

**ANALYSIS OF THE STATISTICAL SITUATION OF THE
PROCUREMENT PROCEDURES IN ROMANIA**

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Abstract

In public procurement, the analysis of the main statistical indicators has a very important role. This analysis may reveal deficiencies in the ways of development of the public procurement procedures, which, following the determination of the causes that generated these deficiencies. These deficiencies may lead to the identification of measures able to improve the public procurement process, in order to obtain additional savings and implicitly in order to increase the efficiency of the use of public funds.

The analysis of the evolution of public procurement must be carried out both in the context of increased expenditure budgets, but especially in the case of:

- certain budgetary restrictions (diminished budgets);
- at the beginning of periods of economic crisis;
- during economic crises, in order to stimulate the economic environment through public procurement by treating public procurement as a factor for economic recovery.

The article describes an analysis of the statistical situation by counties of the number of contracting authorities, the number of tenderers, the number of invitations for tender published, the number of products / services published in the electronic catalogue and the number of direct purchases in Romania. These analysis refers to the period 01.04.2018 - 31.12.2018 through the Romanian Electronic Public Procurement System (SEAP) and identifies both a number of public procurement weaknesses and a number of positive aspects.

Keywords: Public Procurement, Procurement Procedure, Contracting Authority, Tenderer, Direct Procurement.

JEL classification: C46, H57, H83

Introduction

Currently, both at national and international level, governments are subject to constant public pressure in order not to waste public funds, to save money, to use them as efficiently as possible, to "do more with less".

The analysis of the evolution of public procurement is a method referred to in the research literature as spend analysis.

Research literature approached the use of the analysis of the procurement made in order to have a more comprehensive picture of the procurement process and to develop new ways and methods to run them more efficiently, to reduce costs, to balance the purchasing power of purchasers.

It should be noted that this analysis was first adopted by private companies. A survey on 147 private companies from the United States indicated that the implementation of this type of analysis had led to obtaining savings of more than \$ 13 billion in 2000 (Kearney, 2002).

Also, the analysis of the procurement made has also been used within the card-based procurement governmental program from the United States of America. Between 1994 and 2003, the value of purchases made by card increased from \$ 1 billion to \$ 16 billion, with federal agencies not demanding additional discounts from major suppliers (GAO, 2004). Currently, in the US, it is estimated that by analysing the purchases made, identifying public procurement deficiencies and obtaining additional discounts, annual savings of \$ 300 million could be obtained (Thai et al., 2009).

The statistical situation by counties of the procurement procedures carried out in Romania during the period 01.04.2018 - 31.12.2018 through the Romanian Electronic Public Procurement System (SEAP) is presented in Table 1 and was used to perform the analysis of the statistical situation by counties of the procurement procedures in Romania. These analysis is presented in the section below (www.e-licitatie.ro, Retrieved on February 12, 2019).

Table 1: The statistical situation by counties of the Romanian procurement procedures between 01.04.2018 and 31.12.2018

No.	County	Number of contracting authorities based in the county	Number of registered tenderers based in the county	Number of invitations for tenders published by contracting authorities based in the county	Number of products or services published in the electronic catalogue of tenderers based in the county	Number of direct purchases of contracting authorities based in the county
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	București-Ilfov	2,436	29,326	7,509	194,262	283,102
2	Satu Mare	350	2,075	243	10,919	35,690
3	Maramureș	436	2,808	275	9,957	28,956
4	Bistrița Năsăud	698	6,075	1,033	30,678	101,125
5	Suceava	554	3,512	458	21,360	62,359

