

THE USE OF ACTIVITY-BASED MANAGEMENT: A STUDY OF MANUFACTURING COMPANIES IN THE REPUBLIC OF NORTH MACEDONIA

Angela Zafirova¹, Snezhana Hristova², Dushica Stevchevska-Srbinska³

¹International Balkan University – Republic of North Macedonia, angela.zafirova@ibu.edu.mk

²University American College Skopje – Republic of North Macedonia, shristova@uacs.edu.mk

³University American College Skopje – Republic of North Macedonia, dusica@uacs.edu.mk

ABSTRACT

Cost management, i.e. planning, calculation and cost control is the most important area of management accounting where cost calculation methods play the crucial role. Traditional methods date back to the time when direct labor costs were significantly involved in the cost structure but with the rise of support costs or indirect costs the cost accounting approaches have changed.

This paper presents the cost management models with a special focus on the method of calculating activity-based costs (ABC). The research part of the paper is carried out for chosen companies in the Republic of North Macedonia. By conducting a field survey in 24 companies from the manufacturing sector, the main research aim of this paper is to investigate the adoption of activity-based costing as a cost management technique among the employees. More specifically, the survey examines the adoption and the implementation of specific cost management techniques, or more precisely, the use of the ABC method and the benefits of its implementation.

Based on the information obtained from 216 responses, the findings indicate that the major part of the companies in the manufacturing sector in the Republic of North Macedonia practice the system of activities. The surveyed employees are familiar with the activity-based management and are highly aware of the benefits and the advantages of the implementation of the ABC system.

KEYWORDS

ACCOUNTING, AUDIT, COSTS, MANAGEMENT, ACTIVITY-BASED COSTS, ABC METHOD

JEL CLASSIFICATION CODES

M40 M41 M42

1. INTRODUCTION

A cost-based system of operations is an alternative system that can replace conventional systems that have been used to allocate costs. This system enables improvement of measures for increasing the performance of rationalization of production costs, providing appropriate and more precise pricing measures and selecting an optimal production mix. Every company is a complex organization that is characterized by modern but expensive technology and high flexibility of production processes. All of this contributes to changing the structure and character of individual costs. The high demand for particular

product or service leads to abandoning mass production and targeting the production of a limited number of products or services in one production line. Due to changes in technology in business entities, employees must be trained and possess a high level of knowledge and professionalism. Through their continuous education they contribute to reduce general costs (Ness and Cucuzza, 1995).

This paper elaborates the basic characteristics of the system of activities in the companies and the system for determining effect costs. The most important tools of the system activities will be analyzed. Managers that based their decisions solely on the information gathered from the traditional costs systems often lead them to a wrong working decision, and sometimes even had fatal consequences on the success and competitiveness of the business entities (Robey, 1991).

The system of activities implies the management of activities, as they are indicative of where the resources are spent, the company that consumes it and the product for which they are spent.

The ABC approach includes, as Shields and McEwen stated (1996): identifying the resources, identifying activities related to the holders at cost, allocation of activities by product and allocation of the cost per activity. The costs may be: the number of purchases of resources, the number of documents for receiving raw materials and materials, costs of activities related to warehousing, the number of invoices for sale, etc. Overall, managers who have real information about the costs can make better decisions for their outputs. The ABC systems directly measure the cost of the resources that are necessary for the realization of the activities and establishes a clear connection between the cost and the underlying activity. This system enables the managers seriously to think about the resources which may lead to a change in the decision-making process, for example, to focus on the mix of products and consumption, process improvement, improved product design, setting up new technology. As a result, these systems are often described as a supportive tool on how to manage, plan and control the systems, rather than as a cost systems (Foster, Swanson, 1997).

The main aim of this paper is to determine the degree of adoption of specific cost management technique ABC by the companies in the Republic of North Macedonia from an employee perspective. More specific research aim would be to investigate the characteristics of the system of activities, to analyze the activity system tools and to assess the implementation of the activity-based costing system by the companies from the manufacturing sector in the Republic of North Macedonia. The research interest was inspired by the fact that cost reduction activities seem to originate from the automation of operations. Traditional cost-based concepts that concentrate only on the costs incurred in the production phase and the allocation of the general costs on the basis of allocation keys related to the physical volume of production are not so adequate anymore, taking into account the rapidly changing modern business environment. An appropriate solution would be a system of activities that is designed to offer more accurate information about the costs.

