decision makers, as a future improvement factor for

the managerial decisions, including the financial ones, based on proactive managerial feedback (Min & Oh, 2020).

The local authorities' performance evaluation was made from the perspective of the input-output interaction, following 4 dimensions of performance from 6 allocations meant to confirm or deny the possibility of improving the level of managerial efficiency in the public sector (Lindermüller, Sohn, & Hirsch, 2020).

The pursuit of the performance objectives in public management based on the types of expenditures (public consumption of goods and services) allowed the authors (Fan, Pang, & Pestieau, 2020) to develop a dynamic transitional model, leading to improved quality of the citizens' life and to increased efficiency in the public sector.

Referring to the above analysis, our paper proposes a new approach to the concept of regional public management performance, based on the quantification of optimal regional performance models and the generally adjustable model by applying game theory. This method is valid, as identified in the Methodology chapter, and provides the best perspective for modelling.

3. Research methodology

The research methodology aims to evaluate the conceptualization and the design's stages of the general performance model. The making of the dynamic keys to generate compliance requires the following steps (see Figure 1):

Establish a general performance model based on good budget execution criteria

- The model will be adjusted according to the achievements of the first NUTS 3 regions; this model will also include the income self-generation capability through the achievement of investment objectives(by studying evolution in dynamics);

Keys' dynamics

- It consists of a self-tuning mechanism based on the performance recorded at one time by the top 3-5 NUTS 3 regions core;

Quantification of Performance Compliance

- The data obtained will be interpreted only as relative data, aiming at eliminating the development differences between the counties and maintaining the proposed objective, namely the quantification of performance compliance;

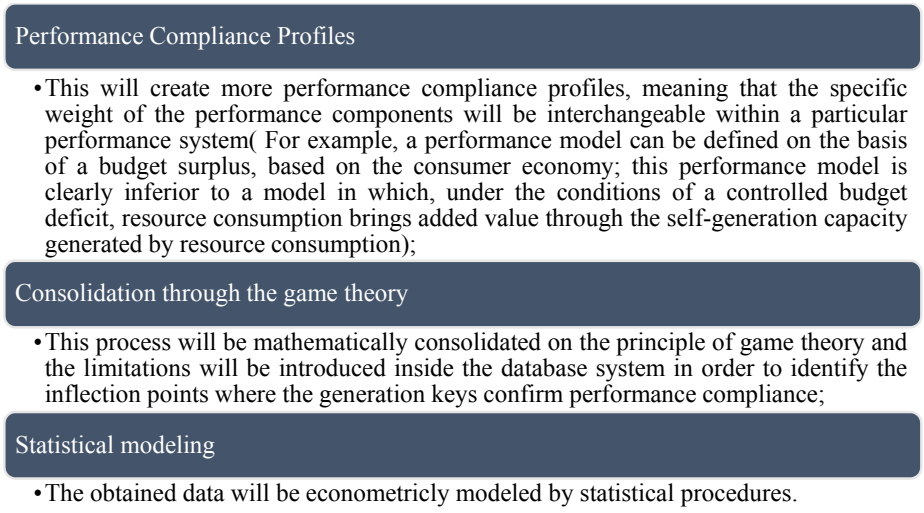

Figure 1: Research algorithm

To quantify economic performance through good practice in public management, the authors have developed their own quantification and performance optimization model, starting from the following *hypotheses*:

H1: *The maximizing of the financial autonomy generates high degrees of freedom in the managing development goals based on the competitive budget allocations.* This hypothesis resulted from the analysis of hypothesis H10 according to which the financial autonomy has a negative influence on the financial sustainability (Santis, 2020).

H2: *The ability to use non-reimbursable funds as the entropy of the budget allocations on performance targets is lower.* It represents a direct and strong causal relationship for bad public management. This approach is covered by a research regarding the implementation of the European projects in Romania. The analysis was supported by the NOP model, a model able to quantify the sustainable management funds offered to the EU for strategic national economic development (Antohi et al., 2020).

H3: *The performance poles of the administrative management are limited, under a dissipated entropy of allocations, to internal performance*. Thus, there are significant limitations of the public development management in line with the EU objectives. This approach is connected to the three hypotheses and the theoretical proactive model defined by (Min & Oh, 2020).

