

A Dynamic Analysis of Economic and Financial Efficiency, Correlated with the Dimension of the Human Resources Used by Companies from the Rural Area of Constanta County, Romania

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Abstract

This paper presents a dynamic analysis, based on two economic and financial indicators: the value added and the average number of employees registered and reported during 2016 and 2017 by the companies operating in ten rural localities selected from Constanta County.

The study is based on a quantitative research in which quantitative information, represented by the absolute values of the two above-mentioned indicators, was used, and the interpretation of the results can be considered a useful information database for decision-making concerning the activity, both at the micro and meso-economic level. One may say that value added expresses, much better than any other indicator, the effectiveness of combining capital and labor production factors.

The specificity of this study is that interesting aspects have been brought to attention regarding the contribution of each selected rural locality to the economy of Constanta County, their hierarchy and the particularities of the economic activity presented in the evolution of the two indicators over the analyzed period.

Key words: efficiency, companies, rural area, value added, number of employees

J.E.L. classification: C10, C40, E24, J21, L11, L25, M10, M21, O11, O12

1. Introduction

Constanta County is located in the south-eastern part of Romania, it occupies an area of 7,071 km², which represents 3% of the total area of the country and is the eighth county, by size, among the counties of the country. The administrative-territorial organization of Constanta County, on December 31 2017, was the following: 9 cities and 3 municipalities, 58 communes and 189 villages. (County Statistics Directorate Constanta, 2018). The statistical data show that in 2018 this county ranked second, in terms of GDP (EUR 9.58 billion), after Bucharest (EUR 49.15 billion), followed by Cluj (9.22 billion euros) and Prahova (9.0 billion euros). The economic activity of Constanta County reflects the results registered by the companies operating in the urban and rural localities from its administrative-territorial structure.

2. Theoretical background

Value added is an indicator of the volume of activity, a reference concept in the economic and financial analysis and it plays an important role for the decision-making structures at the company level.

Value added is part of the performance indicator system that measures resource consumption against the results achieved after the end of the production process and compares them with the levels set out in the objectives. (Matiş D. *et al*, 2007).

As Peyrard points out (Peyrard J., 1999), the concept of value added is "more significant than turnover; the turnover of an enterprise aggregates all upstream turnover, while value added reveals exactly the role of the enterprise"¹. In the diagnostic analysis, the value added indicator is meant to highlight the economic and financial performance of the enterprise and the efficiency of production factors' use.

3. Research methodology

The study presented in this paper is a quantitative research (Jugănaru, M., 1998), which used the system of absolute, relative and mean indicators of chronological series (Aivaz, K., 2007 a,p.329 ; Aivaz, K., 2007 b,99) Moreover, the SPSS software program was used for information systematization and statistical indicators calculation (Field, A. 2009).

The database is represented by the information recorded in the balance sheets of 26,978 companies in 2016 and 28,292 companies in 2017 (Constanta Chamber of Commerce, Industry, Shipping and Agriculture, 2017 and 2018 ; Ministry of Public Finance). From the initial database, the companies that reported zero turnover and declared a number of zero employees were excluded so that the results could be factual. Thus, 11,186 companies (year 2016) and 11,945 companies (year 2017) remained in the study.

4. Data, results and discussion

The study was limited to ten rural localities, considered to be the largest according to the number of operating companies, and the processed data refer to the following economic and financial indicators: the value added and the average number of employees, for the 2016-2017 period. We stress that, in the administrative-territorial organization of the county, Lazu locality is a village in the structure of Agigea commune, and Schitu is a village in the structure of Costinesti commune. In the database used, the annual balance sheets of the companies are recorded separately, by communes and villages, which is why we have followed this particular method of presentation in our study. We have also kept the presentation of the localities in alphabetical order, but the interpretation of the results was realized according to their hierarchy in terms of the number of companies.

At the database processing stage, a statistical description of the value added and the average number of employees was made using the following statistical indicators: the average level (Mean), the number of companies (N), the aggregate value of the financial indicators (Sum), the lowest value of the analyzed financial indicator (Minimum), respectively the highest (Maximum), amplitude variation (Range), the structure of the financial indicator - value added (% of Total Sum) and the structure of the number of firms (% of Total N). The results obtained for the ten selected rural localities over the two analyzed years (2016 and 2017) are presented in the table below.