The remainder of this paper includes the literature review part which summarizes the method of activity-based costs, accounting and management, followed by the research methodology, the results and the concluding remarks.

2. LITERATURE REVIEW

In the past, many companies have tried to meet the need for accurate and on-time cost information with only one cost system, which would result in success with limited production of products and services. In the era of the new changes in the 1950s, the shortcomings of the application of a system that provides managers with very scarce information are becoming more and more apparent. Thus, as early as 1940, the first form of process costing appeared in the United States when Caterpillar developed an activity-based costing system (Turney, 2010). About 10 years later, Longman and Schiff (1955) set up a theoretically similar system called function costing. A significant increase in indirect costs in the 1960s, which changed the structure of total costs, and thus the final business outcome, is considered the beginning of the ABC method. General Electric employees concluded that the indirect costs were the result of a decision made before the costs actually occurred. General Electric and Ericsson, independently of each other, came up with the idea of processing overhead through activity data. In 1971, Mr. Staubus also tried to develop a

similar concept. In the following years, more and more American companies developed systems to monitor the financial results of activities, and more importantly, they sought to manage these activities. The ABC method was first used in the manufacture of tractor parts - the production of a large number of products varying in complexity and batch size, and the term Activity - Based Costing was first mentioned in a case study by Harvard Business School John Deere Component Works (Rahman and Ghafeer, 2014).

There are many disadvantages of the traditional methods that have conditioned the need for the ABC method. According to Kaplan (Kaplan 1991), the main reasons for the emergence of the ABC method are the introduction of a modern way of production, the traditional accounting measurement of business performance motivates managers more to efficient business than to successful business, the managerial accounting is influenced by financial accounting, so the methods of thinking are transferred from financial to managerial accounting and all the general production costs were allocated to products and cost centers according to inadequate keys, and resulted in the necessary change that led to the emergence of the ABC method. The ABC model breaks down business into activities. It is important to determine the cost pools from which the costs are associated with the costs drivers or cost object. Direct costs are allocated directly to cost objects. Indirect resource costs are allocated to activities that are assumed to have caused them by applying a cost indicator, then activity costs are allocated to a cost object exemplary of an activity indicator (Shaw, 1998). In this way, as stated by Ahmadzadeh and associates (2011) costs are associated with resource use and cost facilities will allocated exactly those costs that are caused for their purpose as opposed to traditional methods that add average costs.

According to Roztocki and Weistroffer (2009), the ABC method provides more detailed information that will help you plan and control costs more effectively than traditional methods. In addition, the ABC method is more efficient and accurate in scheduling fixed costs.

Typically, two basic features of the ABC method are emphasized (Roztocki, Weistroffer, 2009):

- (1) identifies in the short term all costs arising from production, whether variable or fixed, and in the long run increases the proportion of those costs that can be effectively managed by reducing those that are difficult to manage (fixed)),
- (2) respect for the cost hierarchy (facility support costs, batch support costs, and unit product costs) is important for the efficiency of the ABC method, where the total cost must be first calculated, followed by unit costs.

The ABC costing method is emerging as a possible alternative to existing traditional costing systems whose shortcomings have begun to significantly impact product valuation and sales pricing. At a time when information technology is beginning to grow exponentially, accounting authorities Robert Kaplan and Robin Cooper are beginning to develop the ABC method as a new approach to scheduling rising overhead costs as an alternative to existing cost accounting systems (Drucker, 1999). This method is a significant means of streamlining a business by focusing and concentrating on the elements essential to achieving better business results. It increases transparency on complex phenomena and problems and helps to separate the essential from the irrelevant (Johnson, 1990). An Activity Based Costing (ABC) system is defined as a cost management approach that identifies the processes involved in delivering a product or service and the resources that those processes consume, ie. a methodology for planning and controlling the actual use of resources in the field of indirect costs, which charges the appropriate carrier with a specific cause-and-effect relationship (Cooper, et al., 1992). In other words, activity-based costing is a concept based on the principle that it is not the products produced by the company that generate the costs, but rather the activities that are performed in the processes of logistics, production, marketing and sales. The resources needed to support these activities result in some costs, which are then allocated to individual products. According to activity-based costing, enterprise products do not generate costs. Costs are generated by activities.

3. RESEARCH METHODOLOGY

The research part of this paper analyses the implementation of the system of activities in business entities in the Republic of North Macedonia. The main research question of this thesis is to determine the degree of adoption of specific cost management technique ABC by the companies in North Macedonia from an employee perspective. The survey was targeting only the companies from the manufacturing sector of North Macedonia. The criteria for choosing the entities was that they are from the manufacturing sector, have with different numbers of employees and to operate in the whole Republic.