H4: *The performance poles in the public management system use preponderantly the allocation of the expenditure titles to personnel and goods and service expenditures (the amount of the allocations exceeds 50% of the total value*

of the incurred expenditure). The performance is manifested in terms of balancing allocations between these two spending titles. Some authors (Lindermüller et al., 2020) view performance as the result of the allocations and the allocation effects. Assuming that the allocations can be financial and non-financial, it results in a number of 6 permutations of the 4 dimensions of performance: 1. Process vs. employee; 2 Financial vs. customer; 3 Customer vs. process; 4 Financial vs. employee; 5 Customer vs. employee; 6 Financial vs. process. This approach supports the H4 hypothesis defined by us.

H5: *The performance of the poles is manifested in the case of the budget allocation on the expenditure chapters if and only if there is a balance between the allocations for education, transport and general public services.* This hypothesis was built on the model that characterizes the transitional dynamics and the steady state of each function. The authors of this model took into account the government expenditures by destination: social protection, education, health, etc. (Fan et al., 2020).

The above hypotheses have to be checked by the following proposed model. This new model is defined according to the games theory, as:

If j,i ∈ J, where J is the set of authorities of the regional public administration according to NUTS III classification; it is finite and takes values in the range $\overline{(1,42)}$ for Romania.

-*the optimal profile* is characterized by the non-widowed population j_i that satisfies the simultaneous maximization conditions (top 5) for the trend of the budget revenues evolution, with correspondence in the balanced allocations on titles, parts and expenditure chapters. This mathematical set concurrently meets the criterion of maximizing the evolution trend of the budget surplus. The condition is mathematically defined as the follows:

$(\exists)\, J^* = \{j_i^*\} \neq \emptyset,$ such that $\forall\, j_i^* \in J^*$ satisfies the conditions:

$$\begin{gathered}
\frac{\sum_{m=1}^{n} INC_{m_i}{}^*}{\sum_{m=1}^{n} m} \gg \frac{\sum_{m=1}^{n-1} INC_{m_i}{}^*}{\sum_{m=1}^{n-1} m}; and\ \frac{\sum_{m=1}^{n} INC_{m_i}{}^*}{\sum_{m=1}^{n} m} \gg \frac{\sum_{m=1}^{n} INC_{m_i}}{\sum_{m=1}^{n} m} \\
\frac{\sum_{m=1}^{n}\left(INC_{m_i}{}^* - EXP_{m_i}{}^*\right)}{\sum_{m=1}^{n} m} \gg \frac{\sum_{m=1}^{n-1}\left(INC_{m_i}{}^* - EXP_{m_i}{}^*\right)}{\sum_{m=1}^{n-1} m} \gg 0; \\
\frac{\sum_{m=1}^{n}\left(INC_{m_i}{}^* - EXP_{m_i}{}^*\right)}{\sum_{m=1}^{n} m} \gg \frac{\sum_{m=1}^{n}\left(INC_{m_i} - EXP_{m_i}\right)}{\sum_{m=1}^{n} m} \gg 0; \\
\Rightarrow \frac{\sum_{m=1}^{n} BUDEXE_{m_i}{}^*}{\sum_{m=1}^{n} m} \gg \frac{\sum_{m=1}^{n} BUDEXE_{m_i}}{\sum_{m=1}^{n} m}; \frac{\sum_{m=1}^{n} BUDEXE_{m_i}{}^*}{\sum_{m=1}^{n} m} \gg 0
\end{gathered} \tag{1}$$

where:

- $J^* = \{j_i^*\}$ represents the non-widowed set of public administrations in which performance management is exercised, *i* is finite and takes values in the range $\overline{(1,42)}$;

- $INC_{m_i}{}^*$ represents the maximum (top 5) of the budget collected revenues at the level of the public administrations with an efficient management;

- INC_{m_i} represents the level of budget revenues collected at the level of the public administrations in the set J, respectively the number of the regional public administration authorities according to the NUTS III classification;

- $EXP_{m_i}{}^*$ represents the optimal (top 5) level of balanced allocations on titles, chapters and spending chapters in public administrations with top management;

- EXP_{m_i} represents the level of balanced / unbalanced allocations on titles, parts and expenditure chapters at the level of the public administrations in the set J, respectively the set of the regional public administration authorities according to the NUTS III classification;

- *BUDEXE* represents the level of budget execution calculated as the difference between total revenue and total expenditure;

- *the general profile* is characterized by the non-widowed set that satisfies the simultaneous average conditions for the budget revenues evolution, with correspondence in balanced allocations on titles, parts and expenditure chapters. This set satisfies simultaneously the criterion of positioning over the general average of the budget surplus evolution trend. The condition is mathematically defined as the follows:

