Abstract. *Continuous performance is the objective of any organization because only through performance, organizations are able to grow and progress. Knowing the determinants of organizational performance is important especially in the context of the current economic crises because it enables the identification of those factors that should be treated with an increased interest in order to improve the organizational performance. The most important objective of this paper is to create a model that will allow, based on multiple dimensions, to evaluate the Romanian manufacturing companies and to underline the relationship between the way they operate and their performance. The model used in this study was developed from the existing literature on organizational diagnostic models and from a broad literature review conducted to identify the factors influencing the performance of an organization. The results of this study also offer information on the relationship between the performance measurement process and the organizational performance. This article offers the base to identify measures that can lead to an improvement in organizational performance.*

Keywords: diagnosis, leadership, organizational performance, performance measurement, quality, strategy.

DETERMINANTS OF ORGANIZATIONAL PERFORMANCE: THE CASE OF ROMANIA

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1. Introduction

Just as the present proves, it is clear that the changes that took place in the global economy over the past few years have not passed without consequences in our country especially in organizations. These must be able to cope with an increasing number of challenges arising from the business environment, thus increasing their ability to adapt. Few Romanian enterprises are aware of the fact that their management represents the make or break factor in diminishing or even eliminating the unfavorable effects of the crisis (Verboncu & Purcaru, 2009).

In the current economic and financial crisis knowing the factors that generate success and the ways in which it can be measured has a critical importance. Performance indicators are designed to provide information on the quality of processes performed within an organization offering support to achieve the objectives on time and within a predetermined budget. But, to fulfill this role is necessary to understand their full and proper use.

No business scenario can guarantee economic stability, and the ability to control organizational performance during a financial crisis becomes more difficult. An organization in difficulty must be able to identify those measures that enable it to respond effectively to new problems to adapt as quickly as possible to changes in the business environment.

The results obtained in this study highlight the practices that relate significantly with organizational performance with a special interest on the performance measurement process and its impact on organizational performance. The paper is organized in seven parts as follows: the first part includes some general aspects regarding the organizational performance and the current economic situation; the second part is meant to shed some light on the concept of organizational performance; the third part illustrates the model used as a research basis in this study as well as an extensive literature review regarding the model's variables; the forth part details the process of data collection; the next two parts are represented by the actual data analysis of our study, more specifically we analyzed the significance of the model's variables and tested a research hypothesis regarding the relationship between the organizational performance and the performance measurement process; the last two parts include some concluding remarks and possible future work.

2. Organizational performance

Organizations have an important role in our daily lives and therefore, successful organizations represent a key ingredient for developing nations. Thus, many economists consider organizations and institutions similar to an engine in determining the economic, social and political progress. Precisely for this reason, in the last 22 years, there were 6 Nobel prizes awarded to researchers who have focused on the analysis of organizations and institutions. Continous performance is the focus

of any organization because only through performance organizations are able to grow and progress.

Thus, organizational performance is one of the most important variables in the management research and arguably the most important indicator of the organizational performance.

Although the concept of organizational performance is very common in the academic literature, its definition is difficult because of its many meanings. For this reason, there isn't a universally accepted definition of this concept.

In the '50s organizational performance was defined as the extent to which organizations, viewed as a social system fulfilled their objectives (Georgopoulos & Tannenbaum, 1957: p. 535). Performance evaluation during this time was focused on work, people and organizational structure.

Later in the 60s and 70s, organizations have begun to explore new ways to evaluate their performance so performance was defined as an organization's ability to exploit its environment for accessing and using the limited resources (Yuchtman & Seashore, 1967: p. 379).

The years 80s and 90s were marked by the realization that the identification of organizational objectives is more complex than initially considered. Managers began to understand that an organization is successful if it accomplishes its goals (effectiveness) using a minimum of resources (efficiency). Thus, organizational theories that followed supported the idea of an organization that achieves its performance objectives based on the constraints imposed by the limited resources (Lusthaus & Adrien, 1998 after Campbell, 1970). In this context, profit became one of the many indicators of performance.

