

PERFORMANCE ANALYSIS OF AN ENTITY FROM CONSTRUCTION SECTOR USING DASHBOARD

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Abstract

This research paper deals with the analysis of performances of economic entities from the construction sector from Romania. The necessary data for preparation and analysis up through dashboard of the economic entity are provided by managerial accounting through Target Costing method. The way of implementing and observing of stages which are completed in managerial accounting through Target Costing method are also presented in the paper based on the existing literature. For data analysis it was used a questionnaire based on three questions whose results were analyzed and which formed the basis of our entire course of scientific approach. The paper ends with the authors' conclusions about the performance analysis of economic entities in a construction project using dashboard showing the benefits of its long-term decisions.

Keywords: *Managerial accounting, performances, dashboard, target costing, construction project*

Clasificare JEL: *M41*

1. Introduction

Performance is the key to the entire success of a well-run business that turns an economic entity to profit, profitability, stability, solvency and liquidity. Each of the actors who have a well defined role in an entity presents different interests, such as: entity's management from overall performance, investors from the profitability of the investment, investors from the profitability of the investment, employees from the stability of the entity and creditors from solvency and liquidity [12]. Based on recent developments in the field of management science epistemology, the main objective of this article consists in expanding and validating the performance analysis framework of an economic entity in the construction using as a measurement tool for performance monitoring the dashboard. A secondary objective relates to the validity of information sources supplied by the use of Target Costing method and which is the solid support for the analysis of the performances with the help of financial indicators but also non financial of an economic entity from the construction sector.

2. Literature review

Target Costing method bases were established by the Consortium for Advanced Manufacturing International, whose results were published in various publications with impact on an international scale and demonstrate real utility of this method on the line for continuous cost reduction.

According to the definition given by CAM-I, Target Costing represents “a *set of management tools and methods designed for direct projection and planning activities for new products that provide a base for the subsequent phases of exploitation and ensuring that their products reach their profitability targets throughout their life cycle*”.

The first reports about the emergence of Target Costing method dates from 1930 at Volkswagen (Germany) and Marks-Spencer (England), but its systematic application and development is conducted at Toyota (Japan) in the mid 1960s. Extension of Target Costing method in both the USA and European level occurs in late 1980. Since 2000 the method is studied and applied more extensively across Europe, particularly in France and Britain.

Studies undertaken by specialists Dekker and Schmidt show an intense use of the Target Costing method especially in Western countries. Also in 2003 in the United States, studies conducted by the Institute of Management Accountants and Ernst & Young shows that 26% of their members were using Target Costing method, while firms in Denmark has a rate of 50%. Regarding the use of factors of implementation or deployment of Target Costing method or in the analysis of their decisions there are few studies made. Some authors [1] consider that these factors include: the intensity of competition, industrial affiliation, uncertainty rate in the business or the strategy perceived by managers. In studies in Germany, other authors [7] showed that the adoption of Target Costing method is related to the intensity of competition and not adopting it is related to the degree of perception in an uncertain environment.

The strongest argument for the adoption of the Target Costing method is based on forecasts of customer requirements and behavior of competitors in the market and most negative argument for not forthcoming the method Target Costing is based on rigid targets identified in forecast customer requirements and perceptiveness in an uncertain environment that suggest using the method just as a tool for maintaining competitiveness. Some specialists [8] believe that Target Costing is a system by which a company is planning in advance to the sales prices, product costs and margins which plans to carry out for a new product. If the company can not make a product at these levels planned, then cancels the projection of the product fully. With the target cost method, a management team has a strong tool for continuous monitoring products when they enter the design phase and further along the product life cycle.

While Target Costing objective can be more easily applied at the beginning of the product life cycle, there is no conceptual reason for which the methodology can't be applied to existing products. We believe that Target Costing can be also applied in the manufacturing stages of the product life cycle. By defining restrictive Target Costing method, managers can conclude that this methodology can not be applied to existing products and can continue with their current systems and inefficient cost management. Other researchers [9] argue our point of view suggesting that the method Target Costing can be applied throughout the life cycle of the product: *"Target Costing is only part of the management function of the cost for product throughout its life cycle. The target cost set to be achieved by meeting customer requirements, using different methods designed to identify potential cost reduction"*.

Analyzed through the management control, entity's management influence the behavior of members in order to implement the strategy, an action that is economically substantiated selection and optimization of resources in order to achieve objectives. In literature there are several meaningful approaches of the dashboard management: a tool for short-term action that includes a limited number of indicators related to important decisions and the entity's objectives aimed at highlighting the differences between forecast and realized [3]; a tool of information and signaling significant deviations; a tool for dialogue and objective assessment of performance support for managers in different hierarchical levels [11]; pilot's instrument while highlighting significant deviations as a tool for diagnosis and progress [5]. Other models of the dashboard were presented and discussed by other authors: the eco-dashboard for analyzing the environmental performance [12] or the dashboard specific to economic entities in the field of mining [6]. Using data from management accounting and budgetary system, management dashboard can be built on the existing accountability structure in an entity by applying the same principles of analysis of the deviations. In other words, dashboard consists of that set of standard indicators that the entity management is analysing in regular to evaluate the activity that it runs. Dashboard shows the status of the economic entity at a time and is also a management tool that allows comparison of current indicators with indicators above the target.

3. Methodology of research

Research questions

The purpose of this research paper consists in identification of a modern method for cost management in a construction project and reflects the performances of the economic entities from this sector with the help of the dashboard. In this sense, we tried to find answers to a series of questions as follows:

1. *Is it possible to adapt the target costing method to the specific of a construction project from an economic entity from this sector?*
2. *Costs related information provided by the target cost method is reliable and useful in decision making process?*
3. *Is the dashboard a proper tool for measuring the entities performances from the construction sector?*

Instrumentation

The design of our research focuses on the theoretical approach of the implications arising from development problems described by questions launched at the beginning of the study. For the relevance of the study were used as instruments: induction, deduction and questionnaire which were taken into account one category of respondents to the questions launched namely, specialists in accounting, grouped into two types (heads of departments and accountants).