$(\exists)\, J = \{j_i\} \neq \emptyset$, such that $\forall\, j_i \in J^-$ satisfies the conditions:

$$\frac{\sum_{m=1}^{n} INC_{m_i}}{\sum_{m=1}^{n} m} \gg \frac{\sum_{m=1}^{n-1} INC_{m_i}}{\sum_{m=1}^{n-1} m}$$

$$\frac{\sum_{m=1}^{n}\left(INC_{m_i} - EXP_{m_i}\right)}{\sum_{m=1}^{n} m} \gg \frac{\sum_{m=1}^{n-1}\left(INC_{m_i} - EXP_{m_i}\right)}{\sum_{m=1}^{n-1} m} \geq 0 \qquad (2)$$

$$\Rightarrow; \frac{\sum_{m=1}^{n} BUDEXE_{m_i}}{\sum_{m=1}^{n} m} \geq 0;$$

- *the nonperforming profile* is characterized by the multitude of widowed non-widowed set j_i that satisfies the simultaneous conditions for non-performance, such that the asymptotic trend of evolution of the budgetary revenues, with correspondence in unbalanced allocations on titles, parts and expenditure chapters. This set also satisfies the positioning criterion inside the budget deficit area. The condition is mathematically defined as the follows:

$(\exists)\, J = \{j_i\} \neq \emptyset,$ such that $\forall\, j_i \in J$ satisfies the conditions:

$$\frac{\sum_{m=1}^{n} INC_{m_i}}{\sum_{m=1}^{n} m} \approx \frac{\sum_{m=1}^{n-1} INC_{m_i}}{\sum_{m=1}^{n-1} m}$$

$$\frac{\sum_{m=1}^{n}(INC_{m_i} - EXP_{m_i})}{\sum_{m=1}^{n} m} \approx \frac{\sum_{m=1}^{n-1}(INC_{m_i} - EXP_{m_i})}{\sum_{m=1}^{n-1} m} \ll 0 \qquad (3)$$

$$\Rightarrow; \frac{\sum_{m=1}^{n} BUDEXE_{m_i}}{\sum_{m=1}^{n} m} \ll 0;$$

According to the game theory, the branched structure of the set J is represented in Figure 2:

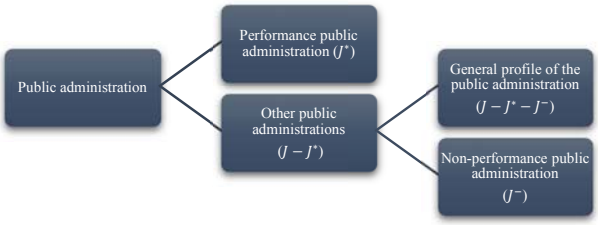

Figure 2: The game theory diagram for performance in public administration

We say that $(\exists)\ P_i,\ i = (\overline{1,3})$, such that $\sum_{i=1}^{3} P_i = 1$; which satisfies the condition:

$$\begin{pmatrix} \alpha * P_1 * j_1 & \beta * P_2 * j_1 & \gamma * P_3 * j_1 \\ \dots & \dots & \dots \\ \alpha * P_1 * j_n & \beta * P_2 * j_n & \gamma * P_3 * j_n \end{pmatrix}; \qquad (4)$$

where:

$-\ \alpha, \beta, \gamma$ are logical variables, and $\alpha + \beta + \gamma = 1$.

We say that $\ni\ P_i,\ i = (\overline{1,3})$, such that $\sum_{i=1}^{3} P_i = 1$; which satisfies the condition:

$$\begin{pmatrix} \alpha * P_1 * j_1 & \beta * P_2 * j_1 & \gamma * P_3 * j_1 \\ \dots & \dots & \dots \\ \alpha * P_1 * j_n & \beta * P_2 * j_n & \gamma * P_3 * j_n \end{pmatrix}; \qquad (5)$$

where:

$-\ \alpha, \beta, \gamma$ are logical variables, and $\alpha + \beta + \gamma = 1$.

