

ACCOUNTING SYSTEMS FOR COST MANAGEMENT USED IN THE ROMANIAN ECONOMIC ENTITIES

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ABSTRACT

The accounting information lies at the basis of the decision making process, both inside and outside of the organization. In this paper we try to determine through an empirical research the attitude of the managers in the Romanian companies towards the information generated by the managerial accounting. This attitude is seen in terms of: the utility of the managerial accounting information, the degree of usage of the managerial accounting information, the instruments for collecting, analyzing and interpreting the managerial accounting information, the costs and benefits derived from obtaining the managerial accounting information. Improved management accounting information can only come through a participation of managers to management control. Our findings indicate that even though the managers allocate only a third of the resources of the accounting department for the management accountants, in most companies functions a cost-monitoring system and the managers are satisfied with the cost-benefit ratio of using managerial accounting. The study is relevant for the use of the management control techniques in Romania.

KEY WORDS

Cost management, accounting systems, empirical survey, Romanian economic entities

INTRODUCTION

The objective of any organization is represented by the increase of revenues and the decrease of costs. Even if the business environment and the conditions under which a business can be undertaken have changed, many Romanian organizations changed nothing within the classical procedures and methods which they apply: planning – controlling – sanctioning. Nowadays, when the economy undergoes multiple and unpredictable changes, the a priori planning model must be put aside, and an *a posteriori* analysis of a schema meant to motivate reaction is needed: measuring + acting + reacting = leading (Cazacu, 2009). In the “reactive” organizations, the management control becomes a proactive instrument for performance enhancement and value creation.

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We can assert without any fear for mistake that nowadays, the ongoing change has become a constant, the organizational environment being forced to align itself to the new tendencies and technologies, and even to a whole new definition of the organization. In order to survive, the economic entities must change; reinvent their activity in accordance with market movements.

For a long period of time, management was considered to be an art in itself, a talent appropriated through trial and error. A variety of individual styles, often based on creativity, human rationality, intuition and experience, were used to solve problems of similar characteristics, to the detriment of quantitative methods and scientific approaches. However, the complexity of businesses and of the business environment has increased a great deal during the past decades. There are a few major causes that determined this increase, among which the following two may be mentioned: the numerous possible solutions and the difficulty in predicting the long term consequences due to the increase of uncertainty. The effects of the mistakes made within the decision making process can be dramatic due to the complexity of operations and to the chain reaction that might be caused by an error within various micro and macroeconomic sectors.

One of the characteristics of any social and economic system, which also encompasses the company, is represented by the finality, that is, the tendency to develop towards the achievement of certain objectives. If we admit the universality of the entropy law, according to which the natural order tends to turn into disorder, we can assert that the entropic state also characterizes the social and economic systems. Under these conditions, the commercial companies, as systems, must continually adapt to the influence of some disturbing factors – exogenous or endogenous – which withstand or limit the achievement of pre-established objectives. This adaptation or adjustment of the company's operation is done through the aid of the managers' activity, which, in essence, represents a chain of interdependent decisions.

Cost management is much more than measuring and reporting costs. It is a philosophy, an attitude, a set of techniques designed to create more value at lower costs. It is a philosophy for improvement because it promotes the idea of searching for courses of action so that the organization may decide appropriately towards creating value. Cost management is a proactive attitude because costs are not simply incurred; they are the result of certain decisions. It is not enough for the costs to be calculated; there must be a direct concern for making decisions that affect costs. Cost management is also a set of techniques which frame the cost calculation system that functions towards aiding the decision making process, the achievement of the goal and activities of the company.

The aim of this article is to establish the attitude of the managers in Romanian companies towards the information generated by managerial accounting, and also, to identify those calculation and reporting models which are comprehensible and relevant for the underlying managerial decision. From our point of view, for understanding and exploiting the managerial accounting information generated by any management accounting system, the comprehensibility may have even a more important role than the relevance.

The decision which brought about the present research was influenced by the diverse approaches embraced by the economic entities in what concerns the role, utility, managerial accounting's organization and functioning, as well as the purveyance, presentation and usage of the information requested by the management. This diversity represents the consequence of approaching and understanding managerial accounting as a tool for decision making.

We consider that the attitude of the managers in Romanian companies towards the information generated by managerial accounting is essential in gaining a competitive advantage throughout the lifecycles of an economic entity with the market economy. The comprehensibility and relevance of managerial accounting shall contribute to the improvement of the Romanian accounting professionals' image in the eyes of the management, as the manager has to "obtain the results (generally, expressed in terms of amounted and dated objectives) through other persons' actions" (Anthony, 1993). Thus it evolves from a "necessary evil" to an indispensable instrument for the decision making process.

The literature suggests that adoption level variance of accounting innovations cannot solely be explained by industry effects, as available evidence points to firm characteristics that stimulate or hinder adoption of innovations (e.g. Gosselin, 1997; Chenhall & Langfield-Smith, 1998; Ax & Bjornenak, 2005; Maiga & Jacobs, 2005, quoted by Naranjo-Gil, 2009). In particular, the literature suggests that these firm characteristics fall into two categories. The first category of characteristics concerns the factors that determine the potential benefit of adopting innovative management accounting systems. The second category of factors concerns the extent to which organizations rationally adapt to situational needs. As characteristics we chose for our survey we mention the size of the company (computed in terms of turnover, total assets and average number of employees), the industry and the type of capital.

One of the contributions of this work is the attempt to fill a gap in the international literature related to the Romanian accounting system, as it is very poor (Barbu *et al.*, 2009). Secondly, our study suggests that the use of management accounting techniques is determined by some characteristics of the company. We also show that the history and the characteristics of the Romanian accounting system determine the degree of implementation of the management accounting systems. Finally, our work is preoccupied with the diffusion of the management accounting techniques in the companies in Romania.

