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Abstract: Starting from the idea that the use of multi-criteria analysis of performance within the hospital system allows a more accurate validation of employment, compared to the current methodology and seeking correlations between scores practiced economic efficiency and technical competence for all hospitals analyzed we see that there is a correlation between these values which suggests that hospital management's performance is a delusion because subordanarea different and multiple units of the health system vis-à-vis how separate assessment of skills and management capabilities make it virtually impossible able to generate management solutions.
The aim of our research is to demonstrate that in any normal system, and therefore in the health, environmental factors acting in a correlate between them.

Keywords : analysis, correlation, scores, hospitals coefficients

JEL classification : C14, C15, I15, M410

1. Introduction

Ensuring performance was spread as a necessity for all organizations in the explosion technique that is becoming more sophisticated, higher costs, developing markets. Regarding health care facilities that provide health care, people's expectations linked to the life and welfare are important factors that contribute to the same trend. In parallel, improving the standard of reference for performance management and ensuring the performance, health, and their understanding in terms of services, facilitate their application.

Analyzing content management performance indicators Romanian hospital, we note that in addition to the benefits that they represent, presents a number of shortcomings, on the one hand, there is a distinction between the quality of care itself and how it is managed resource material through which services are provided, on the other hand, does not cover the whole area outlining the performance of the hospital

In order to complete information and analyzes conducted to characterize the current state of development of the national health system mainly based on statistical documentation reference, we started from the idea that the use of multi-criteria analysis of performance within the hospital system allows validation May work carried out correctly, compared with the current methodology practiced.

2. Analysis of the quality of medical correlation with economic and financial management quality using correlation coefficients based on nonparametric data

Multi-criteria methods allow comparative analysis both general and particular cases analysis or comparisons between units of the same type, or comparisons between levels of competence.

To demonstrate that environmental factors act in a correlate between them, I submitted to evaluations of the last three years, posted on the net in various ways: activity report, strategic plan, management plan, performance indicators etc. and I've worked in spiritual Order 286A / 28.03.2012 amending the Public Health Ministerial Order no.112 / 2007, achieving rates of performance indicators.

Subject to statistical Series observation consists of 32 medical units with the following profile: county hospitals, hospitals lung disease, psychiatric hospitals, municipal hospitals, municipal hospitals, university hospitals and private hospitals.

Theory and practice confirms that states, multi-criteria analysis methods to classify subjects more rigorous than the group performed after simple quantitative criteria used for this purpose.

To demonstrate the possibility of classifying medical units under study, we proceeded to the adjustment of the achievement of management performance indicators, scores on a scale from 0-11.

Data collected and processed in a Excel sheet have been translated and transformed into performance scores and total score obtained after descending ordered (table no.1)