Table no.1. The statistical description of "value added" and "average number of employees" in ten rural localities of Constanta County in the 2016-2017 period

2016				2017		
Locality		Value added	Average number of employees		Value added	Average number of employees
Agigea	Mean	574247.54	10.63	Mean	696487.74	10.15
	N	202	202	N	197	197
	Minimum	-6803596	1	Minimum	-9302907	1
	Maximum	35083241	419	Maximum	50091387	419
	Range	41886837	418	Range	59394294	418
	Sum	115998004	2147	Sum	137208084	1999

	% of Total Sum	1.4%	1.6%	% of Total Sum	1.5%	1.5%
	% of Total N	1.1%	1.1%	% of Total N	1.0%	1.0%
Cobadin	Mean	240101.05	4.00	Mean	273321.44	3.63
	N	107	107	N	103	103
	Sum	25690812	428	Sum	28152108	374
	% of Total Sum	.3%	.3%	% of Total Sum	.3%	.3%
	% of Total N	.6%	.6%	% of Total N	.5%	.5%
Cumpana	Mean	185185.26	4.69	Mean	205772.50	4.39
	N	224	224	N	266	266
	Sum	41481499	1050	Sum	54735486	1167
	% of Total Sum	.5%	.8%	% of Total Sum	.6%	.9%
	% of Total N	1.2%	1.2%	% of Total N	1.3%	1.3%
Lazu	Mean	210712.59	4.14	Mean	215180.87	3.61
	N	71	71	N	77	77
	Sum	14960594	294	Sum	16568927	278
	% of Total Sum	.2%	.2%	% of Total Sum	.2%	.2%
	% of Total N	.4%	.4%	% of Total N	.4%	.4%
Limanu	Mean	428458.43	10.96	Mean	244318.58	8.41
	N	67	67	N	71	71
	Sum	28706715	734	Sum	17346619	597
	% of Total Sum	.3%	.5%	% of Total Sum	.2%	.4%
	% of Total N	.4%	.4%	% of Total N	.4%	.4%
Lumina	Mean	234509.33	5.95	Mean	284857.46	5.88
	N	192	192	N	201	201
	Sum	45025792	1143	Sum	57256349	1181
	% of Total Sum	.5%	.8%	% of Total Sum	.6%	.9%
	% of Total N	1.0%	1.0%	% of Total N	1.0%	1.0%
Mihail Kogalniceanu	Mean	307999.70	6.37	Mean	347773.20	6.21
	N	193	193	N	188	188
	Sum	59443943	1229	Sum	65381362	1168
	% of Total Sum	.7%	.9%	% of Total Sum	.7%	.9%

	% of Total N	1.0%	1.0%	% of Total N	.9%	.9%
Schitu	Mean	367934.67	7.07	Mean	375051.39	7.46
	N	73	73	N	87	87
	Sum	26859231	516	Sum	32629471	649
	% of Total Sum	.3%	.4%	% of Total Sum	.4%	.5%
	% of Total N	.4%	.4%	% of Total N	.4%	.4%
Tuzla	Mean	260451.86	4.75	Mean	246525.71	4.23
	N	100	100	N	112	112
	Sum	26045186	475	Sum	27610879	474
	% of Total Sum	.3%	.3%	% of Total Sum	.3%	.4%
	% of Total N	.5%	.5%	% of Total N	.6%	.6%
Valu lui Traian	Mean	162832.50	3.40	Mean	192140.18	3.31
	N	297	297	N	327	327
	Sum	48361253	1009	Sum	62829839	1082
	% of Total Sum	.6%	.7%	% of Total Sum	.7%	.8%
	% of Total N	1.6%	1.6%	% of Total N	1.6%	1.6%

Source: Data obtained by processing the information from the financial and accounting balance sheets of active companies in Constanta County