As for the research methodology, we first present a review of the literature, as it "represents a starting point for the selection of the directions for the future research" (Ittner & Larcker, 2002). Afterwards, through an empirical research (achieved by sending a questionnaire through e-mail to about 400 companies) we try to establish the situation in Romania concerning the attitude of the managers about the management control. The study is structured in:

- Review of the Romanian and foreign literature, including the Romanian regulations;
- Outline the research approach;
- Present the arguments that support our results and analysis;
- Present the conclusions, including the work which may still be required.

1. REVIEW OF THE ROMANIAN AND FOREIGN LITERATURE

Can the present Romanian accounting system produce relevant information for decision-making? This is an objective of our study. We are trying to give an answer to this question starting from an empirical research, based on a questionnaire we presented to a number of managers in our country. In fact, we try to leave aside our status of “producers” of accounting information and to understand the perception of the Romanian managers about the accounting information that support their economical decisions: is the behaviour of the managers in our country strongly influenced by the accounting information or do we continue to produce accounting information only for external users?

Before the year 1940, Romanian accounting literature recorded no debate over cost accounting. Evian (1947) appreciates that the “first scientific work on industrial costs” is the doctoral dissertation of Tarția of 1940. Soon after, other cost accounting texts were published, such as Evian (1947), most of which influenced by cost accounting debates in Germany. Interestingly, the German accounting theories and debates were closely followed in Russia: beginning with 1925, monist accounting plans of German origin were implemented. These accounting plans were based on the principle of circuit, according to which account classes model the sequence purchase – production – sale (Richard, 1995). Owing to the fact that the German model had the war economy as its starting point, it was fitted for the Soviet command economy to follow a similar approach with respect to cost accounts. In Romania, the new scheme of cost calculation was similar to that advocated by Evian (1947), itself inspired from German literature.

Starting with the year 1948 and until 1989, in Romania, because of the political and economical context, was developed an accounting system that served only the informational interests of the state, as the only user of the accounting information. This reality shouldn't be misinterpreted as a minimization of the importance of accounting in our country in the four decades of centralized economy. On the contrary, accounting had a very important role in the process of the organization of the economy as a whole because it became a support for the state plans development. Back then we could obtain fair, uniform and relevant information for state's authorities, starting from an accounting system organized on rigorous criteria (Lapteș, 2007).

In the beginning of the '90 the Romanian accounting system was reconsidered. In literature and in some countries in practice (Joseph *et al.*, 1996; Caglio, 2003; Jones & Luther, 2006) there is a clear separation between financial and management accounting (the so-called two-cycle accounting system). Alike other continental European countries, Romania has a two-stage accounting system (Feleagă, 1996), mainly due to the French influence during the first step of reform and to the use of information produced by financial accounting mostly by the State (Albu & Albu, 2007).

This was the reality until the year 2000. Managerial accounting, the second informational level of the Romanian accounting system, built after 1 January 1994 in a double manner in order to fulfil exclusively the informational needs of the

managers, as internal users, remained a secondary practice of the company's accounting. Among the causes of this fact were identified: the lack of reporting constraints, the lack of competition, the lack of specialists, the lack of an economical education of the managers, the weak development of specialized software (Glăvan *et al.*, 2007).

We consider that for the accounting in our country at least at a theoretical level, after the appearance of Order 403/1999, and afterwards of Order 94/2001 a qualitative change was registered with the implementation of the International Accounting Standard Framework. Starting from January 1 2006 the process of harmonization of the Romanian accounting with the European and international tendencies was replaced by the attempt to comply with the European accounting directives by issuing the Order 1752/2005 and afterwards Order 3055/2009. As for the management accounting, Order 1826/2003 was issued. In this period were also identified foreign investments in Romania which involved the appearance of the multinational companies. This determined the change of the company's organization by the introduction of Management Accounting and Control Departments that produce information for managerial purposes. The accounting transactions became more complex needing a high degree of specialization and the managers needed trustable financial executives. According to Law 82/1991, the management accounting organization must be adapted to the specific of the activity. When the law first appeared, management accounting was considered optional, when actually, only the way in which it was carried on was optional and adapted to the specific of the activity (Law 82/1991). For the managerial accounting organization, the usage of the class 9 accounts – "Management accounts" – is not compulsory (OMFP 3055/2009).

Depending on the undertaken activity, the managerial accounting shall insure, mainly, the recording of operations related to collecting and apportioning costs to destinations, activities, centres, production phases, cost centres, profit centres, whichever the case may be. It shall also insure the calculation of the acquisition cost, production cost, processing cost of the goods entered into production or of the finished goods, the cost of the executed jobs, rendered services, work in progress, fixed assets in progress etc., from the production centres, commercial centres, service centres, financial centres and other areas of activity.

With the aid of managerial accounting, legal persons can obtain information meant to insure an efficient management of the company, respectively:

- Information regarding the cost of goods, works, services, for the legal persons who undertake production activities, purveyance of services, as well as information related to the cost of goods sold for the persons who undertake trade activities;
- Information on which the budget and the control of the operating activity are based;
- Information necessary for the financial analyses which help underlie the managerial decisions regarding the directions of the internal activity;
- Other information imposed by the achievement of a competitive management (OMF 1826/2004).