6	Botoșani	395	1,493	342	8,559	31,541
7	Iași	770	5,034	989	28,872	71,886
8	Neamț	420	2,914	354	13,556	37,594
9	Harghita	596	2,693	374	8,595	32,849
10	Mureș	505	3,745	768	20,573	65,449
11	Cluj	698	6,075	1,033	30,678	101,125
12	Sălaj	295	1,320	296	7,444	23,562
13	Bihor	525	4,317	629	17,140	50,699
14	Arad	517	3,091	357	10,427	36,072
15	Hunedoara	379	2,822	489	13,343	47,453
16	Alba	430	2,609	392	9,320	42,333
17	Sibiu	446	3,135	937	14,169	50,726
18	Brașov	600	4,608	794	23,215	77,419
19	Covasna	266	1,624	484	5,694	31,640
20	Bacău	482	3,068	447	16,485	54,725
21	Vaslui	388	1,331	366	7,222	27,013
22	Galați	514	3,045	490	14,461	65,646
23	Vrancea	398	1,936	261	8,036	42,454
24	Tulcea	272	1,182	313	6,849	28,540
25	Brăila	380	1,800	202	6,307	29,393
26	Buzău	425	2,456	182	12,705	37,376
27	Prahova	632	1,696	581	18,953	85,724
28	Dambovița	422	2,078	300	9,135	27,874
29	Argeș	553	3,676	465	16,842	57,975
30	Valcea	399	2,196	463	11,658	29,453
31	Timiș	573	5,395	820	21,159	66,195

32	Caraş Severin	373	1,406	217	6,011	23,960
33	Mehedinţi	288	1,237	257	3,018	19,133
34	Gorj	325	1,843	851	6,516	23,412
35	Dolj	677	3,802	724	18,184	52,276
36	Olt	437	1,985	302	9,317	28,412
37	Teleorman	403	1,296	218	5,973	28,555
38	Giurgiu	255	1,011	206	4,767	15,317
39	Ialomiţa	295	1,147	158	4,836	28,115
40	Călăraşi	334	1,532	214	6,177	24,856
41	Constanţa	632	4,812	730	25,162	71,646
TOTAL (01.04.2018 – 31.12.2018)		20,773	139,206	26,523	718,534	2,079,630
Monthly average (Total/9)		-	-	2,947	79,837	231,070
Bucharest-Ilfov weight out of Total		11,73%	21,07%	28,31%	27,03%	13,61%

Source: Electronic Public Procurement System (SEAP) in Romania

Analysis of the statistical situation by counties of the procurement procedures in Romania

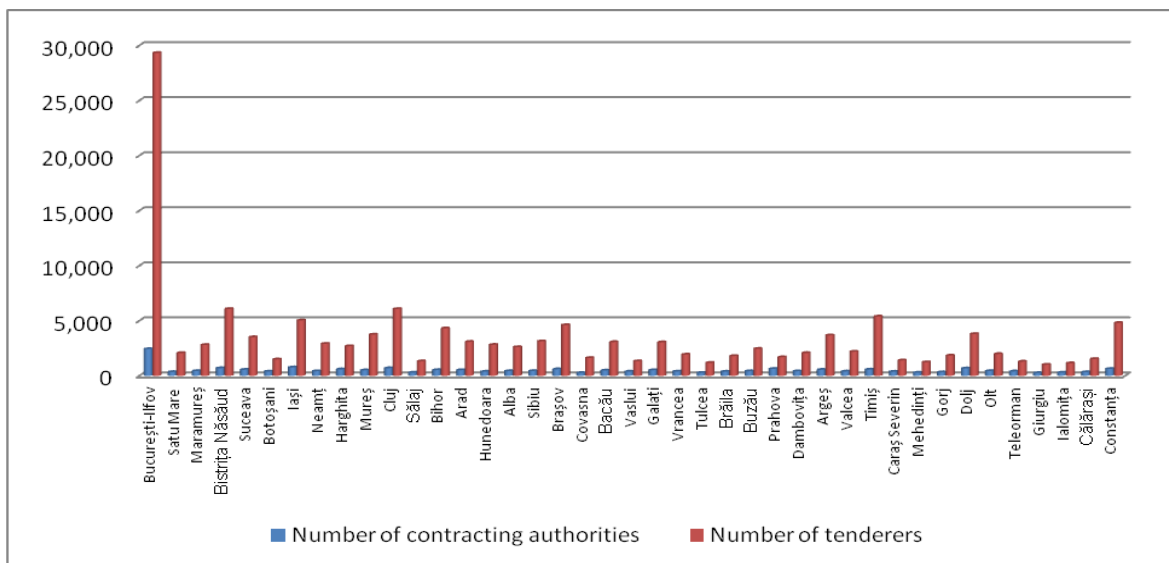
The situation presented in Table 1 covers a period of 9 months, between 01.04.2018 - 31.12.2018, because, on 01.04.2018, the National Agency for Public Procurement from Romania (ANAP) implemented at national level a new IT application called "New SEAP" that has improved the old application. In the new application, the contracting authorities were uploaded and the tenderers uploaded their products and services tendered in the Electronic Product and Services Catalogue.