The authors Lebans & Euske (2006: p. 71) provide a set of definitions to illustrate the concept of organizational performance:

- Performance is a set of financial and nonfinancial indicators which offer information on the degree of achievement of objectives and results (Lebans & Euske 2006 after Kaplan & Norton, 1992).
- Performance is dynamic, requiring judgment and interpretation.
- Performance may be illustrated by using a causal model that describes how current actions may affect future results.
- Performance may be understood differently depending on the person involved in the assessment of the organizational performance (e.g. performance can be understood differently from a person within the organization compared to one from outside).
- To define the concept of performance is necessary to know its elements characteristic to each area of responsibility.
- To report an organization's performance level, it is necessary to be able to quantify the results.

3. Research design

3.1. The Model

The object of the paper is to create a model of organizational performance that will be used to identify and ultimately compare the performance of Romanian manufacturing firms. The model proposed in this study is not an exhaustive one it can be further extended by adding other variables we have not made reference to.

The model was drawn from a detailed literature review in order to identify the factors that have an impact on the performance of an organization. There are a number of studies that have investigated various factors that have a critical role in the success of an organization. The key elements of the model are:

1. Structural issues relating to company size (number of employees), age (years) and purpose.
2. The variables used to analyze the sampled firms. These variables are divided into two categories:
   - external environment reflected by the following variables: competition, customers and suppliers;
   - internal environment reflected through the following variables: strategy, leadership, employees, quality, performance measurement, innovation and development information technology and corporate governance.
3. The performance of the organization quantified on the bases of its results.

The model is depicted in figure 1.

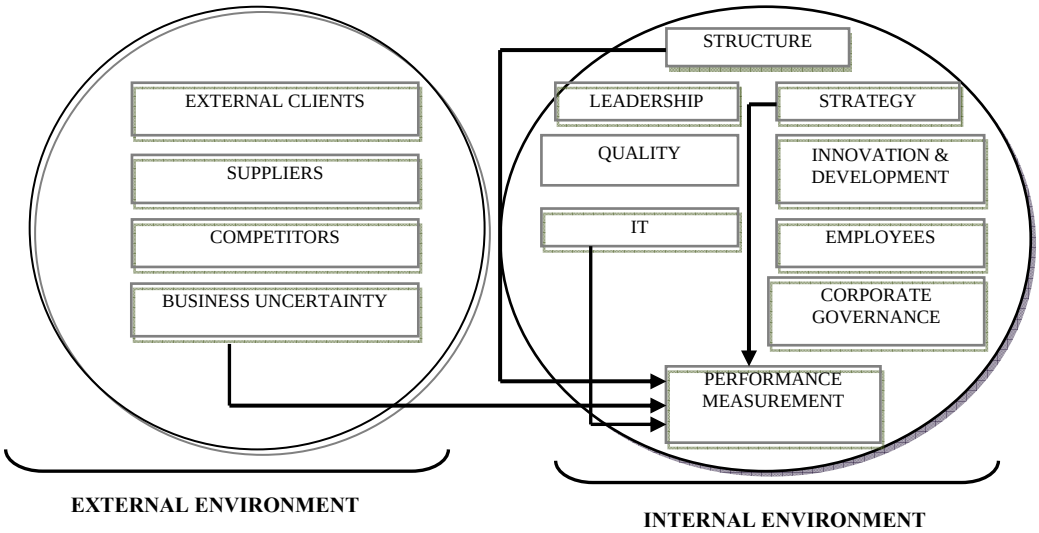


Figure 1. **Dimensions of the organizational performance model**

In the next section we detailed the ten variables of this model, namely a review of the empirical studies aimed at analyzing one or more variables present in our model.

3.2. Literature review

The variables used to illustrate the ***internal environment*** are discussed below.

Strategy. The strategy is reflected as a separate variable in many organizational diagnostic models (Waterman et al., 1980; Burke & Litwin, 2001; Kates & Galbraith, 2007). The empirical studies which have examined this dimension can be divided into two categories: studies that look at the impact of strategy on organizational performance and studies that analyze the relationship between strategy and business performance measurement in organizations. The former was analyzed by Prescott (1986) who examined the relationship between an organization's strategy and its performance. This study used a database that included 1,500 firms between the years 1978-1981. According to this study, business strategy significantly influenced performance, external environment having the role to mitigate the effects of strategy on performance.