Sample and data analysis

The study sample was drawn on a number of 1462 people and after collecting the questionnaires and conducting data centralization, the situation is as follows (table no. 1):

Table no. 1. The situation of answers on category of respondents

Questions	Category of respondents			
	Head of departments		Accountants	
	Yes	No	Yes	No
1. Is it possible to adapt the target costing method to the specific of a construction project from an economic entity from this sector?	289 (83.52%)	57 (16.48%)	845 (75.71%)	271 (24.29%)
2. Costs related information provided by the target cost method is reliable and useful in decision making process?	270 (78.03%)	76 (21.97%)	717 (64.24%)	399 (35.76%)
3. Is the dashboard a proper tool for measuring the entities performances from the construction sector?	301 (87.00%)	45 (13.00%)	834 (74.73%)	282 (25.27%)
Total	346		1116	

As can be seen, the largest share of the two categories of specialists surveyed pleads for identifying, analyzing and combating hidden costs. Given this situation, our empirical study continued and the results achieved to the identification, analysis and presentation of preventive measures are described below. In terms of graphics, the situation analysis of the questionnaires (fig. no. 1) is as follows:

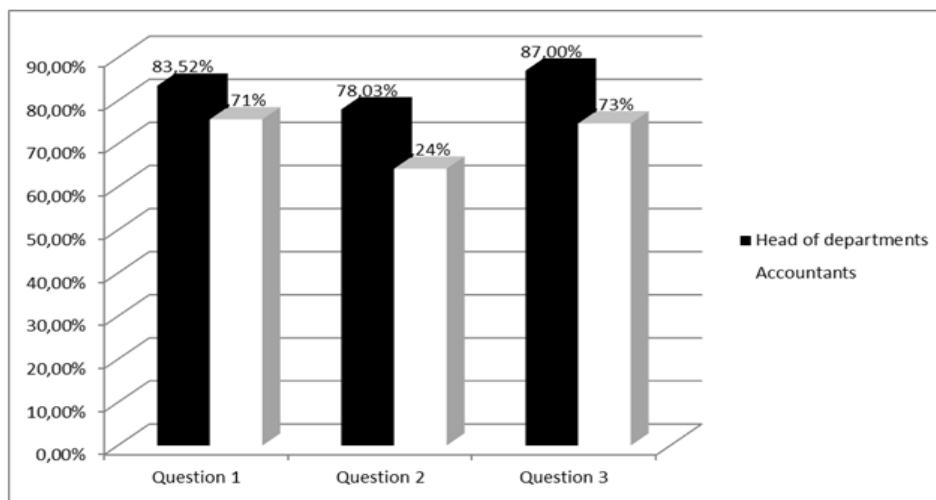


Fig. no. 1. The situation of positive answers obtained on the two categories of specialists

4. Target Costing method and the dashboard created based on information provided by it

Development stages of Target Costing method

Target Costing method focuses on reducing the cost of a product through changes in its design being applied during the design phase of the life cycle of the product. In literature, scientists have identified the following general steps that underlie the Target Costing method [2]:

1. *The management of market research or performing market studies.* The first step is to review the market where the company wants to sell its products or services. The design team must establish a set of characteristics of the product or service that customers are most likely to buy and the amount they will pay for these features. The team must learn about perceived value on individual characteristics, if needed later to determine their impact on the price of the product or service if they waive one or more features. It may be necessary to quit later to a characteristic of the product or service if the team decides it can not provide this function while still aims to achieve the target cost At the end of this process, the team may have a better idea of the target price at what can sell the proposed product with a certain set of features, and how to modify the price in case one of the product features drops. The target price is set by the study techniques such as assessment of market needs, competitive analysis or preliminary plans of the entity to provide a new

or modified product with certain features or characteristics. The essence is that entities are using Target Costing method to establish their target price on the market depending on the competition and long-term prices according to market penetration targets.

2. *Establishing target for profit margin.* Target profit margin is resulting from the strategic and long-term financial objectives of the entity as a result of efforts to plan the profit. The company provides the design team a gross margin mandated so that the proposed product must win. By lowering gross margin mandated from the price of the designed product or service, the team can easily determine the maximum target cost so that the product to touch it before being accepted into production. The general equation is as follows:

$$\text{Target price} - \text{Target profit margin} = \text{Target cost (allocated)} \quad (1)$$

The allocated cost may consist of: variable costs of production (raw materials, direct wages), unit production costs (development, depreciation, instrumentation), other costs (general manufacturing, administrative) investment costs (inventory, equipment, installation).

3. *Determining the estimated cost and target cost.* If the proposed product is a modification of an existing product, an entity already has the cost basis from which can determine what could be potential costs of the proposed new product, if the new product specifications and manufacturing methods are similar. Below is determined costs of the new product or engineering costs (operating costs, estimated) using the product specifications and existing manufacturing processes. The general equation is as follows:

$$\text{Target price} - \text{Target profit margin} = \text{Target cost} \quad (2)$$

$$\text{Target price} - \text{Target profit margin} = \text{Target cost, estimated (according to Kaizen Costing)} \quad (3)$$

The estimated cost is reduced by using Kaizen Costing technique to achieve the proposed target cost by the entity. Engineers and public procurement staff from the team now take the lead role in creating the product or service. The staff of public procurement is particularly important when the product has a high percentage of purchased parts; he must determine component prices based on quality, delivery and quantities required levels in waiting for a product. They may also involve parts of externalization, in case they lead to lower costs. Engineers must design the product to meet the target cost, which will likely include a number of design iterations to see which combination of features and design revised considerations results at the lowest cost.

4. *Calculation of the estimated cost of products and estimated activities.* It represents the sum of direct and indirect expenses allocated on products. Once a product design is finalized and approved, the team is reconstituted to include fewer projects and more industrial engineers. The team is now entering a new phase to reduce production costs, which continue throughout the life of the product. For example, cost reductions can come from waste reduction in production or planned cost reductions of suppliers. These cost reductions underway give additional gross margin sufficient for the company to further reduce product prices over time in response to increasing competition.

5. *Calculation of the target cost, the amount costs that have to be reduced.* If after determining the estimated cost, this is higher than the cost of product proposed by the entity, it shall be reduced by the application of value engineering. This requires bottom-up adjustment to estimate the cost component, meaning the indirect expenses allocated on cost carrier and that of direct expenses, if it is the case.

Cost budgeting

The budgets drawn up within each organizational structure, be it place for cost generator, workshop, department, organization, serving on dimensioning the volume of activity, in determining the amount and conditions of allocation and efficient use of resources and the sharing of responsibilities those involved on the management of allocated funds and objectives [4]. In a construction project, in order to fit into the economic requirements of the beneficiary, the designer/contractor must respect expenses budgeting respectively to budget correctly right from the stage of the technical project, the future execution costs. Given that budgeting is basically a final estimate of the future costs, it will be considered that by budgeting it will be obtain an approximate calculation which may contain uncertainties but which is providing reference values for cost control. Deviations from initial planned budget may jeopardize the profitability of the project. For cost budgeting are used several methodologies, formation procedures and estimation of cost which are updated over the life of the project execution. Information on cost budgeting are used from an early stage of development of the construction project, the beneficiary needing the expected cost likely to achieve the investment.