For the purpose of the survey, a survey questionnaire was designed and distributed using a web platform. The survey originally was planned to include 150 employees in ten manufacturing companies, but due to the high collaboration, and due to easy way of data collecting, this number rose to total of 216 employees and twenty-four companies. Every questionnaire was fully answered by the participants. The questionnaire was of closed type and contained 14 adapted questions, i.e. statements, intended for employees in enterprises dealing with sales of products and services, where respondents had the opportunity to choose one of the three offered answer options (A = NO, B = PARTLY and C = YES). There was no selection of specific departments in a company, the survey was answered by different departments, i.e. sales, finance, accounting, management, etc. The questions that were an integral part of the questionnaire were carefully selected in manner to see if the enterprises are adapting and are familiar with ABC method. The obtained results of the research are summarized and presented in the following section.

In order to analyse the research aim a qualitative analysis of the research results was conducted. To this goal, the responses received are grouped according to the indicators from which they were derived and are appropriately weighted and calculated. The scoring and calculation is done by: each answer A) gets 1 point, each answer B) gets 2 points and each answer C) gets 3 points. The maximum number of points that can be derived from a statement or assertion (assuming that all respondents answered with the answer under C) is the sum of the number of respondents multiplied by 3, and the minimum is the sum of the number of respondents multiplied by 1 (assuming that all respondents answered A). The points obtained are divided by the number of respondents, thus providing an arithmetic mean for the particular statement. The arithmetic mean of each question and then of each investigative question was calculated. Then, according to this, the result can range from minimum 1 to maximum 3 points. If the arithmetic mean is greater than 2 the given variable (question) is confirmed, and if the arithmetic mean is less than 2 than it will be discarded.

4. RESULTS

The results are presented in one table, with an average of the responses obtained by the respondents (employees).

Table 1. Questionnaire for respondents' attitudes towards adoption of Activity-based costing (ABC) by the North Macedonian enterprises

No.	Question/Claim	A	B	C	Average*
1	Do you know what a system of activities is?	18	12	186	2,77
2	Are you informed with the system's strategy techniques?	22	36	158	2,62
3	Are you acquainted with benefits of implementing the ABC system?	24	30	162	2,64
4	Do you think that the level of manager's awareness of the significance of implementation of the system of activities is high?	30	18	168	2,64
5	Do the managers implement the system of activities in the company where you work?	82	44	90	2,04

6	Do you think that there are benefits for the company from the system of activities they are implementing?	44	18	154	2,51
7	Are there any reasons for using cost allocation in the company where you work?	38	22	156	2,59
8	Are you acquainted with activity-based management?	64	42	112	2,40
9	Are you acquainted with the tools in activity-based management?	26	50	140	2,52
10	Are you acquainted with the significance of strategic analysis?	28	24	164	2,63
11	Do you think that the management of activities can reduce the costs?	22	18	176	2,71
12	Has the financial situation been improved by using ABC?	18	16	162	2,48
13	Do you think that there is a great diversity of cost accounting methods based on ABC?	20	22	174	2,71
14	Do you agree with the statement that there is a large adoption of specific cost management technique ABC by North Macedonian enterprises?	16	24	176	2,74

*The arithmetic mean of each question and then of each investigative question was calculated. Then, according to this, the result can range from minimum 1 to maximum 3 points. If the arithmetic mean is greater than 2 the given variable (question) is confirmed, and if the arithmetic mean is less than 2 than it will be discarded.

Source: Author's Own Research

The first statement, adapted and set up for the research population, was: **Do you know what is a system of activities?** On this statement, the following results were obtained, from 216 respondents in the study population: A) No, answered 18 respondents, which is 8% of the respondents, B) Partly, answered 12 respondents, representing 6% of the respondents and C) Yes 186 respondents answered, which is 86% of the respondents. According to the results (Table 1), the employees surveyed are pretty much familiar with the system of activities in their company.

The second question, basically the second assertion, which is adapted to the research population, is: **Are you informed with the system's strategy techniques?** Out of the total of 216 respondents, the following results were obtained: A) No, 22 respondents, representing 10% of respondents, B) Partly, 36 of respondents, 17% of respondents and C) Yes, 158 representing 73% of respondents. According to the results (Table 1), the employees surveyed are familiar with the system of activities and with the strategy system put in place in the company where they work.