Briefly, the evolution of the Romanian cost accounting can be presented as follows:

Table 1. Short history of the Romanian cost accounting

Cost accounting	Generation	Concepts and practices used in Romania	Concepts and practices used at international level
	Generation I (until 1947)	<ul style="list-style-type: none"> • There are poor proofs about the concepts and practices used 	<ul style="list-style-type: none"> • Production cost • Full cost • Computation procedures • Production cost and selling price computation mechanism
	Generation II (1948 – 1994)	<ul style="list-style-type: none"> • The concepts of the previous generation are kept • They tried to bring new concepts 	<i>At an international level (used in Romania – from 1960)</i> <ul style="list-style-type: none"> • THM method; • GP method; • Direct-costing method; • Standard costing method etc.
	Generation III (1994 – nowadays)	The concepts of the previous generation are kept except for the computation of the selling price	<i>At an international level</i> <ul style="list-style-type: none"> • ABC method; • Target costing method; • UVA method, etc.

Glăvan *et al.* (2007) conducted a research concerning the relevance and quality of the accounting information in the managerial decisions. The conclusion of their study was that the accounting information is used in the managerial decisions (83% of the managers consider it important and 67% of the managers considered it necessary). Yet, the most important elements are taken from the financial accounting and not from the managerial accounting (66% of the managers answered that they use financial accounting and/or financial statements and nobody answered that uses managerial accounting). This answer can also be explained by the fact that 83% of the companies analyzed organize financial accounting and only 17% financial accounting, managerial accounting and management control. 17% of the responding managers cannot appreciate the role of the accounting information in the decision-making process. 17% of the managers consider that the support of the managerial decision is the information offered by the market and mass-media. In the same time, most of the managers trust the accounting information (67%), that they consider it is available on time (67%).

One of the causes of the lack of relevance of the information provided by the management accounting is that, despite the changes in the economic environment, the accountants continue to use the same tools and traditional techniques (Almasan & Grosu, 2008). The success of the changes in the accounting system depends on the manner in which the behavioural and organizational implications are managed (Shields, 1995). The appropriate implementation of these changes is less successful if they are seen as simple technical innovation. Most of the studies are focused especially on the users' perceptions (managers), while the perceptions of information providers were often ignored (Pierce & O'Dea, 2003). We consider that we overcame this problem, as the respondents to our questionnaire were both general and financial managers of the companies.

Nowadays, the accounting activity can be automated. The main problems of the accounting system from management perspective are not technical or structural, but concern the needs of a more effective management accounting for management itself. The IT system lies at the base of this process, delivering the information to managers. Some researchers consider that there is an impact of the information technologies on managerial accounting (Friedman & Lyne 1997ⁱ; Caglio 2003ⁱⁱ), while other studies cannot offer such a certainty and assert that the impact is indirect, through the control (Scapens & Jazayeri 2003ⁱⁱⁱ; Granlund & Malmi 2002^{iv}). As influences of the information technologies on the managerial accounting and control, we would like to mention the following:

- The transition from a traditional management control system based on figure generated by accounting to a management control system based on non-financial, operational data (Dechow & Mouritsen, 2005);
- The change in the management accountants' mission, which focuses more on analytical tasks (Davis & Albright, 2000);
- The change in the knowledge required for management accountants. They must possess IT skills (Azan, 2009);
- The decrease in the time spent by management accountants for accomplishing tasks; the change in the accounting methods used, after the implementation, the new methods being based on profit centres, financial ratio analysis, non-financial performance indicators, internal audit; the improvement of the decision making process and of the management need of working capital; the increase in the flexibility of information processing, integrating the accounting information. All these led to a greater amount of knowledge which is also gained in time (Loo *et al.*, 2008).

Within the empirical study, we shall conduct an analysis of the degree of usage of the information systems.

In a study analysing the job advertisements for the management controllers, Albu & Albu (2007) notice that:

- The instruments of focusing the actions and behaviours of the actors are mostly represented by the budgets and are used mostly in the subsidiaries and the foreign capital companies;
- The modelling of the relationships between the resources and the aims are the decision making processes;
- There is a bond between the strategy and the daily issues.

We consider that this study is relevant for the situation in Romania because the offer in the enterprises "corresponds to a certain revelation of the practices in the organization" (Bollecker, 2000).

According to Taylor & Osipenkova (2003, quoted by Moilanen, 2006) the major issues in the way of management control development in Russia are the domination of the tax accounting and the inadequate practices of financial accounting.

In Poland, the big companies use more advanced techniques than the small ones. Szycha (2002) identifies as contingency factors for the management control in Poland the changes in the accounting regulations, the increase of the competition, the changes in the international economy, the privatisation of the previously state-owned

companies, the development of the stock exchange, the foreign capital and the impact of information technologies and the knowledge acquired by the managers.

For Estonia, the following contingency factors are identified by Haldma & Laats (2002): the tradition and the knowledge from the centralised economy, the need for the quick solving of the daily management problems, the economic and accounting environment, the organization, the technology and the strategy.

A study concerning the management control was conducted by Hrdy & Horova (2007) for a sample of companies in the Czech Republic. More than one half of companies consider criteria measuring performance. Companies are able to use different types of investments criteria (65.6%), but a lot of companies don't consider the actual effects of investments (41,1%). The time horizon of processing the system of plans and budgets in the companies is usually one year (78.9%). Most of the companies don't consider rolling budget principles (73.3%) and don't follow any alternative plans and budgets (55.6%). The fourth part of the study demonstrates that the informational systems of companies concerning the strategic financial management are relatively well organized. The authors consider that "the only negative thing is that the most important tool Balanced Scorecard is not used in so large extension" (18.9%).

2. RESEARCH METHODOLOGY

The goal of the research is represented by the determination of the attitude of managers in Romanian companies towards the information generated by the managerial accounting. The objectives of the research are represented by the transposition at the operational level of the research goal. In this paper, the objectives are the following:

- establishing the utility of the managerial accounting information;
- establishing the degree of usage of the managerial accounting information;
- identifying the instruments for collecting, analyzing and interpreting the managerial accounting information;
- establishing the costs and benefits derived from obtaining the managerial accounting information.