This initial estimation is made with minimal information available, but after the technical development stage of the project can be made clearer estimates of execution budget. Size of execution budget is checked regularly in the

design stage and changed once it emerges quite clearly the details of execution. Throughout the execution is estimated effective cost of work performed, it is compared with the limited costs and is made the necessary corrections.

Cost budgeting requires forecasting total costs, aiming to supply a quantity of reference for cost control, control of resources consumed during project execution. In case of our study it was chosen the estimation of the budget according to the stages of the project of construction, which are in direct connection with every stage of execution of the project (were made a budget for making the feasibility study, for designing the work, budget for obtaining the necessary permits for construction). Based on data analyzed from the economic entity, the information is as follows (table no. 2 and table no. 3):

Table no. 2. The situation turnover target, the target cost and profit margin target during 2013-2015

Explanations	Year 2013	Year 2014	Year 2015
	Stage 1 Launch	Stage 2 Growth	Stage 3 Maturity
Number of provisioned works	1	1	1
Unit target sales price	1,315,340.40 lei	1,290,487.57 lei	7,772,066.32 lei
The profit margin target	102,967.58 lei	38,714.63 lei	688,549.34 lei
Unit cost target	1,212,372.82 lei	1,251,772.94 lei	7,083,516.98 lei
Turnover target	1,315,340.40 lei	1,290,487.57 lei	7,772,066.32 lei
The profit margin target	102,967.58 lei	38,714.63 lei	688,549.34 lei
Target cost	1,212,372.82 lei	1,251,772.94 lei	7,083,516.98 lei
Share of profit in turnover margin	0.08 %	0.03 %	0.09 %
Share of target cost in turnover	0.92 %	0.97 %	0.91 %

Table no. 3. Situation of target cost forecasted and effective during 2013-2015

Target cost forecasted	Year 2013	Year 2014	Year 2015
Direct target cost	523,986.58 lei	646,157.08 lei	3,921,506.09 lei
Indirect target cost	688,386.24 lei	605,615.87 lei	3,162,010.89 lei
<i>Total cost</i>	<i>1,212,372.82 lei</i>	<i>1,251,772.94 lei</i>	<i>7,083,516.98 lei</i>
Effective cost	Year 2013	Year 2014	Year 2015
Direct cost	541,561.54 lei	663,399.97 lei	4,678,324.17 lei
Indirect cost	713,460.21 lei	603,838.37 lei	3,238,432.92 lei
<i>Total cost</i>	<i>1,255,021.75 lei</i>	<i>1,267,238.33 lei</i>	<i>7,916,757.09 lei</i>

Drawing target cost calculation during period 2013-2015

Situations regarding applying Target Costing method on stages of execution and taking into consideration the demands of the client are presented above (tables' no. 4-6)

Table no. 4. Stage 1 of execution

	Name	Target cost (Lei)	Effective cost (Lei)	Difference (Lei)	Percentage in cost target work	Percentage in cost target effective
	A. Direct costs					
	- Expenses on activities required to verify the quality of the materials used in sealing the base system, including all the technical equipment and installations	1.782,87	1.782,87	0,00	0,14%	4,13%
	- Expenses on activities necessary for quality control system standard execution sealing of the base, including all the technical equipment and installations	3.038,86	3.038,86	0,00	0,24%	7,13%
	- Expenses on for water works in any area of work during the construction period and until graduation, excluding activities that were explicitly stated in another chapter of estimations	210,00	210,00	0,00	0,02%	0,49%
	- Expenses on diversion, protection or disconnection from public utilities, including projects and permits required	986,04	986,04	0,00	0,08%	2,31%
	- Expenses of engineers with testing and sampling of materials including cost of planning and equipping of the laboratory of the Contractor	4.458,69	4.458,69	0,00	0,36%	10,45%
	- Developing underground analysis geotechnical study	0,00	0,00	0,00	0,00%	0,00%
1	General conditions	10.476,47	10.476,47	0,00	0,83%	24,56%
	Preliminary works at earthwork	0,00	0,00	0,00	0,00%	0,00%
	-leasing	2.837,00	2.837,00	0,00	0,21%	0,00%
	- Excavation and deposit material in the warehouse	39.181,83	39.535,17	373,44	3,15%	0,83%
	Bomom sealing system	0,00	0,00	0,00	0,00%	0,00%
	Mineral sealing layer	4.100,29	4.163,29	63,00	0,33%	0,15%
	Geosynthetic material (geomembrana protective geotextile)	0,00	0,00	0,00	0,00%	0,00%
	- Geomembrane	26.404,87	26.405,99	1,13	2,10%	0,00%
	- Geotextile protection	18.448,32	19.575,07	1.128,75	1,56%	2,65%
	- Geotextile separation	6.083,89	6.084,84	0,75	0,48%	0,00%
	Plastic anchor for HDPE film	316,97	319,95	2,98	0,03%	0,01%
	Leachate drainage layer	35.590,79	35.515,79	-75,00	-0,21%	-0,18%
	Construction waste	3.994,07	3.581,37	-412,70	-0,29%	-0,97%
2	Landfill site	136.575,64	137.658,58	1.082,94	0,97%	2,54%
	- earthwork for the pipe work and homes	15.695,03	15.695,03	0,00	1,15%	0,00%
	- Pipelines for lavigat and wastewater	22.933,61	24.058,61	1.125,00	1,92%	2,64%
	- Manholes	16.384,83	16.384,83	0,00	1,31%	0,00%

**Annals of the „Constantin Brâncuși” University of Târgu Jiu, Economy Series,
Special Issue ECO-TREND 2015 – Performance, Competitiveness, Creativity**