For classification derived find that best stands county emergency hospi-

Denumire spital	Scorul indicatorilor de performanţă																	Total Scor
	A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4	C5	D1	D2	D3	D4	
Spitalul judeţean Reşiţa	10.0	10.0	10.0	10.0	10.0	9.0	10.0	10.0	10.0	10.0	9.0	10.0	10.0	8.0	10.0	10.0	10.0	166.0
Spitalul judeţean Piatra Neamţ	10.0	10.0	10.0	10.0	9.0	9.0	10.0	10.0	9.0	10.0	6.0	10.0	9.0	11.0	10.0	10.0	10.0	163.0
Spitalul judeţean Suceava	10.0	10.0	10.0	10.0	8.0	9.0	10.0	10.0	9.0	10.0	7.0	8.0	8.0	11.0	10.0	8.0	10.0	158.0
Spitalul judeţean Alba Iulia	10.0	10.0	10.0	9.0	9.0	3.0	8.0	9.0	10.0	10.0	6.0	7.0	9.0	1.0	9.0	10.0	10.0	140.0
Spitalul orăşenesc Rovinari	10.0	8.0	9.0	4.0	9.0	10.0	5.0	5.0	10.0	10.0	9.0	10.0	9.0	11.0	10.0	8.0	0.0	137.0
Spitalul judeţean Brăila	5.0	9.0	10.0	8.0	9.0	0.0	5.0	10.0	10.0	0.0	10.0	10.0	10.0	4.0	10.0	10.0	10.0	130.0
Spitalul Filişanilor din Filiaş	9.0	9.0	9.0	10.0	8.0	9.0	5.0	10.0	0.0	10.0	8.0	0.0	7.0	8.0	7.0	10.0	10.0	129.0
Spitalul clinic de urgenţă Iaşi	9.0	10.0	10.0	10.0	9.0	9.0	8.0	10.0	0.0	5.0	0.0	10.0	6.0	0.0	9.0	10.0	10.0	125.0
Spitalul Municipal Târnăveni	10.0	10.0	8.0	8.0	0.0	9.0	9.0	5.0	0.0	10.0	8.0	8.0	10.0	8.0	10.0	10.0	0.0	123.0
Spitalul de Psihiatrie Galaţi	8.0	9.0	9.0	10.0	9.0	0.0	0.0	0.0	10.0	9.0	9.0	10.0	0.0	5.0	9.0	9.0	8.0	114.0
Spitalul de Pneumoftziologie Dobriţa	10.0	10.0	10.0	10.0	0.0	0.0	10.0	0.0	9.0	10.0	10.0	9.0	7.0	8.0	0.0	9.0	0.0	112.0
Spitalul judeţean Dr.T.Severin	8.0	9.0	9.0	1.0	0.0	9.0	8.0	9.0	0.0	10.0	10.0	9.0	9.0	0.0	0.0	10.0	10.0	111.0
Spitalul general Căi ferate Simeria	9.0	10.0	10.0	10.0	8.0	9.0	0.0	10.0	0.0	10.0	0.0	10.0	8.0	5.0	0.0	10.0	0.0	109.0
Spitalul clinic Cluj-Napoca	10.0	10.0	10.0	3.0	9.0	0.0	0.0	9.0	8.0	10.0	0.0	3.0	0.0	10.0	7.0	8.0	10.0	107.0
Spitalul de Psihiatrie Nucet	8.0	9.0	9.0	8.0	0.0	0.0	0.0	0.0	10.0	8.0	10.0	10.0	10.0	0.0	10.0	10.0	0.0	102.0
Spitalul judeţean Tg.Jiu	10	10.0	10.0	9.0	10.0	0.0	9.0	9.0	10.0	4.0	0.0	0.0	0.0	0.0	4.0	9.0	8.0	102.0
Spitalul orăşenesc Videle	9.0	9.0	10.0	0.0	0.0	0.0	9.0	10.0	10.0	10.0	8.0	6.0	10.0	0.0	0.0	9.0	0.0	100.0
Spitalul Sf.Luca Bucureşti	9.0	9.0	10.0	8.0	9.0	10.0	6.0	0.0	0.0	9.0	7.0	0.0	10.0	1.0	0.0	10.0	0.0	98.0

Denumire spital	Scorul indicatorilor de performanţă																	Total Scor
	A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4	C5	D1	D2	D3	D4	
Spitalul privat ISIS Constanța	9.0	9.0	9.0	9.0	10.0	6.0	5.0	6.0	10.0	10.0	0.0	0.0	10.0	1.0	0.0	3.0	0.0	97.0
Spitalul clinic Căi Ferate Witting Bucureşti	10.0	10.0	10.0	9.0	0.0	10.0	9.0	9.0	10.0	7.0	0.0	0.0	0.0	2.0	0.0	9.0	0.0	95.0
Spitalul Universitar Carol Davila Bucureşti	10.0	10.0	9.0	10.0	10.0	9.0	0.0	10.0	0.0	10.0	6.0	0.0	0.0	0.0	0.0	9.0	0.0	93.0
Spitalul Municipal Paşcani	10.0	10.0	10.0	8.0	0.0	0.0	6.0	0.0	0.0	8.0	0.0	10.0	10.0	9.0	0.0	10.0	0.0	91.0
Spitalul de Pneumoftziologie Leamna	10.0	9.0	10.0	0.0	9.0	0.0	0.0	0.0	10.0	10.0	10.0	1.0	10.0	1.0	0.0	9.0	0.0	89.0
Spitalul Bethesda Suceava	3.0	4.0	10.0	10.0	0.0	0.0	8.0	9.0	0.0	10.0	7.0	8.0	9.0	0.0	0.0	10.0	0.0	88.0
Spitalul Municipal Urziceni	10.0	9.0	10.0	7.0	10.0	8.0	8.0	10.0	7.0	0.0	0.0	0.0	0.0	0.0	0.0	9.0	0.0	88.0
Spitalul de Psihiatrie Roman	10.0	10.0	9.0	0.0	10.0	10.0	0.0	0.0	9.0	1.0	8.0	0.0	0.0	8.0	0.0	10.0	0.0	85.0
Spitalul de Psihiatrie Murgeni	10.0	10.0	10.0	10.0	9.0	0.0	0.0	0.0	10.0	0.0	7.0	0.0	0.0	0.0	0.0	10.0	0.0	76.0
Spitalul de Psihiatrie Schitu Greci, jud. Olt	7.0	9.0	7.0	0.0	8.0	0.0	0.0	0.0	10.0	7.0	0.0	0.0	10.0	0.0	0.0	9.0	0.0	67.0
Spitalul Sângiorgiu de Pădure	5.0	8.0	7.0	3.0	10.0	0.0	0.0	0.0	0.0	0.0	9.0	0.0	4.0	11.0	0.0	10.0	0.0	67.0
Sanatoriul de Neuropsihiatrie Podriga, Botoşani	10.0	7.0	7.0	0.0	8.0	10.0	0.0	0.0	0.0	3.0	0.0	2.0	10.0	1.0	0.0	8.0	0.0	66.0
Sanatoriul de nevroze Predeal	10.0	10.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	10.0	10.0	55.0
Spitalul orăş. Sânicolaul Mare	4.0	7.0	3.0	5.0	0.0	0.0	3.0	3.0	0.0	1.0	0.0	10.0	0.0	0.0	0.0	6.0	0.0	42.0