For this research we used primary sources of information meaning general and financial managers from the targeted companies, considered to be the survey unit for this research. When we choose the characteristics for the representativeness of the sample we used secondary sources like National Statistics Institute and the site www.listafirme.ro.

For data gathering we used a direct and occasional contact with the subject, and so we are dealing with a research based on a quantitative analysis. For the data gathering the instrument used was the questionnaire^v in which the questions were both closed and mixed but the respondent was also given the option to have a different response than the ones presented. Both types of questions had multiple choice answers. So based on this we can say that the questionnaire was very well structured. The structure of the questionnaire followed the research objectives. This structure gives identification information, together with classification information (industry, turnover, total assets, social capital structure) and basic information regarding the respondents. For the

layout of the questionnaire the segmentation principle was used, that means that the questionnaire was divided in order to obtain the four wanted objectives, as they were stated above. For this process there were used both categorical and continuous variables, the difference between them being that the categorical ones can take a limited number of values, as opposed to the continuous variables that can take an unlimited number of values. The statistical population was defined as the Romanian based companies. The basic characteristic used in order to set the representativeness degree for the sample is the industry in which the company activates. All specific industries provided by the National Statistics Institute for 2007 (www.insse.ro) have been restrained in order to fit a larger activity domain such as: services, distribution, production, others, and as a result we have the following relative frequency for the four activity domains in Romania:

Table 2. Activity domains used in our research

Activity domains	Percentage
Production	17%
Services	39%
Distribution	37%
Other	7%

In order to have a representative sample we proceeded in randomly layer sampling based on the relative frequency of the four activity domains stated above. As a result: approximately 17% of the sample consists of companies that have as the main activity object production, approximately 39% of the sample consists of companies that activate in the service area, 37% companies in distribution, and approximately 7% in other domains. The companies from the sample that was used were differentiated based on the following criteria: turnover in 2008, total asset value in 2008, average number of employees in 2008 computed using the methodology of the National Statistics Institute, activity domain and capital nature.

3. DATA PROCESSING AND ANALYSIS

The questionnaires were carried out using Ms Word and they were sent to respondents through email. Approximately 400 questionnaires were sent in July 2009, and 62 responses were obtained. Furthermore the data were codified, meaning that the responses for the closed questions from the questionnaire were given a number, so for the divided questions the categorical variables have values 1 or 0 for affirmative or negative answers; for the categorical values measured on an ordinal scale the values allocated were between 1 and 5 in correspondence with the importance stated by the respondents. All the data were processed using the statistical application SPSS, which helped in analysing and interpreting all of them. The data analysis had the following objectives:

- Determining the central course, for the categorical variables we used the mode for the scalable variables for the nominal scale and the median for the ones scaled on the ordinal scale; in the case of the continuous variables the arithmetic mean was used for the determination of the central course of the measurable variables from the range scale and the geometrical mean for the

determination of the central course of the measurable variables from the proportional scale;

- Characterization of the statistic allocation; to achieve this objective histograms were made and also the values of the indicators Skewness & Kurtosis were analyzed;
- Measuring the connection degree between variables; the correlation was tested using the contingency coefficient for variables measured on the nominal scale, also using rang correlation coefficient for the variables measured on the ordinal scale, and the correlation coefficient for the variables measured on the range scale or the proportional scale;
- Testing the significant difference between groups; we used the χ^2 test for variables scalable on the nominal scale, the U test for the ones scalable on the ordinal scale, and the Student test for the ones scalable on the range or proportional scale;
- Outlining the causable connections between variables.

The analysis of the information was done by using descriptive statistic indicators (central course indicators) and also by testing statistic hypothesis. In order to test a static hypothesis it is necessary to follow the steps below:

1. *Hypothesis enunciation.* This stage supposes the enunciation of two hypothesis – the nil hypothesis (noted Ho), which represents the tested affirmation regarding the statistical population, and the alternative hypothesis which represents the accepted hypothesis in the case that the nil hypothesis is rejected.
2. *Identifying the appropriate statistical test.* So, the Student test was used for hypothesis regarding the population mean, the contingency coefficient for determination of significant statistic association between categorical variables, the rang correlation coefficient for variables measurable on the ordinal scale.
3. *Specification of the significance degree.* Most frequently a significance degree of 5% was used which indicates a probability of results guarantee of 95%.
4. *Setting the decision regulation.* The decision regulation consists of the comparison between the values obtained using the statistic test and specific already known values of this statistic test, and the acceptance or rejection of the nil hypothesis based on the result of the comparison.
5. *Data gathering and calculation of the statistic test.* The SPSS application calculates a specific value for the hypothesis evaluation, named Sig (significance) based on which the nil hypothesis is accepted or rejected. In the case of the Student test in order to reject the nil hypothesis Sig must have a value higher than 0.001 (there are significant static differences between the mean value for the first subgroup and the mean value for the second one). In the case of test χ^2 the specific decision regulation is to accept the nil hypothesis if Sig \geq 0.05 for the contingency coefficient and to reject it if Sig $<$ 0.05 (there are significant statistic differences between the two nonparametric variables analysed). The same values are also specific for tests Smirnov, Kolmogorov, Levene and ANOVA. For the Kendal test the specific decision regulation SPSS is to accept a nil hypothesis for Sig values $>$ 0.005 and reject the nil hypothesis for Sig values \leq 0.005.
6. *Making the statistic decision.*

4. RESEARCH RESULTS

In order to distinguish the big companies from the small ones we used as criteria: total turnover, total assets and number of employees. For the determination of a powerful correlation between the two criteria the rang correlation coefficient was used, because both variables were measured on an ordinal scale. It has been discovered that there is a positive correlation of 0.761, which indicates a strong correlation between them. In conclusion any of them can be used as a differentiation criteria regarding size.