The third question, which is adapted and asked to the surveyed population is: **Are you acquainted with the benefits of implementing the ABC system?** The following results were obtained from a total of 216 respondents: A) No 24 respondents, which represents 11% of the respondents, B) Partly, answered 30, which is 14% of the respondents and C) Yes, answered 162 respondents, representing 75% of the respondents. According to the results (Table 1), 75% of the employees who work in a company which has implemented the ABS system are aware of the benefits that the system has.

The fourth question, which is adapted and asked to the researched populations, is: **Do you think that the level of manager's awareness of the significance of implementation of the system of activities is high?**

The following results were obtained from a total of 216 respondents: A) No, answered 30 respondents, which is 14% of the respondents, B) Partly, answered 18, which is 8% of the respondents and C) Yes, answered 168 respondents, representing 78% of the respondents. The employees think that the managers are aware of the significance of the system of activities for a company.

The fifth question, which is adapted and asked to the researched population, is: **Do the managers implement the system activities in the company where you work?** The following results were obtained from a total of 216 respondents: A) No, answered 82 respondents, which is 38% of the respondents, B) 44 respondents answered with Partly or 20% of the respondents and C) 90 respondents answered Yes, that is

representing 42% of the total respondents. Although the employees think that the managers are aware of the significance of the system of activities, it is not fully implemented in the sampled companies.

The sixth question, which is adapted and asked to the researched populations, is: **Do you think there is a benefit to the company from the system of activities they are implementing?** The following results were obtained from a total of 216 respondents: A) 44 respondents answered negative, with No, which is 21% of the respondents, B) 18 respondents answered with partly or 8% of the respondents and C) 154 respondents answered with Yes, what is represented 71% of the respondents. With 71% of the employees who answered positively to this question, there are benefits for the companies who have implemented the system of activities (Table 1).

The seventh question, or assertion, which is adapted and posed to the researched populations, reads: **Are there any reasons for using cost allocation in the company where you work?** The following results were obtained from a total of 216 respondents: A) No, answered 38 respondents, which is 18% of the respondents, B) Partly, answered 22 of the respondents, that representing 10% of the respondents and C) Yes, answered 156 respondents, representing 72% of the respondents.

The eighth question, which is adapted and asked to the researched populations, is: **Are you acquainted with activity-based management?** The following results were obtained from a total of 216 respondents: A) 62 respondents answered with No, which is 29% of the respondents, B) 42 respondents answered partly, or 19% of the respondents and C) 112 respondents answered yes, that are representing 52% of the respondents. Only 52% of the employees are familiar with the activity-based management (Table 1).

The ninth question, which is adapted and asked to the researched populations, is: **Are you acquainted with the tools in activity-based management?** The following results were obtained from a total of 216 respondents: A) No 26 respondents answered, or 12% of the respondents, B) 50 answered partly, which is 23% of the respondents, and C) 140 respondents, representing 65% of the respondents answered with Yes.

Only 52% of the employees are familiar with the activity-based management while 62% of the employees are familiar with the tolls used when implementing the activity-based management (Table 1).

The tenth question, that is adapted and posed to the researched population, was: **Are you acquainted with the significance of strategic analysis?** The following results were obtained from a total of 216 respondents on that given question: A) No, answered total of 28 respondents, which is 13% of the respondents, B) 24 answered with Partly, which is 11% of the represents and C) Yes, answered 164 respondents, which represents 76% of the total number of respondents.

The eleventh question, adapted and put to the researched populations is: **Do you think that the management of activities can reduce the costs?** The following results were obtained from a total of 216 respondents: A) 22 respondents answer with No, which is 10% of the respondents, B) 18 respondents answered with Partly, what represents total of 8% of the total of 216 respondents and C) 176 respondents answered with Yes, which represents 82% of the respondents. According to the results in Table 1, big percent of the employees believe that the management of activities can reduce the company's costs.

The twelfth question, which is adapted and put to the researched populations, reads: **Has the financial situation been improved by using ABC?** The following results were obtained from a total of 216 respondents: A) No, answered 18 respondents, which represents 8% of the respondents, B) 36 of the respondents answered Partly or 17% of the respondents, and C) 162 respondents answered with Yes, that is representing 75% of the respondents. According to the results in Table 1, 75% of the surveyed employees believe that the financial situation of their company has improved after the implementation of the ABC system.