	- Equipment	10.618,34	11.046,11	427,88	0,88%	1,00%
	- Sewage and leachate pumps	1.188,93	1.275,18	86,25	0,10%	0,20%
3	Leachate Treatment system and Wastewater Treatment	66.820,74	68.459,86	1.639,13	5,43%	3,84%
	- Construction work for pipelines and homes earthwork, waste water	921,77	960,77	39,00	0,08%	0,08%
	- Implementation of pipes	1.872,38	1.875,75	3,38	0,13%	0,01%
4	Landfill gas extraction system	2.794,14	2.836,52	42,38	0,23%	0,10%
	- Earthwork works for collection and disposal of surface water and water discharge	6.808,99	6.829,99	21,00	0,54%	0,05%
	- Paving grooves	4.607,94	4.945,44	337,50	0,39%	0,79%
	Cascade	0,00	0,00	0,00	0,00%	0,00%
	- prefabricated	536,74	536,36	-0,38	0,04%	0,00%
	- Structures	4.649,22	5.023,10	373,88	0,40%	0,88%
	- Prefabricated concrete water discharge and Demarcation	2.246,02	2.283,52	37,50	0,18%	0,09%
	- Paving: Other structures	782,53	784,80	2,25	0,06%	0,01%
	- Pipes execution	23.752,53	24.540,03	787,50	1,96%	1,85%
	- Manholes	17.266,63	18.018,51	751,88	1,44%	1,76%
	- Equipment	917,14	862,76	-54,38	0,07%	-0,13%
5	System for collection and disposal of surface water	61.567,75	63.824,50	2.256,75	5,09%	5,29%
	- Works earthwork for collection and disposal of surface water and water discharge	745,65	783,93	38,25	0,06%	0,09%
	- Outdoor Water Fare	3.330,37	3.325,25	-44,38	0,28%	0,34%
	- Implementation of pipes	3.634,98	4.045,98	411,00	0,32%	0,96%
	- Manholes	217,26	303,51	86,25	0,02%	0,20%
	- Equipment	183,90	189,90	6,00	0,02%	0,01%
	- Pumps for firefighting	1.875,33	1.984,08	108,75	0,16%	0,25%
6	Fire Systems	10.038,02	10.832,63	794,63	0,86%	1,86%
	- Access road landfill	7.272,77	8.791,52	1.518,75	0,70%	3,56%
	- Road signs	448,33	548,03	97,50	0,04%	0,23%
	- Compactor road	12.763,69	13.905,19	1.141,50	1,11%	2,68%
	- Perimeter Road, traffic areas and storage areas	22.776,11	22.776,11	0,00	1,81%	0,00%
	- Borders	1.355,71	1.420,58	64,88	0,11%	0,15%
7	Paving	44.616,83	47.439,45	2.822,63	3,78%	6,62%
	- Work to gutter overflow earthwork	65,38	75,50	10,13	0,01%	0,02%
	- Draining	17,47	29,47	12,00	0,00%	0,03%
	- Paving	314,93	265,93	-51,00	0,02%	0,12%
8	Recipient	297,78	370,90	73,13	0,03%	0,17%
	- Planting	6.920,43	7.673,78	753,25	0,61%	1,76%
	- Protection against erosion - erosion protection mats	6.931,39	8.458,77	1.527,38	0,67%	3,58%
9	Landscape Planning	13.851,92	16.151,55	2.279,63	1,29%	5,35%
10	Surrounded by a fence	23.918,58	24.667,83	749,25	1,97%	1,76%
	- electricity supply services	300,75	675,75	375,00	0,03%	0,88%
	- electricity connections definition (OS)	5.637,14	5.639,01	1,88	0,45%	0,00%
	- Electrical installations, ext. (cables, lighting ext. switchboards)	29.775,44	30.323,08	752,63	2,43%	1,76%
11	Electrical power supply	35.713,32	36.842,82	1.129,50	2,94%	2,65%
	- Earthworks for water and discharge pipelines and homes	767,81	767,81	0,00	0,06%	0,00%
	- Water pipes	174,94	174,94	0,00	0,01%	0,00%
	- Tank and fireplace	3.259,39	3.271,67	12,28	0,26%	0,03%
	- Equipment	2.481,37	3.247,87	766,50	0,26%	1,80%
	- Water pumps	70,44	107,19	36,75	0,01%	0,09%
	- Installation and adjustment	1.267,77	1.387,77	300,00	0,12%	0,70%
12	Water Supply	8.021,72	9.137,24	1.115,53	0,73%	2,62%
	- Scale weight bridge	2.915,66	2.915,66	0,00	0,23%	0,00%
	- washing facilities tires	2.709,35	2.992,85	283,50	0,24%	0,66%
13	Other Structures	5.625,01	5.908,51	283,50	0,47%	0,66%
	- Drilling for water monitoring	2.085,75	2.212,50	126,75	0,18%	0,30%
	- Monitoring equipment	7.612,38	7.800,25	187,88	0,62%	0,44%
14	Environmental Monitoring System	9.698,13	10.012,75	314,63	0,80%	0,74%
15	Modular Containers	4.775,04	4.775,04	0,00	0,38%	0,00%
	Outdoor buffer	4.117,99	4.492,61	374,63	0,56%	0,88%
	Intake Pump Station	4.201,04	4.671,66	470,63	0,37%	1,10%
	biological treatment	5.394,47	5.394,47	0,00	0,43%	0,00%
	Intermediate pumping station	4.544,66	4.367,33	-22,88	0,36%	0,03%
	Heavy metal separator	7.771,22	7.961,33	190,13	0,63%	0,43%
	System dewatering and sludge disposal	5.892,62	5.939,00	66,38	0,47%	0,16%
	Pumping station evacuation	6.858,67	6.858,67	0,00	0,33%	0,00%
	Dosing systems - Container 40'	15.090,86	15.133,61	42,75	1,21%	0,10%
	Process monitoring system - Container 40'	13.809,05	13.840,53	31,50	1,10%	0,07%
	Outside Plant	6.346,76	6.371,13	24,38	0,51%	0,06%
	Design and supervision	8.832,78	9.212,63	379,88	0,73%	0,89%
16	Leachate treatment plant	82.638,11	84.261,24	1.603,13	6,71%	3,76%
	- outdoor electrical equipment- list 6	2.724,51	3.337,64	613,13	0,27%	1,44%
	- current distribution transformer and electric panel	3.812,87	4.388,00	775,13	0,37%	1,87%
17	Outdoor Electrical Installations	6.337,38	7.825,83	1.388,25	0,83%	3,28%
18	TOTAL DIRECT COSTS	523.986,58	541.561,54	17.574,96	43,13%	41,21%
19	TOTAL INDIRECT COSTS	688.386,24	713.460,21	25.073,97	56,83%	58,79%
20	TOTAL COSTS (DIRECT + INDIRECT)	1.212.372,82	1.255.021,75	42.648,93	100,00%	100,00%

Table no. 5. Stage 2 of execution

Name	Target cost (Lei)	Effective cost (Lei)	Deviation (Lei)	Percentage in cost target work	Percentage in cost target effective
A. Direct costs					
- Expenses on activities required to verify the quality of the materials used in sealing the base system, including all the technical equipment and installations	2.579.741	3.282.87	703.13	0.21%	0.26%
- Expenses on activities necessary for quality control system standard execution sealing of the base, including all the technical equipment and installations	3.816.99	4.388.86	571.88	0.30%	0.35%
- Expenses on for water works in any area of work during the construction period and until graduation, excluding activities that were explicitly stated in another chapter of estimations	525.00	629.25	104.25	0.04%	0.05%
- Expenses on diversion, protection or disconnection from public utilities, including projects and permits required	1.740.17	2.116.29	376.13	0.14%	0.17%
- Expenses of engineers with testing and sampling of materials including cost of planning and equipping of the laboratory of the Contractor	4.840.07	5.212.82	372.75	0.39%	0.41%
- Developing underground analysis geotechnical study	0.00	0.00	0.00	0.00%	0.00%