Objective 1: Determining the utility of the managerial accounting information

Approximately 98.36% of the Romanian company managers considered that the managerial accounting information is useful for business development. 61 persons answered this question.

The most important sources of information in managerial decision process are represented by: financial accounting, managerial accounting, financial reports and the market. A differentiated analysis having as criteria the turnover of the company indicates the fact that for companies with turnover below EUR 1,000,000 the most important source of information are the financial reports and least important one is the mass media. The respondents from the companies with turnover over EUR 1,000,000 considered that the most important source is the market.

The managerial accounting is used in making the following decisions:

- monitoring and lowering costs (74.63%, out of 61 persons that answered the question);
- giving up on certain types of products, projects (50%, out of 61 persons that answered the question);
- setting the selling price (47.3%, out of 61 persons that answered the question);
- externalization decisions (52.36%, out of 58 persons that answered the question);
- to accept additional projects and orders (48.65%, out of 59 persons that answered the question);
- to increase the product quality (29.73%, out of 60 persons that answered the question).

The differentiated analysis having as criteria turnover indicates the fact that companies from the first interval have allocated a maximum importance for the utilization of managerial accounting information in achieving other objectives and also strategic planning and cost reducing, this last objective has also great importance for companies with turnover over 1,000,000 EUR together with the profitability centre analysis. It can be noticed that for the companies with turnover over 1,000,000 EUR the objectives are much diversified and the importance degree is levelling, we can detect a high importance for strategic planning and a below medium importance for externalization and decision acceptance.

The cost – benefit analysis has the most significant influence in the process of making managerial decisions, without having noticeable differences between the subgroups resulted after applying the turnover criteria as a filter.

66.7% of the respondents consider that the managerial accounting information is supplied on time in order to take certain decisions, and no respondent disapproved its importance. Everybody answered this question.

For this objective we tested the following hypotheses:

Hypothesis 1: There is a connection between the company size (the value of the turnover) and the utility of the managerial accounting information in taking managerial decisions.

Ho: There is no connection between them

Ha: There is a connection between them

The significance threshold Sig. Hi square test is lower than 0.018, which indicated that from the statistic point of view the correlation is significant.

We consider that larger companies give a higher importance to the information generated by managerial accounting in the process of making decisions because these companies with a more complex activity have a more sophisticated cost control tool and also better implemented control systems. Smaller companies base their decisions mostly on the information provided by the market, use logic, and they do not use specialized information provided by a separate department of managerial accounting. It should not be neglected that frequently the cost of obtaining managerial information is significant and can overcome the benefits estimated. The managerial accounting, although obligatory, according to Law 82/1991 it is not used, for small companies, according to this study. Regarding the managerial accounting there are no reports that need to be handed in to the fiscal authorities, so as a result the companies do not consider necessary allocation of resources for this activity.

From the frequency distribution we can see that 69.575% of the companies with turnovers lower than EUR 1,000,000 do not give any importance to the information provided by managerial accounting. On the other hand, for companies with turnover over EUR 1,000,000, 68.75% consider the managerial accounting information as very important in taking decisions.

Hypothesis 2: There is a connection between the size of the company (the value of the turnover) and the utility of the managerial accounting for the computation of the profitability of the responsibility centres.

Ho: There is no connection

Ha: There is a connection

The significance threshold Sig for the Hi square test is 0.01, meaning that from the statistical point of view we have a significant correlation.

The company's organization structure in responsibility centres is found mostly when looking at large companies with turnovers of over EUR 1,000,000. So as a result in small companies due to the lack of this responsibility centres we cannot compute their profitability. Another explanation is that the ERP software, which implement the structure of responsibility centres, are used mainly by large companies, as opposed to

the small companies that use financial accounting software, which allows expenses to be registered only based on their nature and because of this, they are obligated to use MS Excel in order to compute these profitability. If we use Ms Excel for a large volume of data the results can be redundant and can contain errors, and that will generate a lack of trust regarding this type of information.

From the frequency distribution we observe that 78.26% from the companies with a turnover lower than EUR 1,000,000 do not use the managerial accounting information for the profitability calculation of the responsibility centres. In contrast, 75% of the companies with a turnover higher than EUR 1,000,000 use the managerial accounting information for the profitability calculation of the responsibility centres. 61 persons answered this question.

Hypothesis 3: Most managers agree^{vi} that the financial accounting information is useful.

Ho: There are no significant statistic differences between the estimated value for the population and the formulated hypothesis value.

Ha: There are significant differences between the estimated value for the population and the formulated hypothesis value.

We have tested this hypothesis using the Student test. In this case Sig is $0.324 > 0.001$, which implies the acceptance of the nil hypothesis, meaning that there are no significant statistical differences between the value of the median for the tested population and the value tested, meaning that most managers consider useful the accounting information.

This aspect indicates that in most Romanian companies, the management considers as very important the accounting information in order to obtain a competitive advantage and as a consequence to expand its business. In a period of economical crisis when the supply and demand of products is reduced drastically the management can achieve its objectives by using cost control strategies. In order to apply these strategies successfully the Romanian companies must realize the importance of managerial accounting information, and will need to take certain measures in forming a department for this activity, if there is not one now, or to improve the existing one. The objectives of these measures will be to obtain managerial accounting information in a short period of time and with the lowest costs.