Also, after that date mentioned, the procurement procedures were initiated by the contracting authorities in the new application. Practically, the new application contains all national contracting authorities, all procedures initiated after 01.04.2018 and all direct procurements made after that date.

From the data analysis (in the 9-month interval studied) it can be seen that 20,773 contracting authorities and a number of 139,206 tenderers were registered at national level.

The graphical representation by counties of the number of contracting authorities and of the number of tenderers is shown in Figure 1.

Figure 1: Graphic representation by counties of the number of contracting authorities and of the number of tenderers



Source: Based on the data in Table 1

Taking into account the fact that according to the data of the National Trade Register Office from Romania (ONRC) belonging to the Ministry of Justice, in November 2018 there were registered 921,221 active legal entities, which means that only 15% of legal entities in Romania are registered in SEAP (<https://www.onrc.ro/index.php/ro/>, Retrieved on February 22, 2019).

This weight still shows a very low interest in public procurement of a significant part of the potential tendering companies, as currently all procurements have to be carried out through SEAP. This reduced interest has the effect of low competition and inefficient spending of public funds, as no competitive prices reflecting the level of the market are obtained.

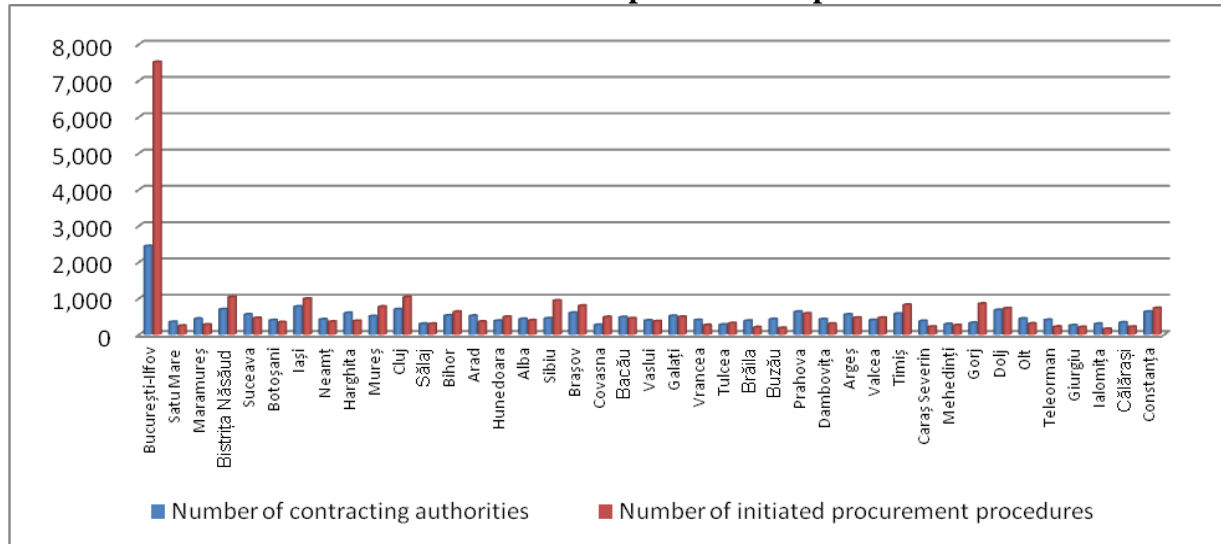
The low interest is also revealed by the fact that a number of 139,206 tenderers published in the electronic catalogue a number of 718,534 products or services, which means an average of only 5.16 products or services published in the electronic catalogue of SEAP by each tenderer.