The thirteenth question, adapted and put to the researched populations, reads: **Do you think there is a great deal of cost accounting methods based on ABC?** The following results were obtained from a total of 216 respondents: A) No, answered 20 respondents, representing 9% of the respondents, B) 22 of the respondents answered Partly, that are representing 10% of the respondents, and C) 174 with No, answered respondents, which represents 81% of the respondents.

The fourteenth question, that is, the assertion, which is adapted and put to the researched populations: **Do you agree with the statement that there is a large adoption of specific cost management technique ABC by North Macedonian enterprises?** The following results were obtained from a total of 216 respondents: A) No, answered total of 16 respondents, which is 7% of the total of 216 respondents, B) 24 answered Partly, or 11% of respondents and C) Yes, answered 176 respondents, which represents 82% of the respondents. According to the results (Table 1), 82% of the surveyed employees think that cost management techniques ABC is implemented in the most of the companies in the Republic of North Macedonia.

The main research aim of this paper is to determine the degree of adoption of specific cost management technique ABC by the companies in North Macedonia and the benefits from its implementation.

The summarization of the results can be seen in Table 2. It shows the tabulated calculated points, according to the answers obtained by the respondents, according to the previously presented methodology, for each answer under A = 1 point, for each answer under B = 2 points, and for each answer under C = 3 points. The coefficients are calculated for each question individually, as well as the sum is presented, that would confirm the general research aim.

Table 2. Calculated points from the surveyed population

Question	A- NO	B- PARTLY	B- YES	Σ points	Σ/N
	X 1 point	X 2 Points	X 3 points	Σ	$\Sigma/216$
1	18	24	558	600	2,77
2	22	72	474	568	2,62
3	24	60	486	570	2,64
4	30	36	504	570	2,64
5	82	88	270	440	2,04
6	44	36	462	542	2,51
7	38	44	468	560	2,59
8	64	84	336	484	2,40
9	26	100	420	546	2,52
10	28	48	492	568	2,63
11	22	36	528	586	2,71
12	18	32	486	536	2,48
13	20	44	522	586	2,71
14	16	48	528	592	2,74
				Σ	41,15
				$\Sigma/16$	2,57

Source: Author's Own Research

Taking into account that the results from all 14 statements are confirming (Table 2), what can be seen from the summarized data, which was collected through the survey questionnaire, it can be confirmed that the respondents basically are familiar with the meaning of the system of activities, they are informed with the system's strategy techniques; they are acquainted with benefits of implementing the ABC system; they are aware of the significance of its application; they think that the level of manager's awareness of the significance of implementation of the system of activities is high; they think that the managers implement the system of activities in the company where you work; they think that there is a benefit for the company from the system of activities they are implementing; they say that there are some argumentations for cost allocation in the company where they work; they are acquainted with activity based management; also, they are acquainted with the six most important tools in activity based management; they are acquainted with the significance of strategic analysis; they mostly agree that the management of activities can reduce the

costs; also, they said that they know what is ABC method; they agree that the Activity-Based Costing method, is a way to strategically lower the costs, they think that there is a great diversity of cost accounting methods based on ABC, and finally, they stated that they agree with the statement that there is a large adoption of specific cost management technique ABC by Macedonian enterprises.

Finally, according to what is presented above, it can be concluded that the main research aim is “positively answered”, that is, that in the enterprises from the manufacturing sector in the Republic of North Macedonia, there is high degree of adoption of specific cost management technique ABC and the employees in these companies are pretty much aware of the benefits and the advantages of its implementation.

5. CONCLUSION

In this paper, the main research aim was to determine the degree of adoption of specific cost management technique ABC by the enterprises from the manufacturing sector in the Republic of North Macedonia. In that manner, the specific research aims of this paper was to examine the characteristics of the system of activities, to analyze the activity system tools, and to assess the benefits of the implementation of the activity-based costing system by enterprises in the Republic of North Macedonia.