We say that the optimization factors o_i act on the system for $\forall j_i \notin J^*$ such that:

$$\lim_{n\to\infty}\prod_{k=1}^{n}\left[\sum_{i=1}^{3}(\alpha+\beta+\gamma)P_i\right]_k \ll \lim_{n\to\infty}\prod_{k=1}^{n}\left[\sum_{i=1}^{3}(\alpha_{opt}+\beta_{opt}+\gamma_{opt})P_i\right]_k \quad (6)$$

We define the following optimization criteria:

– the amount of revenue earned by the administration simultaneously meets the criteria for sustainable GDP/capita growth in relative terms ($\frac{GDP}{capita_n} > \frac{GDP}{capita_{n-1}}$), concurrently with $\frac{\sum_{m=1}^{n} INC_{m_i}}{\sum_{m=1}^{n} m} > \frac{\sum_{m=1}^{n-1} INC_{m_i}}{\sum_{m=1}^{n-1} m}$;

– the amount of expenditure is reflected in the school enrolment indicators in relatively rising terms, of the health (life expectancy) in increasing relative terms and indicators of the effectiveness of the organizational management (the rate of deteriorating corruption, the underground economy in reduction, the quality of the growing act of justice);

– the optimized budget execution has positive values (surplus) and reflects GDP growth (GDP with steadily increasing values in relative terms) and low inflation in line with EU objectives.

4. Results and discussions

In order to identify the compliancy keys to performance, the authors applied the descriptive method of interpreting NUTS 3 regions' revenues trend developments on two distinct dynamic components: the component of the absolute values analysed in current prices, after adjusting with the inflation index, and the component of the relative values of the fixed indices. Both methods were applied to data from 2005-2017 regarding the achieved incomes by each county in Romania (according to NUTS 3 classification). The descriptive structure of the database (Ministry of Public Finance, 2017) was analysed by reporting the sample's incomes trend evolution to values above the annual average, obtaining distinct rankings for the two types of evolution (in absolute values and in relative values) (see Figure 3).

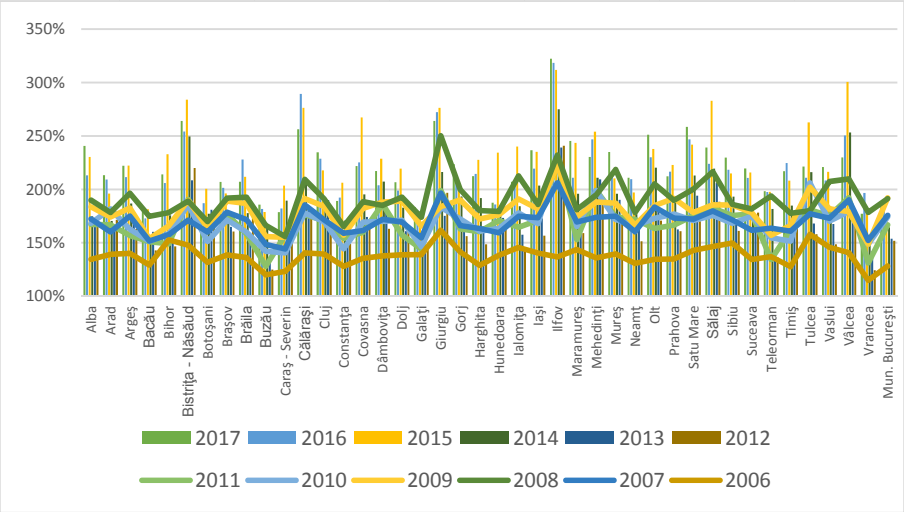

Figure 3: Budget revenues' trend

The profiles that indicate performance compliance are those that have a non-intersecting intersection on the two methods, namely the compliance profile of the Cluj, Iasi and Ilfov counties. For these counties, the structure of income and expenditure items in the budget execution situation was analysed as follows: total income (account 00.01.02) and its components, respectively: own income (account 48.02), amounts received from the EU (account 48.03) and amounts deducted from VAT to finance decentralized NUTS 3 expenditure (account 11.02.02). The remainder of the revenue amounts are included in Other Income as they do not exceed 20% of the total revenue.