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Special Issue ECO-TREND 2015 – Performance, Competitiveness, Creativity**

1	General conditions	12,501.97	14,620.09	2,128.12	1.68%	1.23%
	Preliminary works on carthwork	66,166.00	67,290.00	1,124.00	1.69%	1.73%
	- Clearing	2,066.25	2,375.12	328.87	0.26%	0.27%
	- Excavation and deposit material in the warehouse	60,796.21	61,655.77	659.56	2.26%	2.27%
	Bottom scaling system	0.00	0.00	0.00	0.00%	0.00%
	Mineral scaling layer	5,221.29	5,550.79	329.50	0.62%	0.64%
	Geosynthetic material (geomembrana, protective geotextile)	0.00	0.00	0.00	0.00%	0.00%
	- Geomembrana	27,224.12	28,222.87	998.75	2.18%	2.26%
	- Geotextile protection	19,267.57	20,465.07	1,177.50	1.56%	1.61%
	- Geotextile separation	6,908.69	7,759.29	850.50	0.53%	0.61%
	Diaches anchor for HDPE film	271.22	504.65	233.43	0.02%	0.04%
	Leachate drainage layer	26,215.79	25,215.79	-900.00	2.89%	2.79%
	Construction waste	4,606.67	2,792.22	-1,814.45	0.24%	0.20%
2	Landfill site	189,724.01	192,772.28	4,048.27	14.16%	14.29%
	- carthwork for the pipe work and homes	16,247.53	17,120.02	872.50	1.20%	1.24%
	- Pipelines for lavage and wastewater	25,250.11	25,927.26	677.15	2.02%	2.05%
	- Manholes	17,512.83	18,272.22	759.30	1.60%	1.65%
	- Equipment	11,728.71	12,282.71	554.00	0.94%	0.97%
	- Sewage and leachate pumps	1,662.68	1,575.18	-87.50	0.12%	0.12%
2	Leachate Treatment system and Wastewater Treatment	72,241.86	74,288.61	2,046.75	5.78%	5.93%
	- Construction work for pipelines and homes carthwork, waste water	1,279.27	1,624.77	345.50	0.11%	0.12%
	- Implementation of pipes	1,994.88	2,048.24	53.36	0.16%	0.16%
4	Landfill gas extraction system	2,244.14	2,684.02	439.88	0.27%	0.29%
	- Carthwork works for collection and disposal of surface water and water discharge	7,782.99	8,247.69	464.70	0.62%	0.66%
	- Paving grooves	6,100.64	7,082.94	982.30	0.69%	0.66%
	Canals	0.00	0.00	0.00	0.00%	0.00%
	- prefabricated	1,201.26	1,420.99	219.73	0.10%	0.11%
	- Structures	5,624.72	6,298.10	673.38	0.65%	0.60%
	- Prefabricated concrete water discharge and Demarcation	2,675.29	2,808.52	133.23	0.21%	0.22%
	- Paving- Other structures	1,582.92	1,709.55	126.63	0.13%	0.13%
	- Pipes execution	26,085.02	26,805.02	720.00	2.08%	2.12%
	- Manholes	19,914.12	20,228.26	314.14	1.59%	1.60%
	- Equipment	2,171.16	2,262.76	91.60	0.17%	0.19%
5	System for collection and disposal of surface water	72,241.12	77,192.62	4,951.50	5.85%	6.09%
	- Works carthwork for collection and disposal of surface water and water discharge	1,020.18	825.18	-195.00	0.08%	0.07%
	- Outdoor Water Rise	4,020.24	2,487.74	-1,532.50	0.23%	0.23%
	- Implementation of pipes	4,420.98	4,570.98	150.00	0.24%	0.24%
	- Manholes	200.12	211.01	10.89	0.02%	0.02%
	- Equipment	187.65	254.60	66.95	0.01%	0.02%
	- Pumps for firefighting	2,228.08	2,259.08	31.00	0.19%	0.19%
6	Fire Systems	12,247.27	11,808.60	-438.67	0.99%	0.92%
	- Access road landfill	10,010.27	10,404.02	393.75	0.80%	0.82%
	- Road edges	1,242.55	1,216.92	-25.63	0.10%	0.10%
	- Compactor road	14,526.19	14,842.89	316.50	1.16%	1.17%
	- Perimeter Road, traffic areas and storage areas	24,612.61	24,588.61	-24.00	1.97%	2.02%
	- Borders	2,202.28	2,248.08	45.80	0.18%	0.19%
7	Paving	52,606.20	54,410.22	1,804.02	4.20%	4.29%
	- Work to pump overflow carthwork	68.28	75.50	7.22	0.01%	0.01%
	- Draining	21.22	29.47	8.25	0.00%	0.00%
	- Paving	248.80	245.92	-2.88	0.02%	0.02%
8	Recipient	248.00	270.90	22.90	0.02%	0.02%
	- Flaming	8,908.02	9,424.28	516.26	0.71%	0.74%
	- Protection against erosion - erosion protection mats	3,618.89	3,082.77	-536.12	0.69%	0.65%
9	Landscape Planning	17,526.92	17,519.05	-7.87	1.60%	1.28%
10	Surrounded by a fence	26,208.23	27,172.08	963.85	2.09%	2.16%
	- electricity supply services	1,420.12	1,575.75	155.63	0.12%	0.12%
	- electricity connections definition (OE)	6,799.64	7,214.01	414.37	0.54%	0.57%
	- Electrical installations, cut (cables, lighting cut, switchboards)	22,608.68	22,228.68	-379.99	2.59%	2.62%
11	Electrical power supply	40,620.20	42,017.82	1,397.62	2.24%	2.22%
	- Carthwork for water and discharge pipelines and homes	2,287.81	2,685.21	397.40	0.19%	0.19%
	- Water pipes	528.56	549.94	21.38	0.04%	0.04%
	- Tank and fireplace	4,729.29	5,221.67	492.38	0.28%	0.31%
	- Equipment	2,921.27	4,624.27	1,703.00	0.22%	0.27%
	- Water pumps	188.26	217.81	29.55	0.02%	0.02%
	- Installation and adjustment	2,550.27	2,692.77	142.50	0.20%	0.21%
12	Water Supply	14,205.97	14,772.87	566.90	1.16%	1.26%
	- Scale weight bridge	2,085.66	2,915.66	-830.00	0.26%	0.22%
	- washing facilities tires	2,227.85	2,605.25	377.40	0.27%	0.27%
12	Other structures	6,602.51	6,221.01	-381.50	0.51%	0.50%
	- Drilling for water monitoring	2,824.27	2,112.50	-711.77	0.23%	0.24%
	- Monitoring equipment	8,727.75	9,200.25	472.50	0.70%	0.72%
14	Environmental Monitoring System	11,572.12	12,412.75	840.63	0.92%	0.98%
15	Modular Containers	6,221.42	6,650.04	428.62	0.50%	0.52%
	Outdoor buffer	6,247.99	6,247.61	-0.38	0.51%	0.50%
	Intake Pump Station	5,926.04	5,421.86	-504.18	0.47%	0.43%
	biological treatment	6,294.67	6,144.67	-150.00	0.52%	0.48%
	Intermediate pumping station	5,427.25	5,217.25	-210.00	0.42%	0.42%
	Heavy metal separator	8,824.10	8,711.25	-112.85	0.71%	0.69%
	System devanoring and sludge disposal	6,600.24	6,709.00	108.76	0.52%	0.52%
	Pumping station evacuation	7,425.04	7,219.17	-205.87	0.59%	0.57%
	Dosing systems - Container 40'	15,842.86	15,628.61	-214.25	1.27%	1.24%
	Process monitoring system - Container 40'	14,894.55	14,590.55	-304.00	1.19%	1.15%
	Outside Plant	7,090.76	6,749.88	-340.88	0.57%	0.53%
	Design and supervision	10,000.15	9,662.65	-337.50	0.80%	0.76%
16	Leachate treatment plant	92,107.74	92,552.69	444.95	7.60%	7.20%
	- outdoor electrical equipment- list 6	4,562.01	4,724.21	162.20	0.26%	0.27%
	- current distribution transformer and electric panel	6,042.87	6,088.00	45.13	0.48%	0.48%
17	Outdoor Electrical Installations	10,624.88	10,822.21	197.33	0.82%	0.82%
18	TOTAL DIRECT COSTS	646,147.08	662,399.97	16,252.89	51.62%	52.24%
19	TOTAL INDIRECT COSTS	605,615.87	602,828.27	-2,787.60	48.28%	47.85%
20	TOTAL COSTS (DIRECT + INDIRECT)	1,251,762.95	1,265,228.24	13,465.29	100.00%	100.00%