From everything mentioned in the literature review part we can conclude that there are several situations when it is necessary to use the ABC method especially when there is a need to determine the actual cost amounts of a large series of products. In that cases, using the ABC method produces the best results in manufacturing companies. The application of this or other more modern cost systems is because traditional cost systems give a false picture of costs. Robin Cooper and Robert S. Kaplan, proponents of the Balanced Scorecard, brought notice to these concepts in a number of articles published in Harvard Business Review beginning in 1988. Cooper and Kaplan described ABC as an approach to solve the problems of traditional cost management systems. These traditional costing systems are often unable to determine accurately the actual costs of production and of the costs of related services. Consequently, managers were making decisions based on inaccurate data especially where there are multiple products. Their thinking and their research conclusions, correspondent with the conclusions that arises from the research in this paper, or more precisely, the research also confirms that there is a large adoption of specific cost management technique Activity-based costing (ABC) and that the benefits are apparent. Instead of using broad arbitrary percentages to allocate costs, ABC seeks to identify cause and effect relationships to objectively assign costs. Once costs of the activities have been identified, the cost of each activity is attributed to each product to the extent that the product uses the activity. In this way, and as it was concluded, ABC in the companies from the manufacturing sector in the Republic of North Macedonia, often identifies areas of high overhead costs per unit and so directs attention to finding ways to reduce the costs or to charge more for costlier products.

In this research, a survey questionnaire was designed for employees of enterprises of different companies throughout North Macedonia, with a special focus on the manufacturing sector. The employees had a possibility to answer the questions whether there is an adoption of specific management technique, whether the application of the same technique is at satisfactory level and how beneficial they think that the method ABC is. From the questionnaire we conclude that the respondents basically are familiar with the meaning of the system of activities, they are acquainted with the six most important tools in activity-based management and believe that the benefits from the implementation of the ABC methods are apparent. Based on the information obtained from 216 responses, the most important statement or conclusion is that major part of the manufacturing companies in North Macedonia practice the system of activities. The reason why other companies were not using it is because it is time consuming and expensive, but on the other hand it is the most useful method in order to reduce the costs and to work more effective and efficiently. The companies that are not using this method are discouraged due to system and behavioral issues.

Today there is a large adoption of specific cost management technique such as activity-based costing (ABC), and there is always room for improvement and for implementation of this kind of technique in the North Macedonian enterprises.

The conclusions reached in the paper cannot be generalized to the entire economy in the North Macedonia nor to the companies globally. It is so because the research was limited only to one sector in North Macedonia (manufacturing sector) and only 24 companies who were chosen were part of the sample. This paper represents a good and a solid start for a research in this area since it is a first study of this kind in the Republic of North Macedonia and can be continued in the near future.

REFERENCES

- Ahmadzadeh, T., Etemadi, H., & Pifeh, A. (2011). Exploration of factors influencing on choice the activity-based costing system in Iranian organizations. *International Journal of Business Administration*, Vol. 2 (1), 61-70.
- Cooper, R. and Kaplan R. S. (1992), Activity-Based Systems: Measuring the Costs of Resource Usage, *Accounting Horizons*, Vol. 6 No. 3, September, pp. 1-13
- Drucker P. F., (1999), *Management Challenges of the 21st Century*. New York, Harper Business.
- Foster, George and Dan W Swanson (1997). "Measuring the success of activity-based cost management and its determinants," *Journal of Management Accounting & Research*, vol. 9, pp. 109-141.
- Johnson, Kaplan (1991): *Relevance Lost: The Rise and Fall of Management Accounting*, Harvard Business School Press, Boston
- Johnson, H. T., (1990), "Activity Management: Reviewing the Past and Future of Cost Management," *Journal of Cost Management* Vol. 8 (1), p.23-44
- Longman, D.R., Schiff, M., (1955), *Practical Distribution Cost Analysis*, R.D.Irwin, The university of California
- Ness, J. A. and T G Cucuzza (1995). "Tapping the full potential of ABC," *Harvard Business Review*, July-August, pp. 130-138.
- Rahman, A. A. A. A., & Ghafeer, N. A. M. (2014). Using activity-based costing to measure customer profitability: Customer-specific selling and marketing expense analysis - "An application study in an industrial company". *Interdisciplinary Journal of Contemporary Research in Business*, Vol. 5(9), 162-176.
- Roztock, N., & Weistroffer, H. R. (2009). Information technology investments: Does activity based costing matter? *The Journal of Computer Information Systems*, Vol. 50(2), 31-41.
- Robey, D., (1991), *Designing Organizations*, Third Edition IRWIN, IBurr Ridge, Illinois.
- Shaw, Russell (1998). "ABC and ERP: partners at last," *Management Accounting*, November, pp. 56-58.
- Shields, M. D. and McEwen, M. A. (1996). Implementing Activity-Based Costing System Successfully. *Journal of Cost Management*, Vol. 9(1): 15-22.
- Turney, P. B. B. (2010): „Activity-Based Costing: An Emerging Foundation for Performance Management”, str.3-8