The general profile obtained is defined according to the model presented in the previous chapter, as follows (see Figure 4):

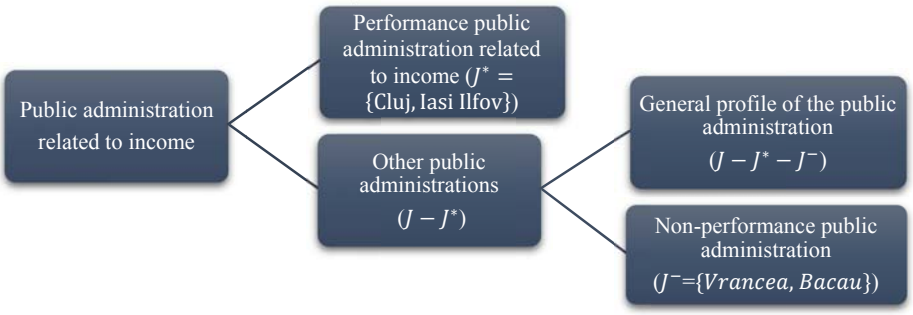

Figure 4: Keys to generate performance based on the budget revenue criterion

In order to identify the compliancy keys to performance related to NUTS 3 regions' expenditure trend developments there were used two distinct dynamic components: the component of the absolute values analysed in current prices, after adjusting with the inflation index, and the component of the relative values of the fixed indices.

- expenditure has been analysed on two structural levels (by type of expenditure and by parts and expenditure chapters). Thus, total expenditure (account 50.02) was treated on principal expenditure headings as follows: staff expenditure (account 10.xx), expenditure on goods and services (account 20.xx), expenditure on projects funded by non-reimbursable external funds (account 56.xx, respective account 58.xx). The rest of the types of expenses are included in "Other expenditures" and do not exceed 40% of the total expenses;

- allocations on parts and expenditures chapters were analysed mainly for: general public services (account 50.02), education (account 65.02), insurance and social assistance (account 68.02) and transport (account 84.02). The remaining parts and expenditure chapters were included in Other Expenses, which do not exceed 30% of the total incurred amount of expenditures (see Figure 5).

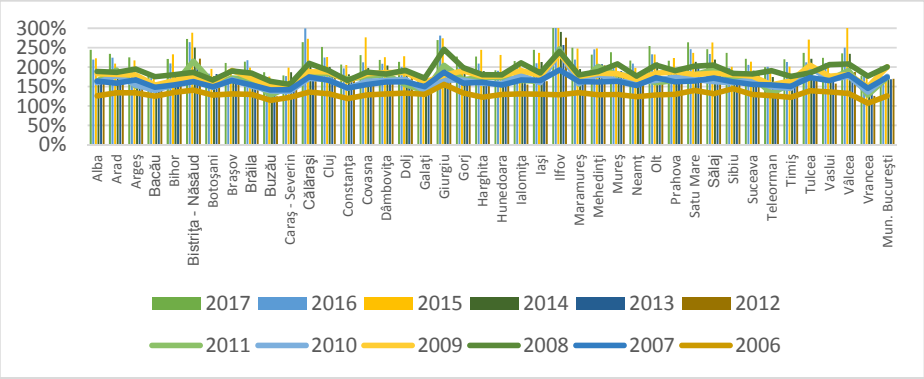

Figure 5: Budget expenditures' trend

The general obtained profile is defined according to the model presented in the previous chapter, thus (see Figure 6):

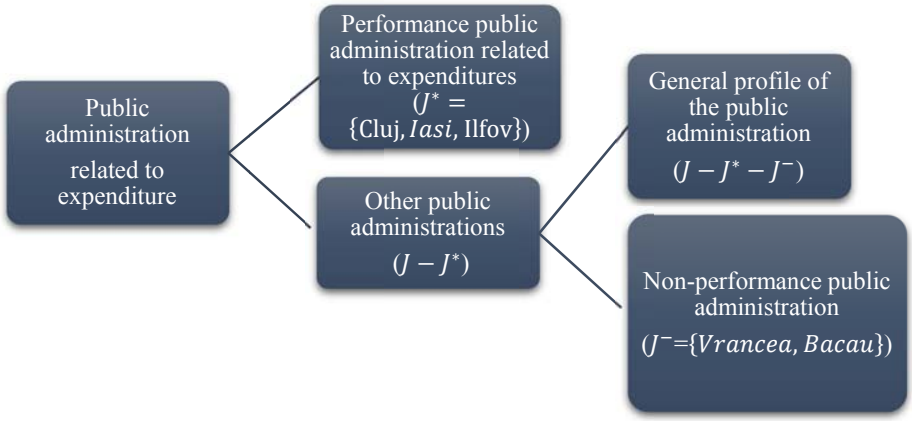

Figure 6: Keys to generate performance based on the budget expenditure criterion

Summarized, the state of budget surplus / deficit was analysed by comparing total revenues with total expenditures. All amounts have been converted into comparable prices by adjusting the inflation value to eliminate asymptomatic differences assimilated to this phenomenon (see Figure 7).