Table no. 6. Stage 3 of execution

	Name	Target cost (€ct)	Effective cost (€ct)	Deviation (€ct)	Percentage e in cost target work	Percentage e in cost target effective
	A. Direct costs					
	- Expenses on activities required to verify the quality of the materials used in scaling the base system, including all the technical equipment and installations	22,617.26	28,022.87	4,615.61	0.23%	0.25%
	- Expenses on activities necessary for quality control system standard execution scaling of the base, including all the technical equipment and installations	28,054.69	46,762.86	8,709.28	0.56%	0.59%
	- Expenses on for water works in any area of work during the construction period and until graduation, including activities that were explicitly stated in another chapter of estimations	6,900.00	10,756.25	2,856.25	0.10%	0.14%
	- Expenses on diversion, protection or disconnection from public utilities, including projects and permits required	16,102.67	18,261.29	2,128.62	0.23%	0.23%
	- Expenses of engineers with testing and sampling of materials including cost of planning and equipping of the laboratory of the Contractor	46,877.57	49,827.82	2,950.25	0.66%	0.67%
	- Developing underground analysis geotechnical study	0.00	0.00	0.00	0.00%	0.00%
1	General conditions	121,551.97	152,620.09	22,078.12	1.86%	1.94%
	Preliminary works at carthwork	478,521.00	594,779.59	116,258.59	6.76%	7.51%
	-cleaning	21,786.25	25,250.12	2,463.88	0.45%	0.45%
	- Excavation and deposit material in the warehouse	490,871.21	566,080.77	75,209.56	6.92%	7.15%
	Remove scaling system	0.00	0.00	0.00	0.00%	0.00%
	Mineral scaling layer	58,556.29	67,050.79	8,194.50	0.83%	0.85%
	Geosynthetic material (geomembrana, protective geotextile)	0.00	0.00	0.00	0.00%	0.00%
	- Geomembrane	271,084.12	247,082.87	24,001.25	2.82%	4.28%
	- Geotextile protection	210,517.57	245,445.07	24,927.50	2.97%	2.10%
	- Geotextile separation	62,222.89	64,000.29	766.50	0.89%	0.81%
	Drinks anchor for HDPE film	1,871.22	1,904.22	33.00	0.02%	0.02%
	Leachate drainage layer	261,715.79	410,215.79	148,500.00	5.11%	5.18%
	Construction waste	46,546.57	45,042.22	495.75	0.62%	0.57%
2	Landfill site	2,012,004.01	2,276,952.04	264,949.03	28.42%	20.02%
	- carthwork for the pipe work and homes	166,120.02	167,120.02	2,000.00	2.22%	2.11%
	- Pipelines for lavigat and wastewater	256,812.61	221,187.26	76,276.75	2.60%	4.18%
	- Manholes	176,262.82	175,872.22	1,609.50	2.66%	2.22%
	- Equipment	11,758.71	12,037.86	1,279.12	0.17%	0.16%
	- Sewage and leachate pumps	12,712.68	12,826.18	112.50	0.18%	0.16%
3	Leachate Treatment system And Wastewater Treatment	617,666.86	700,042.74	82,375.88	8.72%	8.84%
	- Construction work for pipelines and homes carthwork, waste water	16,879.27	16,260.89	1,481.62	0.21%	0.21%
	- Implementation of pipes	19,609.88	20,422.25	812.28	0.28%	0.26%
4	Landfill gas extraction system	26,689.16	26,784.16	2,295.00	0.69%	0.66%
	Carthwork works for collection and disposal of surface water and water discharge	109,032.99	111,867.69	2,832.50	1.56%	1.61%
	- Paving grooves	62,476.19	64,822.94	1,256.75	0.90%	0.82%
	Canals	0.00	0.00	0.00	0.00%	0.00%
	- prefabricated	16,426.26	15,295.89	869.62	0.20%	0.19%
	- Structures	58,877.97	98,568.10	29,670.12	0.82%	1.24%
	- Prefabricated concrete water discharge and Demarcation	22,900.29	24,727.75	1,827.26	0.69%	0.66%
	- Paving- Other structures	20,237.67	20,489.55	121.88	0.29%	0.26%
	- Pipes execution	259,485.02	228,420.02	78,945.00	2.66%	4.27%
	- Manholes	202,089.12	217,012.01	114,922.88	2.85%	4.00%
	- Equipment	21,821.16	22,655.26	1,826.12	0.21%	0.20%
5	System for collection and disposal of surface water	782,667.88	1,026,829.12	242,291.24	11.05%	12.95%
	- Works carthwork for collection and disposal of surface water and water discharge	8,550.18	10,525.21	1,975.12	0.12%	0.12%
	- Outdoor Water Pipe	5,924.25	6,862.75	927.50	0.09%	0.09%
	- Implementation of pipes	5,545.98	6,820.98	1,275.00	0.09%	0.09%
	- Manholes	675.12	1,296.88	621.75	0.01%	0.02%
	- Equipment	967.65	1,754.60	786.75	0.01%	0.02%
	- Pumps for firefighting	2,088.08	4,824.08	1,756.00	0.04%	0.04%
6	Rise Systems	26,752.27	22,094.60	7,242.12	0.25%	0.61%
	- Access road (landfill)	10,760.27	12,279.02	1,518.75	0.15%	0.16%
	- Road signs	2,002.55	2,716.92	714.28	0.02%	0.02%
	- Compactor road	16,712.69	16,242.69	1,629.00	0.21%	0.21%
	- Perimeter Road, traffic areas and storage areas	26,228.61	25,588.61	1,250.00	0.24%	0.22%
	- Borders	2,052.58	2,108.08	1,056.50	0.02%	0.04%
7	Paving	52,768.70	60,025.22	6,266.62	0.76%	0.76%
	- Work to gutter overflow carthwork	71.00	482.12	282.12	0.00%	0.01%
	- Draining	22.24	782.22	760.88	0.00%	0.01%
	- Paving	2,287.55	2,515.92	-71.62	0.04%	0.02%
8	Reception	2,680.00	2,742.28	1,071.28	0.04%	0.04%
	- Paving	9,058.02	10,196.52	1,128.50	0.12%	0.12%
	- Protection against erosion - erosion protection mats	8,262.89	9,658.77	1,416.88	0.12%	0.12%
9	Landscaping Planning	17,201.92	19,855.20	2,652.28	0.26%	0.29%
	Surrounded by a fence	26,432.22	27,567.08	1,112.75	0.27%	0.25%
	- electricity supply services	12,629.25	12,576.75	946.50	0.18%	0.17%
	- electricity connections definition (DE)	7,474.64	8,201.51	1,426.88	0.11%	0.11%
	- Electrical installations, con (cables lighting con switchboards)	22,600.66	25,852.06	2,252.62	0.67%	0.65%
11	Electrical power supply	52,704.22	58,220.22	6,626.00	0.76%	0.76%
	Carthwork for water and discharge pipelines and homes	2,292.21	2,652.21	1,260.00	0.02%	0.02%
	- Water pipes	8,062.21	9,174.94	1,112.62	0.11%	0.12%
	- Tank and fireplace	5,846.89	7,096.67	1,249.78	0.08%	0.09%
	- Equipment	2,668.87	5,010.27	1,141.50	0.02%	0.04%
	- Water pumps	1,915.66	2,692.81	777.28	0.02%	0.02%
	- Installation and adjustment	2,520.27	2,066.60	326.12	0.04%	0.04%
12	Water Supply	24,609.09	20,676.69	6,067.40	0.25%	0.29%
	- Scale weight bridge	2,075.78	2,815.66	729.88	0.04%	0.05%
	- washing facilities tires	2,229.25	2,782.72	666.28	0.05%	0.05%
13	Other Structures	6,615.12	7,499.28	1,186.25	0.09%	0.10%
	- Drilling for water monitoring	2,722.87	2,459.00	726.12	0.04%	0.04%
	- Monitoring equipment	9,262.75	10,458.62	1,195.88	0.12%	0.12%
14	Environmental Monitoring Pumps	11,984.62	12,917.62	1,922.00	0.17%	0.18%