As previously said, the second category of studies concerns the relationship between the organization strategy and the performance measurement process. One of the most significant studies belongs to Porter (1980). In this study the author compared two groups of strategies (strategies aimed at reducing costs and differentiation strategies). The objective of cost strategies is gaining competitive advantage through a reduction in costs below the level of competitors. This assumes the involvement of all departments within the company: production department to identify ways to reduce production costs, research and development department to develop new products that can be less costly, and the marketing department to identify less expensive ways to attract customers (Jones & George, 2006). The objective of differentiation strategies is gaining competitive advantage by concentrating all departments of an organization to differentiate their products from those of competitors on one or more dimensions (quality, after sales service and support) (Jones & George, 2006).

***Structure*.** The variable structure is very common in organizational diagnostic models (Waterman & Peters, 1980; Nadler & Tushman, 1982; Burke & Litwin, 2001; Kates & Galbraith, 2007).

This variable was reflected in our model through structural issues related to company size (number of employees), age (years) and through aspects meant to identify the organization of the firm, making reference to flexibility and adaptability of functions and positions. To quantify this dimension we used statements intended to reflect the variable structure from the Organizational Diagnostic Questionnaire developed by Preziosi in 1980.

Performance measurement. Research on performance measurement has gone through many phases in the last 30 years: initially they were focused mostly on financial indicators; with time, the complexity of the performance measurement

system increased by using both financial as well as non-financial indicators. Since the late '80s, researchers, consulting firms and practitioners have stressed the need to put an increased emphasis on non-financial indicators in the performance measurement process. Thus, we expect that organizations, especially those in manufacturing, to use both financial and non-financial indicators in measuring their performance.

To diagnose the performance measurement process we developed, based on the indicators identified by Kaplan & Norton (1993) respectively Ittner & Larcker (2003), a list of 22 financial and non-financial indicators. Firms were asked to what extent the indicators from the list were used to measure performance using the 1-5 Likert scale (1 – not at all used and 5- to a very large extent). The impact of the performance measurement process on the organizational performance was the objective of many studies in the last few years, driven by the desire to identify whether the way in which performance is measured has a significant and positive impact on organizational performance. In this category falls the study conducted by Bourne et al. (2005) in which the performance measurement process was demonstrated to have a positive impact on the business success.

Information Technology. Information technology has been captured in the study in terms of a single variable, namely the extent to which firms have implemented an integrated Enterprise resource planning (ERP) system. We focused on this variable due to the increased interest on the relationship between the ERP system and organizational performance. ERP is a standard software package that provides integrated transaction processing and access to information that spans multiple organizational units and multiple business functions (Wu & Wang, 2006).

One study aimed at identifying the relationship between the ERP and organizational performance belongs to Dehning & Richardson (2002). According to these authors, the implementation of the ERP system has a positive effect on organizational performance, the magnitude of its impact is smaller immediately after implementation, being intensified over time.

A similar result was obtained by Velcu (2007) who examined the impact of implementing an ERP system on the performance of eight organizations in Finland.

Leadership. The leadership variable is also often found in organizational diagnostic models (Weisbord, 1976; Waterman et al., 1980; Burke & Litwin, 2001). The impact of this variable on organizational performance is probably the most obvious of the models' variables being the object of many studies. We can mention here the study conducted in 1981 by Weiner & Mahoney (1981) who studied the leadership in 193 manufacturing companies. According to this study, managerial practices have a significant impact on two organizational performance components: profitability and share price.

In addition to the above-mentioned study there are others who have suggested that the leadership is a key element that ensures the connection between the success factors of an organization (Nohria et al., 2003).

Innovation and development. The innovative capacity of organizations is a dimension less surprised in organizational diagnostic models although there are numerous studies that have been focused on identifying impact of the innovative

capacity on performance. The importance of this variable and the impact it has on organizational performance was highlighted by the study conducted by Deshpande et al. (1997) who considered several companies from five countries. According to this study, firm's innovative capacity was the critical factor in explaining performance differences between firms from five countries: Japan, United States, France, Germany and England. Also, Kotler (2003) studied the relationship between innovation and performance, offering the example of Sony, a leader in innovation that has significantly increased market share by means of numerous new products to clients. In essence, this variable is captured in the models of organizational diagnostic by the technology available in carrying out activities. In this study we considered three elements of this variable (in addition to the technology used), namely: the extent to which new products were introduced, and the extent to which products and production processes were improved in the past two years. These items were used according to the study conducted by Sanner & Wijkman (2005).