Source: author belongs

Tabelul nr.2.13. *Tabloul scorurilor*

With the following specification:

A. Indicators of human resource managemnt A1. The proportion of the total staff doctors A2. The proportion of medical staff in total staff A3. The proportion of highly educated medical staff in total medical staff A4. Average number of visits per physician / outpatient **B.Indicatori of Service** B1. Average length of stay in hospital and each department B2. Utilization and hospital beds on each section B3. Index of complexity of cases on hospital B4. The proportion of patients with surgery and for each section	**C. Financial ratios** C1. Implementation of the budget to the approved budget C2. Percentage of total revenues own revenues hospital C3. The share of personnel expenses in total expenditure 4. Average Percentage of expenditure in total expenditure-camentele C5. Average cost / day of hospitalization for each section **D. Quality Indicators** D1. Hospital mortality rate D2. The rate of nosocomial infections in hospital and total for each section D3. The concordance index of diagnosis D4. Number of complaints analyzed and solved

tals and psychiatric hospitals worst given the lack of specific indicators that contribute to the overall score composition (eg number of consultations / doctor-patient) and hospitals small town.

To analyze the correlation between the medical and quality of economic and financial management using Microsoft Excel, we proceeded to pool the data from Table nno.1. eight categories of competence hospitals, namely:

- clinical hospitals (5);
- hospitals pneumoftziologie (2);
- psychiatric hospitals (neuropsychiatry and sanatorium of neurosis) (7);
- county hospitals (7);
- municipal hospitals (3);
- municipal hospitals (5);
- university hospitals (1);
- private hospitals (2).

Data from IBM SPSS statistical processing using 18.0, shown in Table 2 shows the distribution of average values of economic scores on each level of competence hospitals were grouped as above.

Nivel de competenţă	N	Min.	Max.	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference	
VAR00001	5	17,00	28,00	22,6000	4,39318	1,96469	Lower	Upper
VAR00002	2	41,00	45,00	43,0000	2,82843	2,00000	17,1452	28,0548
VAR00003	7	5,00	48,00	24,0000	14,76482	5,58058	17,5876	68,4124
VAR00004	7	14,00	49,00	38,4286	11,31160	4,27538	10,3448	37,6552
VAR00005	3	7,00	36,00	23,6667	14,97776	8,64741	27,9671	48,8901
VAR00006	5	11,00	48,00	28,2000	17,16683	7,67724	-13,5402	60,8735
VAR00007	1[a]	16,00	16,00	16,0000	.	.	6,8846	49,5154
VAR00008	2	30,00	34,00	32,0000	2,82843	2,00000	6,5876	57,4124

a. t cannot be computed because the sum of caseweights is less than or equal 1.

Source: Statistical processing belongs to the author

Table no.2. The distribution of the scores averages economic competence levels of hospitals

The question that arises is whether, between the mean scores of economic and quality of care are correlated? To answer this question we proceeded to determine the coefficients of Kendall[1], as shown in Table 3.

Following the correlations between scores of economic efficiency and technical competence for all hospitals analyzed, we see that there is a correlation between these values Kendall, something which can be seen in Figure No.1.