15	Modular Containers	7,051.47	8,620.29	1,568.82	0.10%	0.11%
	Outdoor buffer	7,095.49	7,220.11	124.62	0.10%	0.09%
	Intake Pump Station	5,229.66	6,249.16	1,019.50	0.08%	0.08%
	biological treatment	6,635.72	7,270.22	634.50	0.09%	0.09%
	Intermediate pumping station	6,926.28	7,567.53	641.25	0.10%	0.10%
	Heavy metal separator	9,075.10	10,416.85	1,341.75	0.12%	0.12%
	System dewatering and sludge disposal	7,586.50	8,509.00	922.50	0.11%	0.11%
	Pumping station evacuation	7,792.56	8,266.17	473.62	0.11%	0.11%
	Boeing systems - Container 60'	16,226.26	17,176.11	949.85	0.23%	0.22%
	Process monitoring system - Container 60'	15,281.22	16,499.20	1,217.98	0.22%	0.21%
	Onsite Plant	7,665.76	8,222.88	557.12	0.11%	0.11%
	Design and supervision	10,457.65	11,227.65	770.00	0.15%	0.14%
16	Leachate treatment plant	100,662.28	108,942.99	8,280.71	1.42%	1.28%
	- outdoor electrical equipment- IIE 6	6,262.01	7,471.81	1,109.80	0.09%	0.09%
	- current distribution transformer and electric panel	6,829.12	7,221.75	392.63	0.10%	0.09%
17	Outdoor Electrical Installations	12,201.12	14,702.56	2,501.44	0.19%	0.19%
18	TOTAL DIRECT COSTS	3,921,506.09	4,678,324.17	756,818.08	23.26%	29.09%
19	TOTAL INDIRECT COSTS	3,162,010.89	3,238,432.92	76,422.03	4.64%	40.91%
20	TOTAL COSTS (DIRECT + INDIRECT)	7,083,516.98	7,916,757.09	833,240.11	100.00%	100.00%

Drawing the dashboard and information analysis

On the basis of the situation presented it was drawn the dashboard (fig. no. 2) of the entity which was subject to analysis and were selected a series of six indicators considered representatives for analysis and for making decisions by the management of the entity. These indicators are: evolution of the profit margin; evolution of the profit margin projected into turnover; development of projected total expenses and total expenses made; evolution of direct expenses forecasted and direct expenses achieved; evolution of indirect expenses forecasted and indirect expenses achieved; evolution of the profit margin, the direct of cost evolution achieved and the evolution of indirect costs achieved.