***Employees*.** This dimension is reflected in one form or another in all organizational diagnostic models, an aspect that reveals its importance to the success of an organization. Often management decisions may generate feelings of angry, frustration, grievance, and distrust, among employees , that may contribute to a potentially detrimental effect on the general organizational performance (Vasconcelos, 2011).

According to Hosmer (2001), because human resources are characterized by the highest degree of restraint, attracting and retaining employees "quality" is a critical issue for competitive advantage and organizational performance. Another author who has emphasized the importance of this dimension in the performance of an organization was Reichheld (1993) who showed that a few percent reduction in employee turnover rate may have as a result an increase in profitability by 50%.

Within this dimension we sought to identify the frequency of measuring employee's satisfaction. Respondents were also asked to agree on a number of statements designed to highlight the dedication of employees to the firm. These statements were taken from the study conducted by Pinar & Girard (2008), which analyzed the impact of three dimensions (leadership, customers and employees) on organizational performance.

***Quality*.** The key aspect of quality is essentially the extent to which the company is able to meet stakeholder expectations on certain dimensions that have value for them (Saner & Eijkman, 2005). In the vast majority of works that examine this variable, quality is measured by the impact of ISO standards. In essence, the object is to identify the extent to which implementation of such a quality standard has a significant influence on financial performance.

The implementation of ISO 9001 standard provides the possibility to align the objectives of the top levels, with the internal processes. With greater visibility into these processes, managers will be able to transform the original goals of quality in a continuous improvement process that will have a positive impact on financial performance.

Corporate governance. Corporate governance is very often found in studies oriented toward the organizational performance. One of the most important and often cited studies belongs to Gompers, Ishi & Metrick (2003). They have built an index for measuring corporate governance using a sample of 1,500 U.S. firms in the 90s. This study has demonstrated the existence of a positive relationship between the quality of corporate governance and firm performance. Brown & Caylor (2009) have obtained similar results in their research which is an extension of the research carried out by Gompers et al. Drobetz et al. (2004) also identified a positive impact of corporate governance on the performance of German firms. In Japan, Bauer et al. (2008) using the database provided by GMI, showed that companies with better governance are more efficient than companies with weaker governance by up to 15% annually.

In our study this variable was quantified by asking firms the degree of implementation of corporate governance principles using the 5 point Likert scale.

The ***external environment*** was reflected in the model through four dimensions: customers, suppliers, competition and uncertainty of the business environment.

Clients. Over time, the importance of customer orientation and its impact on organizational performance has been highlighted in numerous studies. In this category is the study conducted by Brady et al. (2002) who demonstrated that customer orientation is linked indirectly with organizational quality, customer satisfaction and performance of the organization. Another study that had the same objective belongs to Pinar et al. (2003). In this study, oriented toward Turkish companies, there were significant differences between firms characterized by a greater orientation towards customers and firms characterized by lower customer orientation. The first category of firms, showed noticeably higher performance than the latter.

In our study we tried to capture the degree of customer orientation through questions designed to clarify the following aspects: the measuring frequency of customer satisfaction, the existence of procedures for customer complaints, the extent to which customers' views are taken into consideration in establishing future objectives.

Suppliers. Many organizations have recognized that their competitiveness is based to a large extent on the ability to establish a high level of trust and cooperation with suppliers (Buono, 1997). Thus, organizations must choose the suppliers that enable them to increase competitiveness and performance. To reflect this dimension we considered four criteria: one regarding quality, one regarding delivery and two criteria oriented toward the price.

Competitors/business uncertainty. Through this variable we tried to identify the competitive environment in which the company operates and the uncertainty of the business environment. We sought to illustrate the uncertainty of the business environment in an effort to identify the relationship between the degree of uncertainty in the business environment and its impact on the performance measurement process. Numerous studies have shown that financial indicators are most appropriate when the competitive environment is characterized by a low level of uncertainty, the foundations of the competition being less complex (Brownell, 1982; Govindarajan, 1984).

4. Data collection

In order to collect our data and to quantify the variables used in our model we created a questionnaire that was distributed to manufacturing firms registered in the database created by the Chamber of Commerce and Industry: *Pro Business Romania 2009.* From this data base we selected only the manufacturing firms. Thus, we obtained a sample of 7437 firms. The sample thus formed was reduced by selecting those companies that have a valid e-mail address because questionnaires were sent electronically via e-mail. The number of manufacturing firms that have an e-mail address in this database is 2296. Of these, 272 companies have provided an invalid or inactive e-mail address. This reduced the target population to a number of 2024 companies.