1. Valu lui Traian Commune is the rural locality with the largest number of companies: 297 in 2016 and 327 in 2017. The analysis of the evolution of the two selected indicators for this study shows the positive trend of economic activity of this commune. Thus, value added increased, in absolute terms, from 48,361,253 lei in 2016, to 62,829,839 lei in 2017; in terms of mean value, the increase was from 162,832, 50 lei in 2016, to 192,140,18 lei in 2017, and the share (in the total value added recorded in Constanta county) increased from 0.6% in 2016 to 0.7% in 2017. The number of employees indicator shows, on the one hand, an increase in absolute value: from 1,009 employees in 2016, to 1,082 employees in 2017, but also in share (at county level) from 0.7% to 0, 8% (over the analyzed period) and, on the other hand, a slight decrease in the average number of employees: from 3.4 in 2016 to 3.31 in 2017.

2. Cumpăna Commune is ranked second on the list, with a small difference in the number of companies, compared to Valu lui Traian. Moreover, one can see that the two communes had a similar evolution of the indicators. In Cumpăna, in absolute terms, value added increased from 41,481,499 lei in 2016 to 54,735,486 lei in 2017; the increase for the mean value was from 185,185.26 lei in 2016, to 205,772.50 lei in 2017, and the share in the total value added registered at the level of Constanta county increased from 0.5% in 2016 to 0,6% in 2017. The total number of employees increased from 1,050 in 2016 to 1,167 in 2017, which represents an increase (in terms of share) from 0.8% to 0.9% over the 2016-2017 period, but a decrease, in terms of mean value, from 4.69 in 2016 to 4.39 employees in 2017.

3. In Agigea Commune, as the total number of companies decreased from 202 in 2016 to 197 in 2017, increases were registered at the total value added level: from 115,998,004 lei in 2016 to 137,208,084 in 2017, but also the mean level: from 574,247.54 lei in 2016 to 696,487.74 lei in 2017. Furthermore, the share held by the value added in Agigea Commune increased from 1,4% to 1.5% between 2016 and 2017. The number of employees decreased in absolute terms (from 2,147

in 2016 to 1,999 employees in 2017), mean value (from 10.63, in 2016, to 10.15 employees in 2017) and share (from 1.6% to 1.5%).

4. Mihail Kogălniceanu Commune's evolution in connection with the analyzed indicators is similar to that of Agigea commune, in the sense that there were increases in value added and decreases in the number of employees, in the context of the declining total number of companies, from 193 in 2016 to 188 in 2017. Even if the total value added level increased from 59,443,943 lei in 2016 to 65,381,362 lei in 2017, the share in the total value added registered at the level of Constanta County remained the same, 0.7%. On average, the value added was 307,999.70 lei in 2016, increasing to 347,773.20 lei in 2017. The total number of employees decreased from 1,229 to 1,168 employees over the 2016-2017 period and in terms of mean value, the reduction was from 6.37 to 6.21 employees.

5. In Lumina Commune one may find that there has been a small increase in the total number of companies from 192 in 2016 to 201 in 2017, accompanied by an increase value of the value added indicator. Thus, from a total value of 45,025,792 lei, the value added in 2016 got to 57,256,349 lei in 2017. This evolution has generated a share increase (the value added created in Lumina Commune in the value added total recorded in the county of Constanta), from 0.5% to 0.6%. In addition, the mean level increased from 234,509.33 lei to 284,857.46 lei over the analyzed period. The number of employees decreased from 266 to 261 over the 2016-2017 period, respectively, from an average of 5.95 employees to 5.88 employees. However, the share of the number of employees of the companies of Lumina commune in the total number of employees in Constanta County increased from 0, 8% in 2016 to 0, 9% in 2017.

6. In Cobadin Commune there was a positive evolution of the value added indicator. Thus, from a total level of 25,690,812 lei in 2016, it increased to 28,152,108 lei in 2017, and in terms of mean level the increase was from 240,101.05 lei to 273,321.44 lei, over the same period. In terms of share of the value added in Cobadin, in relation to the total value in Constanta County, one can see that it remained at 0.5% level, over the 2016-2017 period. The reduction in the number of companies in this commune, from 107 to 103, was accompanied by a reduction in the total number of employees (from 428 to 374) and the average number of employees (from 4 to 3.63) between 2016 and 2017.