[1] The correlation coefficient for nonparametric data was developed by Maurice Kendall in 1938 and is considered more accurate than Spearman coefficient determined for variables lies in a real way ordinal level. If Kendall coefficient, calculation procedures differ from one another, but all are based on counting inversions (when an item with a higher ranking is facing an element to a lower rank, the data is ordered by the other variable) and of their opposite

Correlations

Kendall's tau_b		A1	A2	A3	C1	C2	C3	C4	C5	D1	D2	D3	D4	A4	B1	B2	B3	B4
VAR000A1	Correlation Coefficient	1,000	,506**	,265	,036	,207	-,073	-,075	-,050	,321*	,050	-,070	,007	,000	,070	,344*	,095	-,011
	Sig. (2-tailed)	.	,001	,090	,819	,165	,621	,616	,740	,029	,748	,653	,967	1,000	,644	,025	,521	,941
	N	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
VAR000A2	Correlation Coefficient	,506**	1,000	,477**	,052	,120	-,185	-,020	-,231	,176	,171	,229	,306	,321*	,087	,118	,238	,178
	Sig. (2-tailed)	,001	.	,003	,744	,433	,224	,896	,133	,246	,284	,152	,065	,033	,578	,456	,117	,254
	N	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
VAR000A3	Correlation Coefficient	,265	,477**	1,000	,166	,128	-,085	,072	-,048	,003	,061	,203	,293	,277	,018	-,110	,370*	,319*
	Sig. (2-tailed)	,090	,003	.	,300	,405	,579	,642	,758	,985	,706	,206	,078	,068	,908	,487	,015	,041
	N	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
VAR000C1	Correlation Coefficient	,036	,052	,166	1,000	,014	,214	,017	,128	-,008	,269	-,224	,020	-,008	,215	-,197	,077	-,028
	Sig. (2-tailed)	,819	,744	,300	.	,925	,158	,912	,402	,957	,091	,159	,902	,957	,166	,208	,612	,854
	N	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
VAR000C2	Correlation Coefficient	,207	,120	,128	,014	1,000	,183	,188	,248	,235	,209	-,070	,159	,236	-,141	,147	,267	,281
	Sig. (2-tailed)	,165	,433	,405	,925	.	,207	,202	,092	,105	,172	,645	,315	,103	,345	,331	,066	,060
	N	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
VAR000C3	Correlation Coefficient	-,073	-,185	-,085	,214	,183	1,000	,228	,238	,175	,266	,230	,043	,020	-,026	-,057	,053	-,096
	Sig. (2-tailed)	,621	,224	,579	,158	,207	.	,118	,104	,224	,079	,129	,782	,890	,861	,705	,715	,514
	N	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
VAR000C4	Correlation Coefficient	-,075	-,020	,072	,017	,188	,228	1,000	,222	,199	,461**	,098	,207	,215	-,257	-,047	,179	,160
	Sig. (2-tailed)	,616	,896	,642	,912	,202	,118	.	,132	,170	,003	,524	,193	,137	,086	,756	,219	,284
	N	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32

Correlations

		A1	A2	A3	C1	C2	C3	C4	C5	D1	D2	D3	D4	A4	B1	B2	B3	B4
VAR000C5	Correlation Coefficient	-,050	-,231	-,048	,128	,248	,238	,222	1,000	,069	,171	,117	-,101	-,159	-,177	,044	,130	-,061
	Sig. (2-tailed)	,740	,133	,758	,402	,092	,104	,132	.	,637	,265	,444	,524	,273	,238	,771	,372	,683
	N	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
VAR000D1	Correlation Coefficient	,321*	,176	,003	-,008	,235	,175	,199	,069	1,000	,345*	,008	,142	,118	,116	,225	,122	,018
	Sig. (2-tailed)	,029	,246	,985	,957	,105	,224	,170	,637	.	,022	,956	,363	,407	,431	,130	,395	,902
	N	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
VAR000D2	Correlation Coefficient	,050	,171	,061	,269	,209	,266	,461**	,171	,345*	1,000	,113	,544**	,277	,101	,118	,274	,313*
	Sig. (2-tailed)	,748	,284	,706	,091	,172	,079	,003	,265	,022	.	,477	,001	,066	,514	,452	,070	,044
	N	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
VAR000D3	Correlation Coefficient	-,070	,229	,203	-,224	-,070	,230	,098	,117	,008	,113	1,000	,216	,150	-,064	,030	,020	,023
	Sig. (2-tailed)	,653	,152	,206	,159	,645	,129	,524	,444	,956	,477	.	,191	,320	,682	,848	,897	,880
	N	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
VAR000D4	Correlation Coefficient	,007	,306	,293	,020	,159	,043	,207	-,101	,142	,544**	,216	1,000	,215	,090	,020	,238	,420**
	Sig. (2-tailed)	,967	,065	,078	,902	,315	,782	,193	,524	,363	,001	,191	.	,168	,577	,902	,128	,009
	N	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
VAR000A4	Correlation Coefficient	,000	,321*	,277	-,008	,236	,020	,215	-,159	,118	,277	,150	,215	1,000	,087	,096	,336*	,386**
	Sig. (2-tailed)	1,000	,033	,068	,957	,103	,890	,137	,273	,407	,066	,320	,168	.	,554	,518	,019	,008
	N	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
VAR000B1	Correlation Coefficient	,070	,087	,018	,215	-,141	-,026	-,257	-,177	,116	,101	-,064	,090	,087	1,000	,142	-,121	,137
	Sig. (2-tailed)	,644	,578	,908	,166	,345	,861	,086	,238	,431	,514	,682	,577	,554	.	,354	,411	,365
	N	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
VAR000B2	Correlation Coefficient	,344*	,118	-,110	-,197	,147	-,057	-,047	,044	,225	,118	,030	,020	,096	,142	1,000	,180	,235
	Sig. (2-tailed)	,025	,456	,487	,208	,331	,705	,756	,771	,130	,452	,848	,902	,518	,354	.	,227	,124