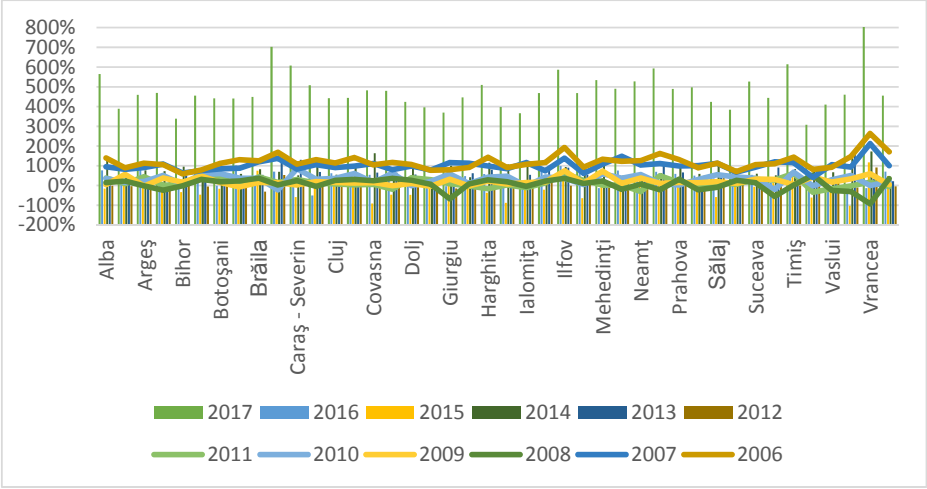

Figure 7: Regional budget execution

The general obtained profile according to the analysed budget execution is defined, according to the model presented in the previous chapter, in Figure 8.

According to this figure, the model is demonstrated on the maximum criterion, according to the equations presented on the methodology side, and the NUTS3 administrative performance pole is Ilfov County, which meets the maximum criteria for all three types of analysed indicators (income, expenditure

and budget execution). In this ranking, it is followed by the local administrations of Cluj and Iasi, the rest of the administrations, excepting Vrancea and Bacau, being ranked in the medium performance area, the area subject to the optimization criteria.

The administrations of Vrancea and Bacau require immediate administrative restructuring measures in order to meet at least the minimum performance criteria for a European state.