Objective 2: Setting the utilization degree for the managerial information

According to Romanian regulations, for cost calculation, the expenses registered in financial accounting using as criteria their nature are classified in managerial accounting in:

- a) Direct expenses
- b) Indirect expense
- c) Selling expenses
- d) Administrative expenses (OMF 1826/2003)

The most frequently used type of registration and classification of these expenses in managerial accounting has as criteria their evolution (used by 92.31% of the

respondents), meanwhile 66.67% prefer to register these expenses having as criteria their destination (direct and indirect). One respondent indicated that he registered the expenses based on the projects that he has. 62 persons answered this question.

In Romania the general manager conducts the managerial accounting using specific accounts, either by enlargement of the financial accounting accounts, or by the help of a technical – operative own system (OMF 1826/2003).

In 69.23% of the companies included in the sample the managerial information are outlined through the usage of analytic income and expenses accounts for the cost bearing items. 35.9% of the respondents use an extra-accounting system, and 7.69% use the managerial chart of accounts class (class 9). 62 persons answered this question.

In 69.23% of the companies included in the sample there is a procedure regarding expense document registration, in the sense of identifying and apportioning them on the cost bearing items. In 10.26% of the companies that took part in this project there is a responsible person for each type of expense or group of expenses. In 41.03% there is designated person that is responsible with analysing and interpreting the managerial accounting information. 62 persons answered this question.

It can be observed that on an evolution scale of managerial accounting application, the large companies (with turnover higher than 1,000,000 euro) have the largest percentage for resource allocation in order to improve managerial accounting (people responsible for certain expenses, for analyzing and interpretation of information, and internal auditing)

40% of the managers that responded this survey ask for monthly managerial information, 15.6% ask for this information twice a month, and 18.8% ask four times a month for this information. Approximately 15.4% ask for this information with a frequency higher than a week. 62 persons answered this question.

On average, the accounting department of the sampled companies devoted 52% of its efforts to processing accounting documents, 10% of its efforts to tax reporting, 10% to investor reporting, 12.5% to management reporting, 10% to providing accounting solutions and approximately 5.5% to reporting for other purposes. Differential analysis by turnover points out that small companies allocate approximately 20% of their time for tax reporting, while larger companies allocate only 10%. 62 persons answered this question.

Approximately 97.4% of the inquired companies are the beneficiaries of a cost monitoring system. 62 persons answered this question.

Within this objective we also tested the following hypotheses:

Hypothesis 4: There is an association between the field of activity of the company and recording and classifying expenses in managerial accounting by function.

H₀: There is no association relation.

H_a: There is an association relation.

The significance level Sig. for the χ^2 (chi-square) test is 0.001, meaning that the association is statistically significant. The frequency distribution reveals that 85.71% of the companies operating in production classify expenses by function. As for the entities operating in other fields, 78.13% do not classify expenses by function.

The validation of the hypothesis indicates that expenses are recorded both by nature and by function only by the majority of production companies, whereas other companies confine to recording expenses by nature. A possible explanation might be that only production companies are required by the accounting regulations to value inventories of goods obtained in the production process.

It is our view that a prerequisite of development of managerial accounting in Romania is the enactment of rulings mandating that companies record expenses by function.

Hypothesis 5: There is an association between the size of the companies and recording and classifying expenses in managerial accounting by evolution (fixed, variables).

H₀: There is no association relation.

H_a: There is an association relation.

The Significance level for the χ^2 (chi-square) test is 0.032, statistically validating the association relation. Just 11 of the small companies use the classification of the expenses according to their evolution, while 81.25% of the big companies use it. From our perspective, classifying expenses both by function and evolution marks a first important step in widening the scope of implementation of managerial accounting to Romanian companies.

Hypothesis 6: There is an association between the field of activity of sampled companies and recording and classifying expenses in managerial accounting by evolution (fixed, variables).

H₀: There is no association relation.

H_a: There is an association relation.

The Significance level for the χ^2 (chi-square) test was 0.022, statistically validating the association relation. To test this hypothesis we grouped the companies in production and other fields companies. 28.57% of the production companies use this classification, while only 3.13% of the other fields companies use it too.

Hypothesis 7: There is an association between the size of sampled companies and assigning responsibilities related to analysis and interpretation of information supplied by managerial accounting.

H₀: There is no association relation.

H_a: There is an association relation.

The Significance level for the χ^2 (chi-square) test was lower than 0.023, statistically validating the association relation. The frequency distribution shows that 62.5% of the

surveyed companies that reported turnover over EUR 1,000,000 had at least one employee linking the persons in charge of generating the accounting information and the management. 73.91% of the companies reporting turnover of less than EUR 1,000,000 did not have a designed person in charge of analyzing and interpreting managerial accounting information.

Hypothesis 8: There are significant differences in terms of time allocated by the accounting department for state reporting between companies grouped by size.

The variables tested are “percentage of time spent for state reporting” and “turnover”. The first variable is a continuous variable, that can be measured on interval scale and it is a dependent variable, while the second variable is a categorical variable, measured on ordinal scale, considered as grouping factor. As the variable chosen as the grouping factor has only two subgroups the t Student Independent Samples can be used.

H₀: There are no significant differences in terms of time allocated by the accounting department for state reporting between companies grouped by size

H_a: There are significant differences in terms of time allocated by the accounting department for state reporting between companies grouped by size.

As the Levene test concerning the equality of variances between subgroups showed a significance level of 0.032 for Sig., lower than the critical value of 0.05, the null hypothesis regarding the equality of variances was rejected, meaning that there were no significant differences between the variances of the two subgroups. In conclusion, all the types of companies allocate about the same percentage of time for tax purposes.

Objective III: Identification of tools for collection, analysis and interpretation of managerial accounting information

According to the legal regulations in force in Romania, costs can be calculated by using one of the following methods: standard costing, process costing, job costing, global absorption costing, direct costing or other methods implemented by the legal person, depending on the organization of the production process, the particularities of its activity, particularities of the technological process and internal requirements (OMF no. 1826/2003).