Correlations

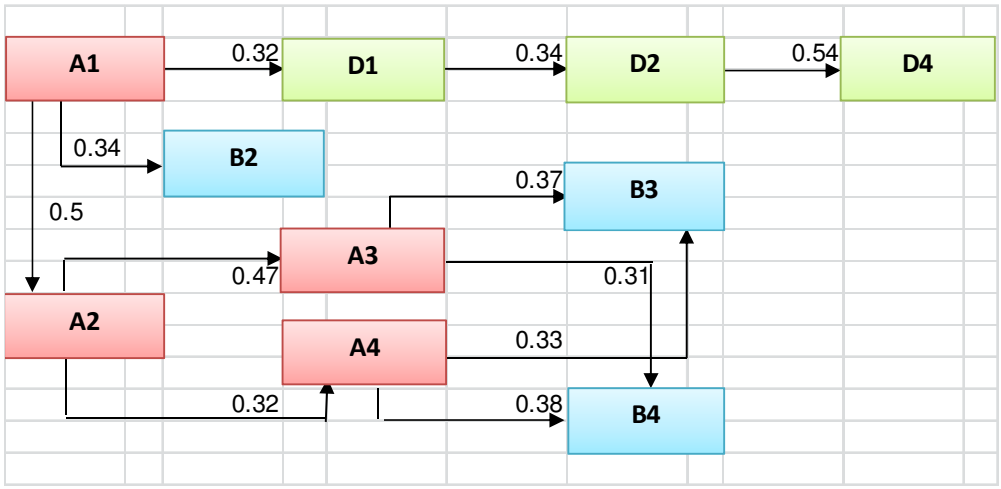
	N	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
		A1	**A2**	**A3**	**C1**	**C2**	**C3**	**C4**	**C5**	**D1**	**D2**	**D3**	**D4**	**A4**	**B1**	**B2**	**B3**	**B4**
VAR000B3	Correlation Coefficient	,095	,238	,370*	,077	,267	,053	,179	,130	,122	,274	,020	,238	,336*	-,121	,180	1,000	,434**
	Sig. (2-tailed)	,521	,117	,015	,612	,066	,715	,219	,372	,395	,070	,897	,128	,019	,411	,227	.	,003
	N	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
VAR000B4	Correlation Coefficient	-,011	,178	,319*	-,028	,281	-,096	,160	-,061	,018	,313*	,023	,420**	,386**	,137	,235	,434**	1,000
	Sig. (2-tailed)	,941	,254	,041	,854	,060	,514	,284	,683	,902	,044	,880	,009	,008	,365	,124	,003	.
	N	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Source: author belongs processing using SPSS 18.0

Table. 3. Kendall's coefficients



Source: author belongs, picture processing after Kendall's coefficients (Table 3.)

Figure No.1. Significant correlations between scores of performance indicators

The lack of statistical correlations between scores of economic efficiency and technical competence suggests that hospital management's performance is a delusion because subordanarea different and multiple units of the health system vis-à-vis how separate assessment of skills and management capabilities make virtually impossible able to generate management solutions.

Regardless of the fact that we analyze coefficients of Pearson, Spearman and Kendall, a simple view them confirms the above statement by the significant negative correlations suggest the following:

• an increase in staff costs does not mean the share of doctors, medical personnel or personnel educated in total staff to increase the average number of visits per physician / outpatient;

• an increase in the average length of stay and bed utilization does not mean a decrease in personnel costs, costs of the drugs and the average cost / day of hospitalization;

• increase the average number of visits per physician / outpatient and average length of stay does not imply a decrease average cost / day of hospitalization;

• increasing the number of surgeries does not contribute to lowering the average cost / day of hospitalization.

3. Conclusion

The health system must find other tools to support performance improvement, based in particular on efficient use of time and cost tracking, which is why the method Time-Driven Activity-Based Costing is seen as the best solution.

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