7. Tuzla Commune also recorded a positive trend. If 297 companies were operating in 2016, in 2017 327 were in operation; from a total value added of 48,361,253 lei in 2016, the value added reached 62,829,839 lei in 2017, and the mean level increased from 162,832.50 lei to 192,140.18 lei. In terms of share, the increase in value added was from 0.6% in 2016 to 0.7% in 2017. At the same time, an increase was registered in the total number of employees of the companies operating in Tuzla, from 1,009 to 1,082, as well as their share (in the total number of employees of the companies in Constanta County), from 0.7% in 2016 to 0.8% in 2017. The average number of employees registered a small decrease, from 3.4 in 2016 to 3.31 employees in 2017.

8. Schitu Village is notable for increasing the values of the analyzed indicators in all forms of computing / expression. In terms of absolute value, the following increased: value added from 26,859,231 lei in 2016 to 32,629,471 lei in 2017; total number of employees, from 516 to 649, as well as the number of companies, from 73 to 87, over the 2016-2017 period. The share in the total value added in Constanta County increased from 0.3% to 0.4% and the share (in the total number of county employees) increased from 0.4% to 0.5% in the analyzed period. The average number of employees increased from 7.07 in 2016 to 7.46 employees in 2017.

9. In Lazu Village the value added indicator registered an increase from 14,960,594 lei, total level, in 2016 to 16,568,927 lei in 2017, and the mean value was 210,712.59 lei in 2016 and it increased to 215,180, 87 lei in 2017. The share of value added achieved in Lazu village, in the total value added realized in Constanta County, remained unchanged (0.2%), over the analyzed period. One can see that the number of companies increased from 71 in 2016 to 77 in 2017, but the total number of employees decreased from 294 to 278, and the average number of employees from 4.14 to 3.61 in the above-mentioned period.

10. Limanu Commune stands out as a result of the negative evolution recorded during the analyzed period. Even though the number of companies in this rural locality grew from 67 in 2016 to 71 in 2017, the other indicators decreased significantly. Thus, the value added indicator, in absolute value, decreased from the total level of 28,706,715 lei in 2016 to 17,346,619 lei in 2017;

the average level decreased from 428,458.43 lei to 244,318.58 lei, and the share from 0.3% to 0.2% over the 2016-2017 period. Moreover, the employee number indicator decreased from a total level of 734 in 2016 to 597 in 2017, the average from 10.96 in 2016 to 8.41 in 2017 and also the share, from 0.55% to 0.4%.

5. Conclusions

Over the analyzed period, for the ten rural localities analyzed, it can be said that they have registered a positive economic evolution and no significant changes have occurred regarding their contribution / participation rate to the results obtained at the level of Constanta County. If, in 2016, their participation rate was 5.1% (of the total level of the value added indicator in Constanta County), in 2017 it increased to 5.5%.

The ten rural localities analyzed accounted for 8.2% of the total number of active companies in operation in the county in 2016 and 8% in 2017, and they accounted for 6.5% of the total number of employees registered in all the localities of Constanta County in 2016 and 6.8% in 2017.

From the hierarchy analysis, two communes have drawn our attention. Thus, on the one hand, Valu lui Traian Commune, which ranked first, has the largest number of companies of all the rural localities in Constanta County. However, from the data presented, one may find that this commune is not notable (as we could expect, due to this aspect) for any special contributions, at the level of the county, in terms of its share in the total volume of value added (0,6% in 2016 and 0,7% in 2017) and the total number of employees in the county (0,7% in 2016 and 0,8% in 2016). On the other hand, Agigea Commune, which ranks third, has the highest contribution (of all rural localities) to the value added indicator at the level of Constanta County, i.e. 1.4% in 2016 and 1.5% in 2017. It is worth mentioning that, when considering these contribution rates, we must also take into account the rates recorded by Lazu Village, which is part of Agigea Commune, but which, in our analysis, is presented separately.

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