A total of 20,773 registered contracting authorities initiated 26,523 procurement procedures, which means an average of 1.2 procedures initiated by each contracting authority within a period of 9 months. The small number of procedures initiated per contracting authority indicates the inefficiency of the use of human and material resources, the vast majority of authorities only making direct procurements, not award procedures. These data highlight the need to regionalize

and reduce the number of contracting authorities, so that public procurement departments carry out as many procurement procedures as possible.

The graphical representation by counties of the number of contracting authorities and the number of initiated procurement procedures is shown in Figure 2.

Figure 2: Graphic representation by counties of the number of contracting authorities and of the number of initiated procurement procedures



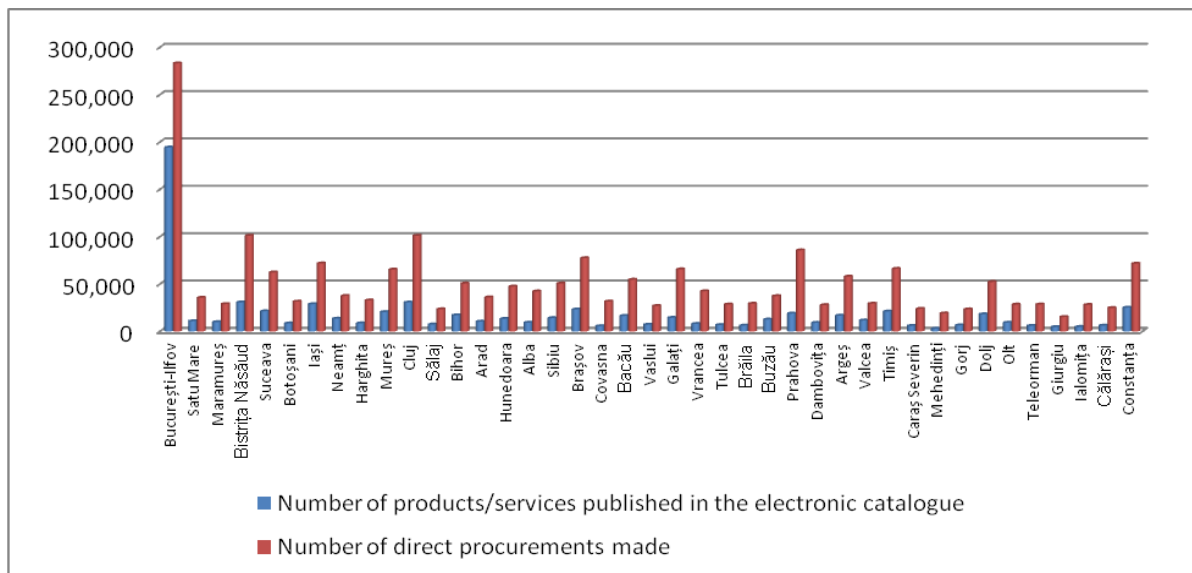
Source: Based on the data in Table 1

Currently, there are many European Union states and not only, where localities that have a budget under a certain value or where a number of inhabitants live below a set threshold cannot carry out public procurement because budget expenditures related to the operation of the internal department of public procurement are too high.

During the analysed period, a number of 2,779,630 direct procurements were made subject to the publication of a number of 718,534 products / services in the electronic catalogue, indicating that on average there were 2.9 direct purchases for each product / service published in the catalogue. These data reveal a very good efficiency of using the number of available positions in the electronic catalogue of the tendering companies.

The graphical representation by counties of the number of products / services published in the electronic catalogue and the number of direct procurements made is shown in Figure 3.

Figure 3: Graphical representation by counties of the number of products / services published in the electronic catalogue and the number of direct procurements made



Source: Based on the data in Table 1

It should be noted that contracting authorities do not pay any tax or fee for the use of SEAP, as the tendering companies pay a fee directly proportional to the number of positions available in the electronic catalogue.