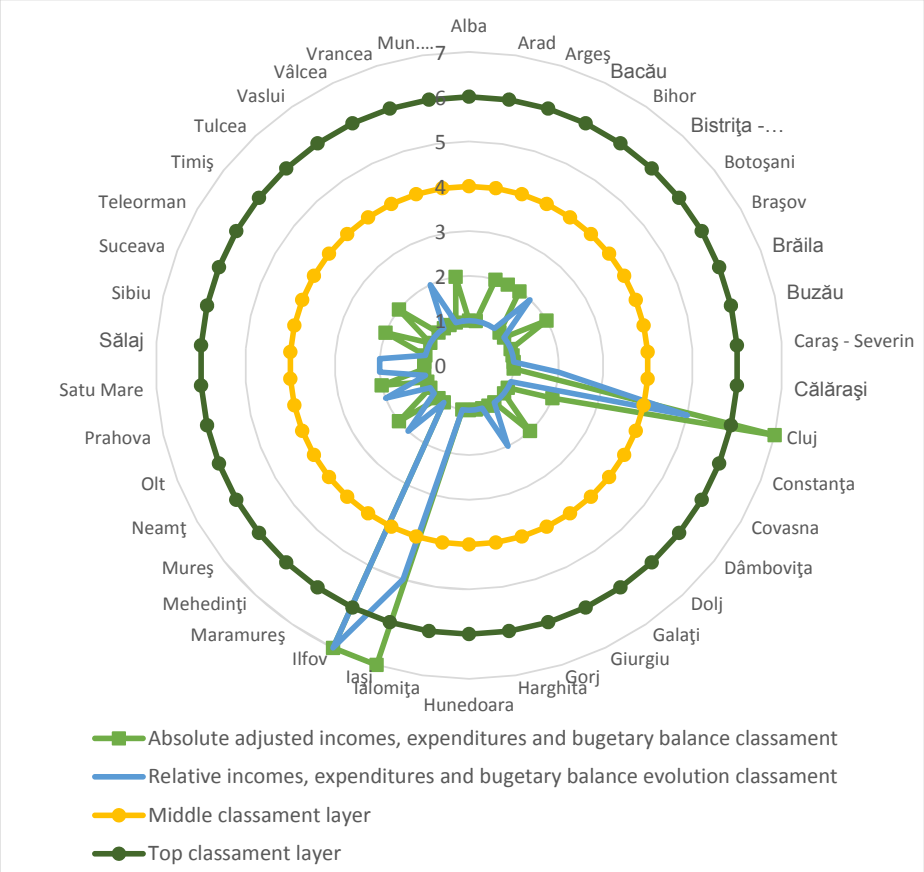

Figure 8: Top of NUTS 3 using incomes and expenditures

The optimization model applicable to qualitative coefficients targets the following main measures for the administrations of the second series:

- using of revenue for sustainable investment to improve the GDP / capita indicator in the region (effective measures to improve the economic environment and public administration interaction with the business sector in the area, including through public-private partnerships);

- increasing administration's ability to attract revenue by maximizing European funds absorption in the region and good management of ongoing projects;
- creating local industrial parks according to the examples from Cluj and Ploiesti;
- using the customs lever in border areas by streamlining customs control;
- professional reconversion and labour capacity-building in the region along with the unemployment decrease;
- increasing the regional public education system quality by reducing school abandonment in the rural area and through continuous learning programs;
- increasing the public health services quality by monitoring the quality indicators in sanitary units under local administrative control;
- access of the population from the area to competitive health programs, based on investments in the regional infrastructure, along with the monitoring and auditing of these public health entities;
- increasing the effectiveness of organizational management by reducing corruption in the system (effective measures to limit corruption and abuse and educate the population to support these measures);
- reducing the underground economy through proactive measures to support the business environment;
- increasing the quality of judicial acts (resolving in due time conflicts in administrative litigation);
- maintaining the obtaining of budgetary surplus and the full use of this surplus to invest as a permanent objective;
- effective measures to reduce inflation by creating free access on the market for local producers, while streamlining the bureaucratic authorization and advisory acts necessary for small producers to access the markets;
- ensuring a steadily rising sustainable regional GDP in line with the national and European targets set for this indicator.

Following the optimization based on the criteria presented above, the equation of the model is confirmed:

$$\lim_{n\to\infty}\prod_{i=1}^{n}\left[\sum_{i=1}^{3}(\alpha+\beta+\gamma)P_i\right] \ll \lim_{n\to\infty}\prod_{i=1}^{n}\left[\sum_{i=1}^{3}(\alpha_{opt}+\beta_{opt}+\gamma_{opt})P_i\right] \quad (7)$$

and demonstrates that, in terms of maximizing financial autonomy, the budget allocation objectives become competitive on the basis of managerial freedom degrees (H1).

The absorption of the European funds represents, from the performed analysis, a performance limiting indicator due to the low absorption rates. Applying optimization criteria allows to overcome these barriers, limiting bureaucracy and increasing the ability to manage non-reimbursable funds (H2).

It was noted that the performing public administrations (Ilfov, Cluj, Iasi) achieved these performances based on the management of internal resources. The attraction of the non-reimbursable funding can extend the performance of the second-round administrations, thus demonstrating the proposed H3 hypothesis.

The performance poles have demonstrated that, from the allocation of resources point of view, the balanced distribution of allocation leads to achieving a superior level of performance in time that can separate a leader from second-ranked administrations. The main allocation pillars are labour remuneration and goods acquisitions, the authors considering that these pillars would be applied with prioritization strategies in order to achieve the proposed objectives to the local authorities (H4, H5).

5. Conclusions

This article aims to quantify the performance of regional administrations based on good management practices in using available resources. This objective was achieved on the basis of a new statistical model elaborated by the authors, which allowed to create a ranking of regional competitiveness in Romania starting from the regional budget execution during 2005-2017.

Using this model, the classification criteria of the performance administration were separated, the profile of the optimal performance in the regional public administration was created and the criteria for optimizing the administrations of the second echelon were defined. The proposed model is based on the game theory and gives valid results after application. It is not restrictive. The model can be extended to any EU member state and creates the premises of the objective evaluation of the administrations' performance at macroeconomic level.

Thus, the model is a useful tool for all public stakeholders interested in the optimal evaluation and capability of any European space administration.

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