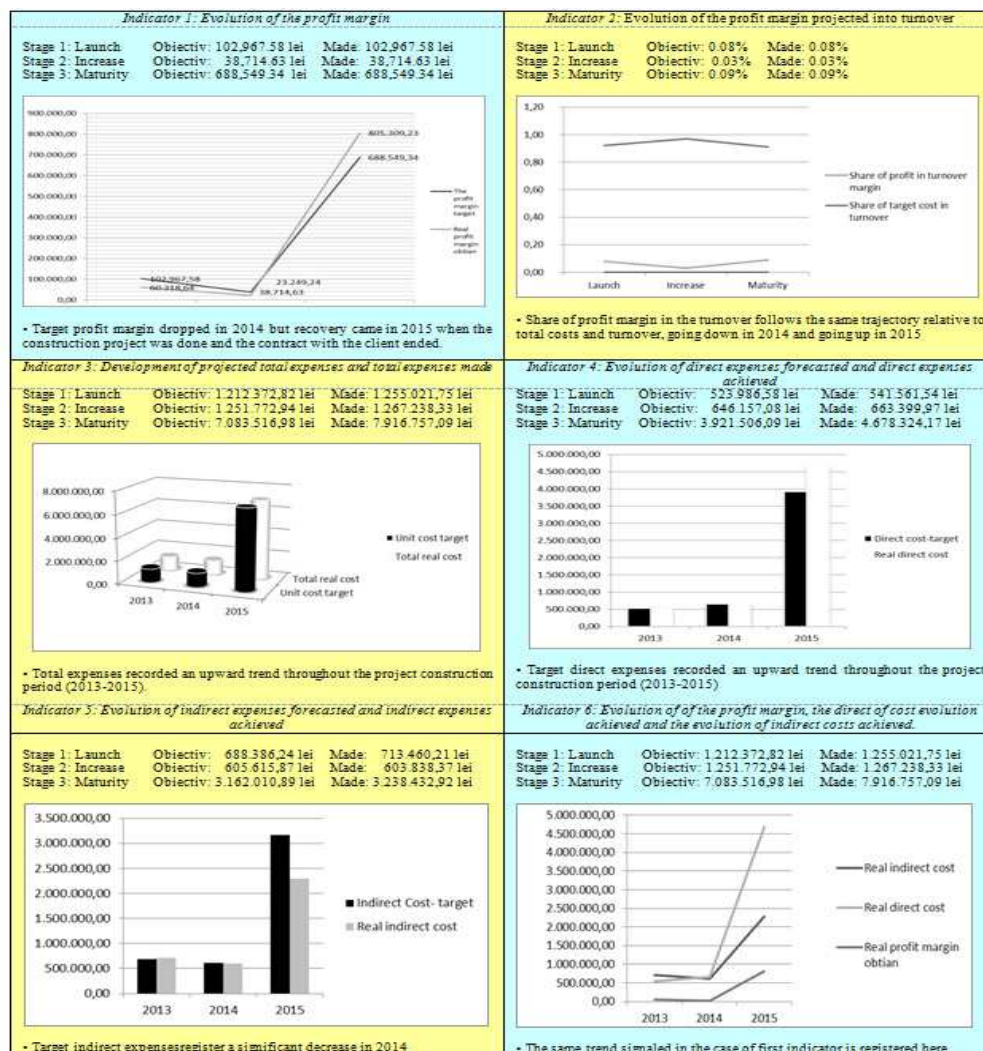


Fig. no 2. Dashboard of the entity

5. Conclusions

Performance analysis of an entity will be a very interesting subject for all specialists, especially the heads of departments, managers of entities, and all specialists. Choosing a suitable instrument for monitoring and measuring the performance of an entity is the key to business success and to guarantee effective decisions at managerial level. In our study, the choice of the dashboard was made based on accurately recording and measuring the performance in construction and economic entities based on a questionnaire analysis. After analysis of the data it was highlighted a number of advantages offered by this tool as follows:

- Approaching in a systemic vision of information relating to management activities and the creation of better conditions that ensure the function of the entity as a whole;
- Increasing the degree of substantiation of the decisions by providing operational and decision-makers of relevant information concerning the main aspects of the economic entity;
- Increase the responsibility of managers on the work done since their dashboard provides a summary form factors and critical areas pointing out such directions as to focus its future efforts;
- Improve the work of the management team due to the timely delivery of accurate information obtained through the dashboard;
- Ensure efficiency and high quality for reporting the information to various organisms, and also to the internal departments involved in the process of transmission and processing of information;

Use of appropriate criteria for assessing directions of analysis established through targets to the management of the entity.

6. Bibliography

- [1] **Ansari, L.S., Bell, J.E., Cypher, J.H., Dears, P.H., Dutton, J.J., Ferguson, M.D., Hallin, K., Marx, C.A., Ross, C.G., and Zampino, P.A.**, Target Costing: The Next Frontier in Strategic Cost Management, Chicago: Irwin Professional Publishing, p.11., 1997;
- [2] **Ansari S., J. Bel J.** Target-Costing - the Next Frontier in Strategic Cost Management, Irwin, Chicago, p. 56, 1997;
- [3] **Albu C., Albu N.**, Instrumente de management al performanței, volum 2, Ed. Economică, București, p. 106, 2004 ;
- [4] **Briciu S., Tabară N. (coord.)**. Actualități și perspective în contabilitate și control de gestiune”, Editura TipoMoldova, Iași, pp. 62-63, 2012;
- [5] **Bouquin H.**, Le controle de gestion, 2001;
- [6] **Căpușeanu S., Boca (Rakos) I.S., Barbu C.M.** Dashboard, Tool for Monitoring and Measuring the Performances of Entities within Mining Extractive, Mathematical Methods for Information Science and Economics, pp. 274-279, 2012;
- [7] **Dekker, H., and Smidt, P.** A survey of the adoption and use of target costing in Dutch firms. International Journal of Production Economics, 84(3), pp. 293–320, 2003.
- [8] **Hibbets, A.R., Albright, T., Funk, W.**, The competitive environment and strategy of target costing implementers: evidence from the field, Journal of Managerial Issues, vol. 15 (1): 65-81, 2003;
- [9] **Horváth, P., Niemand, S., Wolbold, M.**, Target Costing: State of the Art Report, Arlington, Texas: Computer Aided Manufacturing-International (CAM-I), p. 2, 1993;
- [10] **Kamarthi, S.V., Cohen, P.H., Demetter, E.C.** Cost minimization and estimation system for sheet metal parts, International Journal of Flexible Automation Integrated Manufacturing, 1(1), 69-79, 1993;
- [11] **Kerviller I., Kerviller L.**, Le control de gestion a la portee de tous, Editura Economica, 2000;
- [12] **Martinescu D.-M., Căpușeanu S.**, Environment and environmental effects of pollution. Model of eco-dashboard – a tool for analysis of environmental management performances, Metalurgia International, Vol. XIV (2009), no. 12 Special Issue, pp. 113-116, 2009.