The analysis of the presented situation shows the Bucharest-Ilfov area, which comprises 11.73% of the existing contracting authorities at national level, 21.07% of the tenderers, and where 28.31% of the award procedures were initiated, 27.03% of the products and services from the electronic catalogue were published and 13.61% of direct procurements at national level were performed. The large weight of the initiated award procedures and the low weight of direct procurements reveals that there are fewer direct procurements and more award procedures in the Bucharest-Ilfov area than in the rest of the country. This situation is due to the fact that in the Bucharest-Ilfov area there are the ministries or central government agencies that carry out procurement procedures which have the county structures as beneficiaries.

Analysing the above situation, we try to determine whether the number of products published in the electronic catalogue depends more on the number of contracting authorities or on the number of tenderers.

We verify whether there is a relationship between column 6 from Table 1 - the number of products / services published in the catalogue (y) and column 3 from Table 1 - the number of

contracting authorities (x), performing a linear unifactorial regression the results of which are presented in Table 2.

Table 2: Results of the linear unifactorial regression (y - number of products / services published in the catalogue, x - number of contracting authorities)

<i>Regression Statistics</i>								
Multiple R	0.97786971							
R Square	0.95622916							
Adjusted R Square	0.95510683							
Standard Error	6195.3368							
Observations	41							

<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	32701792690	32701792690	852.004168	4.1301E-28
Residual	39	1496905723	38382198.02		
Total	40	34198698413			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95,0%</i>	<i>Upper 95,0%</i>
Intercept	-25643.5235	1767.31277	-14.5098954	2.6316E-17	-29218.2509	-22068.796	-29218.251	-22068.796
X Variable 1	85.2028336	2.918993841	29.18911044	4.1301E-28	79.2986113	91.107056	79.2986113	91.10705587

Source: Based on the data in Table 1

We also verify whether there is a relationship between column 6 from Table 1 - the number of products / services published in the catalogue (y) and column 4 from Table 1 - the number of tenderers (x), performing a linear unifactorial regression the results of which are presented in Table 3.

Table 3: Results of the linear unifactorial regression (y - number of products / services published in the catalogue, x - number of tenderers)

<i>Regression Statistics</i>	
Multiple R	0.99186551
R Square	0.9837972

Adjusted R Square	0.98338174
Standard Error	3769.35968
Observations	41

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	33644583589	3.3645E+10	2367.99072	1.56317E-36
Residual	39	554114824	14208072.4		
Total	40	34198698413			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95,0%</i>	<i>Upper 95,0%</i>
Intercept	-4979.8377	748.614261	-6.6520743	6.4597E-08	-6494.05296	-3465.62245	-6494.053	-3465.62245
X Variable 1	6.62835902	0.136212206	48.6620049	1.5632E-36	6.352843833	6.903874212	6.35284383	6.903874212

Source: Based on the data in Table 1

The coefficient of the independent variable is 85.20 in the first linear unifactorial regression (Table 2) and 6.62 in the second linear unifactorial regression (Table 3), which means that for each contracting authority registering in the SEAP the number of products published in the catalogue increases by 85.20, and for each tenderer registering in the SEAP the number of products published in the catalogue increases by 6.62.

The correlation ratio R is 0.9778 if the number of contracting authorities is the independent variable and 0.9918 if the number of tenderers is the independent variable. In both cases it is found that the links are strong.

The coefficient (degree) of determination R^2 is 0.9562 in the first case and 0.9837 in the second case, meaning that 95.62% of the variation in the number of products published in the catalogue is explained by the increase in the number of contracting authorities and that 98.37% of the variation in the number of products published in the catalogue is explained by the increase in the number of tenderers registered in SEAP.

The mean square error deviation is 6,195.33 in the first case and 3,769.35 in the second case.