As far as the cost methods employed by surveyed managers, 20.51% apply the global absorption method, 25.64% apply the job costing, 7.69% apply direct-costing, 12.82% use ABC costing, 5.13% use target-costing and 17.95% do not know the name of the method or they do not use any method for cost computation. 61 persons answered this question.

As for ranking the tools/reports used for making managerial decisions, the highest ranking was held by the financial statements (cash flow, P&L, balance sheet) and trial balance. Differential analysis by turnover reveals that an important role in making the managerial decisions is also played by profitability analysis (under various forms such as profitability by customers, by departments, by cost-centres or by profit centres). As far as the larger companies are concerned, higher importance was given to investment

budget and to the cash flow statement accompanied by lower ranking received by traditional tools such as financial statements and trial balance.

Over 71.5% of the managers answering the survey (62 persons) used the trial balance once or twice a month, while 87.5% of the managers of the sampled companies that answered the question (51 persons) used the trial balance once or twice a month. Over 53.8% of managers surveyed indicated that they used efficiency analysis by cost centres, profitability analysis by customers, operational budget and cash flow at least once a month. Over 84% of the managers that answered the question (39 persons) used profitability analysis by cost centres once or twice a month. Over 50.5% of the sampled companies employed profitability analysis by profit centres once or twice a month. At least 43.6% of the managers of sampled companies requested the profitability analysis by products once or twice a month, while over 63% of the managers that answered the specific question (43 persons) used profitability analysis by product groups once or twice a month. 48.39% of the managers that answered the questionnaire used profitability analysis by customers once or twice a month. The analysis is made by 66.67% of the managers answering the question (45). 40.32% of the managers that answered the questionnaire used profitability analysis by departments once or twice a month. Over 86.22% of the managers that answered the question (29 persons) used profitability analysis by departments once or twice a month. Over 33.87% of the managers of the sampled companies used the investment budget once or twice a month. Over 65.62% of the managers that answered the question (32 persons) used investment budget once or twice a month. Over 27.42% of the managers of the companies surveyed made use of liquidity, solvency, and profitability ratios once or twice a month. Over 60.71% of the managers that answered the question (28 persons) used liquidity, solvency, and profitability ratios once or twice a month. Over 20.97% of the managers of companies surveyed used non-financial indicators once or twice a month. Over 59.09% of the managers that answered the question (22 persons) used non-financial indicators once or twice a month. At least 24.19% of the managers of companies sampled used statistical methods for data analysis once or twice a month as part of the decision making process. Over 65.21% of the managers that answered the question (23 persons) used statistical methods for data analysis once or twice a month. Over 45.16% of the manager of companies surveyed used the balance sheet and the P&L once or twice a month. Over 68.29% of the managers that answered the question (41 persons) used the balance sheet and the P&L once or twice a month. In terms of software employed, 30.8% of the companies sampled used an ERP, while 89.7% employed Ms Excel and 30% used specialized software to generate managerial accounting information (62 answers were received to this question). On average Ms Excel is used to generate over 70% of the managerial accounting information (56 persons answered this question).

As far as the procedure for collection, processing and presentation of managerial accounting information, 20.5% of the companies surveyed used a model from the mother-company, 59% developed an internal model and 12.8% resorted to a model developed by a specialized company. 61 persons answered this question.

Hypothesis 9: There is an association between the size of the companies and the use of reports for analyzing efficiency of cost centres as support for managerial decisions.

H₀: There is no association relation.

Ha: There is an association relation.

The observed level of significance Sig. χ^2 (chi-square) test was lower than 0.027, meaning that association is statistically valid.

The frequency distribution reveals that 64.29% of the companies recording turnover over EUR 1,000,000 perceived the report on efficiency by cost centres as being of high importance in making managerial decisions. 72% of the companies recording turnover under EUR 1,000,000 do not give any importance to such a report.

Objective IV: Determining the costs and benefits of obtaining managerial accounting information

Differential analysis by turnover reveals that sampled companies recording turnover under EUR 1,000,000 paid on average EUR 1,500 for accounting services, while companies recording turnover upwards of EUR 1,000,000 paid on average EUR 5,000 for accounting services. 51 persons answered this question.

Approximately 97.4% of the surveyed managers were content with the cost-benefit ratio in relation to managerial accounting in the company that they represented. 61 persons answered the question.

The main issues identified by managers as to the accounting information in a study completed by Almasan & Grosu (2008) were:

- The delay in receiving the information;
- The necessity for an accountant to see beyond the accounting borders;
- More flexibility of the accounting system;
- The presentation of information.

Among the most frequent causes that underlie weak implementation of managerial accounting within organizations, managers cited when answering our questionnaire:

- Lack of cooperation between departments;
- Precedence of the sales department in making decisions;
- Entangled Romanian legislation;
- Accountants do not perceive the importance of management reporting and focus mostly on tax reporting;
- High cost of good information systems;
- Lack of organization;
- Lack of responsibility from persons processing the information;
- Time being used unproductively by employees;
- Poor qualification and involvement of accounting department employees;
- Lack of time;
- The field of activity of the company requires only simplistic and manageable accounting;
- Bad organization of information;
- Instability of projects;
- Lack of commitment from accounting department employees;
- Non-existence of standardized models.

CONCLUSIONS AND FUTURE RESEARCH OPPORTUNITIES

A limit of our research is that we only considered the private companies from Romania, without surveying the public sector entities. We did that because we didn't encounter any public sector entity that uses a management accounting system. Generally, the diffusion of the accounting innovations in this sector tends to be slow and fragmented (Ter Bogt & Van Helden, 2000; Cavalluzzo & Ittner, 2003; Lapsley & Wright, 2004, quoted by Naranjo-Gil *et al*, 2009).