Thus, after analysing the results of the two regressions, significant strong links can be established both between the number of contracting authorities and the number of tenders published in the

catalogue as well as between the number of tenderers and the number of tenders published in the catalogue. Also, the number of products published in the catalogue increases faster with the increase of the number of contracting authorities than with the increase of the number of tenderers, the regression model in which the number of tenderers is the independent variable being closer to reality than the regression model in which the number of contracting authorities is the independent variable.

Analysing the above situation, we can try to determine if there is a link between the number of direct purchases - column 7 from Table 1 (y - dependent variable), the number of contracting authorities - column 3 from Table 1 (x₁ - independent variable) and the number of tenderers - column 4 from Table 1 (x₂ - independent variable). The results of linear multifactorial regression are presented in Table 4.

Table 4: Results of the linear multifactorial regression (y - number of direct purchases / services published in the catalogue, x₁ - number of contracting authorities, x₂ - number of tenderers)

<i>Regression Statistics</i>	
Multiple R	0.96312861
R Square	0.92761673
Adjusted R Square	0.92380708
Standard Error	11901.3704
Observations	41

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	2	68977568235	34488784118	243.49158	2.1534E-22
Residual	38	5382419426	141642616.5		
Total	40	74359987661			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95,0%</i>	<i>Upper 95,0%</i>
Intercept	-2187.42752	7155.686276	0.305690808	0.7615085	16673.3569	12298.5019	-16673.3569	12298.5019
X Variable 1	83.3604323	26.80016554	3.110444681	0.0035348	29.1063341	137.614531	29.1063341	137.614531
X Variable 2	3.14403307	2.055500865	1.529570296	0.1344059	1.01711085	7.30517699	-1.01711085	7.30517699

Source: Based on the data in Table 1

As it can be seen, the free term (intercept, residual variable) has the value - 2187.42.

The coefficient of the independent variable x_1 is 83.36, which means that if the number of contracting authorities registered in SEAP increases by 1, the number of direct purchases increases by 83.36.

The coefficient of the independent variable x_2 is 3.14, namely for each additional tenderer registered in SEAP, the number of direct purchases increases by 3.14.

The correlation ratio $R = 0.9631$ shows a significant strong link.

The coefficient (degree) of determination $R^2 = 0.9276$ shows that 92.76% of the change in the number of direct purchases is explained by the two independent variables.

The mean square deviation of errors in the sample is 11,901.37.

As a result of the above, it can be argued that there is a strong, significant link between the number of contracting authorities, the number of tenderers and the number of direct purchases made.

In order to remedy the identified deficiencies, it is necessary to implement measures that will lead to:

- the increase in the interest of the companies for public procurement, which will materialize in the increase of the number of tenderers submitting tenders in the electronic catalogue of SEAP;
- the initiation of an objective analysis at national level of the justification of the existence of existing contracting authorities in terms of the efficiency of using public funds to determine whether regionalization can be a solution in the current economic context.

Conclusions

The article describes an analysis of the statistical situation by counties of the procurement procedures in Romania during 01.04.2018 - 31.12.2018 through the Electronic Public Procurement System from Romania (SEAP).

The analysis of the statistical situation resulted in the following deficiencies:

- a weight of only 15% of legal entities in Romania is registered in SEAP, which leads to reduced competition and implicitly to the inefficient spending of public funds;
- the average number of products / services published in the SEAP electronic catalogue by each tenderer was of only 5.16, which reveals a low interest of the tenderers;

- in the analysed period, each contracting authority initiated, on average, 1.2 procurement procedures, which highlights the need for regionalization and a reduction in the number of contracting authorities, as currently the vast majority of authorities only carry out direct procurements.

The analysis also resulted in a positive aspect: for each product / service published in the electronic catalogue, an average of 2.9 direct procurements were made, which reveals a very good efficiency of using the number of positions available in the electronic catalogue of tendering companies.

The analysis also showed that on the one hand there are strong, significant links both between the number of contracting authorities and the number of tenders published in the electronic catalogue as well as between the number of tenderers and the number of tenders published in the electronic catalogue and on the other hand there is a strong, significant link between the number of contracting authorities, the number of tenderers and the number of direct purchases made.

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