The main limit of the survey was given by the size of sample, size that impeded the validation of certain hypotheses as a consequence of impossibility of statistical interpretation of the results. This limitation was most apparent in the case of contingency tables, specific to the chi-square test, for which maximum of 20% of the cells of the contingency table can take values (number of cases) fewer than 5. In order to bypass this limitation, we resorted to re-codification of data for some of the variables. Thus, degrees of importance ranked from 1 to 5 were re-codified into "low importance" for degrees from 1 to 3, on the one hand, and into "high importance" for degrees of importance 4 and 5. Instances of such re-codifications are provided by variables such as "profitability calculation", "cash-flow" etc. Furthermore, variables "turnover", "capital source", "number of employees" were narrowed for the same reason, or in order to allow the use of t Student test for testing differences among subgroups, as opposed to ANOVA analysis that imposed more restrictions (equality of variances between subgroups and normal distribution) and is applicable to variables that have more than two subgroups. This re-codification of variables was arbitrarily organized (the inclusion of the first three degrees of importance in one category and of the following in the next category). The effect of the re-codification is the occurrence of the possibility that certain correlations existing between subgroups might have been lost by aggregation with subgroups for which the level of correlation was low (in case of correlation tests). Another possible consequence is that resulting aggregated subgroups might have become more homogenous, thus distorting the tests of differences between subgroups.

The analysis of the responses indicates that for larger companies managerial accounting tends to be suited to the requests of the management. With concern to the organization and functioning of managerial accounting we found that from the three possible options, the choice was directed (69.23%) mostly to using analytical accounts for the classes of revenues and expenses by cost drivers, application facilitated by the use of information systems adapted to the particularities of the activities performed by the companies and to the need of the management for various information. Limited use of the off-balance sheet accounts or class 9 of the Chart of Accounts by only 7.69% may be an alarm signal for their utility and, possibly, for their future disappearance. The result is convergent with the opinion expressed by Calu *et al*. (2009), as they ranked the use of class 9 from the Chart of Accounts for the calculation of production cost as an accounting practice whose physical disappearance is preceded by its disappearance at the level of the desirable. This practice has also disappeared from the French *Plan Comptable General*, which represented the inspiration source for the Romanian rulers when creating the accounting system in force in Romania since 1994.

As for cost methods, it resulted that a great deal of managers of the entities surveyed, 35.9%, did not know the name of the cost method applied or did not apply any. The most frequently used cost method was job costing.

The survey revealed that accounting departments of the sampled companies channelled 22.5% of their efforts to preparing and presenting the information required by the management. The remainder of their efforts is focused on preparing reports required by other users (mostly the state and tax authorities), proving the secondary role played by management reporting.

97.4% of the sampled entities use a cost monitoring system, system developed, on average, after four years since the company entered into business. This demonstrates that the management moves from guesswork and empirical decisions to a cost monitoring system only after they gain experience in the field of business. Another cause of the tardily development of this system is explained by the fact that from a cost perspective, such implementation is justified only when the cost-benefit ratio become optimum.

The analysis of the ranking of reports used by managers for decision making purposes showed that the cash flow ranked at the top. Different options were observed with regard to the frequency of use of reports related to information on costs and financial indicators (frequency ranging from nil to twice a month). The survey revealed a great degree of satisfaction with the cost-benefit ratio of applying managerial accounting, as 97.4% of the interviewed managers were satisfied.

Only 30% of the total budget of accounting department was directed to managerial accounting, a rather small and unfavourable percentage, in our opinion, as the main activity of the accounting department should concentrate on analysis, interpretation and support in decision making.

Herbert Simon, Nobel Prize laureate for economics identifies the managers' expectations from management accounting:

- Scorekeeping: things are going well or bad?
- Attention directing: which are the problems we have to deal with?
- Problem solving: from different solutions, which is the best?

These findings can represent a starting point for management accountants in revising their position regarding the entity's internal information needs.

A suggestion for a future research is to compare the results of our study (for Romania) with the situation in other countries that adhered to the European Union in the last years (like Bulgaria). Another suggestion is to consider only one industry or only one objective for our research. A suggestion may also be the application of the contingency theory in the case of the Romanian companies.

In our view, rulings mandating recording and classifying expenses by function and evolution would be beneficial to the development of managerial accounting. Simultaneous use of the three criteria (nature, function and evolution) would provide boundless informative opportunities. Legislative amendments would force entities to form a database that would serve multiple purposes.

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ⁱThey sketch some future scenarios regarding the managerial accounting profession, considering the conditions under which the IT applications facilitate the introduction of new managerial accounting techniques. The authors assert that there are three possible scenarios: one scenario in which the management accountants become from "counters", business oriented persons; another scenario in which nothing changes because the new techniques prove to be only momentary methods; and one scenario in which the management accountants are replaced by engineers.

ⁱⁱ He states that generally, the external factors are significant for the work of a management accountant.

ⁱⁱⁱ They observe that although there is no fundamental change in the nature of information generated by managerial accounting used after the implementation of some ERP system within a branch of an American company, changes can appear within the role of management accountants through the elimination of routine activities, which would lead to the utilization of more forecasting information.

^{iv} They analyzed en Finnish companies and observed that more time is used by the management inspectors to analyze the results and offer consultancy as a result of implementing ERPs (Granlund & Malmi, 2002).

^v For the questionnaire please e-mail Madalina Dumitru at madi.dumitru2007@gmail.com

^{vi} For affirmative answers we used as value “1”.

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