The number of companies that have completed the questionnaire totaled to 135 (representing a response rate of 6.6%). Of the 135 questionnaires received, only 92 were considered valid and therefore used in the study. The reduced valid response rate in this study is not very surprising. In academic literature there were other studies which had similar response rates. (Abdel-Maksoud et al., 2008 examined, in order to identify management practices, 1155 Japanese companies and obtained a valid response rate of 7.2%; Bescos & Cauvin, 2004 examined 2502 French companies to identify how they measured performance and obtained a valid response rate of 6.3%).

A justification for the low response rate, in this case can be explained by the firms' lack of trust to provide any information on the work they perform.

The instrument used in this study is represented, as we mentioned above, by a questionnaire developed to gather information on the variables detailed above.

5. Data analysis

In a first phase, to ensure a standardization of the results we calculated for each company and each variable of the model an index with values between 0 and 100 (100 representing the highest level of excellence of the firm for that variable). Since our model includes variables that are considered to have an impact on performance, we expect that companies that excel in terms of the ten variables that reflect their practices (the external environment, strategy, leadership, employees, structure, quality, performance measurement, innovation and development, information technology, corporate governance) to have high indexes of results. In essence, we want to identify to what extent firms' capabilities are reflected in their results.

The results of determining the two categories of indices for each of the 92 responding companies show that the practices reflected in terms of the 10 variables matter, meaning that companies that have high values for practices indexes also have high results. Figure 2 illustrates besides the indexes for practices and results, also the regression line using the results as a dependent variable. According to this figure as firms improve their practices their performance will also improve. This information should be treated with increased interest especially by those firms that have high deviation from the regression line.

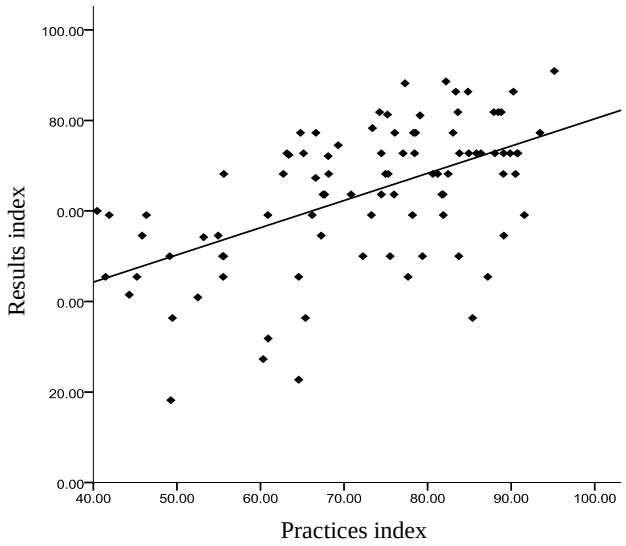


Figure 2. **Regression line for the practices and results indexes**

Some deviations from the regression line, especially those which illustrate high values for practices' index but low values for the results index can be explain by the current economic crisis which had a negative impact on firms' results and thus their performance.

The results regarding the relationship between the ten variables that incorporate the practices/capabilities and the performance are depicted in Table 1.

Table 1

Pearson correlations between the model's variables

Variables that reflect firms practices	Performance (total)	Financial performance	Nonfinancial performance
Strategy	0.429**	0.309**	0.362**
Leadership	0.328**	0.242*	0.251*
Employees	0.454**	0.268*	0.425**
Structure	0.147	-0.021	0.233*
Quality	0.286**	0.204	0.242*
Performance measurement	0.485**	0.309**	0.431**
Innovation and development	0.379**	0.235*	0.342**
Information technology	0.260*	0.159	0.226*
Corporate governance	0.398**	0.324**	0.303**
External environment	0.445**	0.209	0.445**

* Correlation is significant at the level $p<0.05$.
** Correlation is significant at the level $p<0.01$.

To better highlight the relationship between firms' practices and their performance we have divided this latter variable into two categories (financial performance and non-financial performance). As opposed to the external environment which was treated as a whole, we divided the internal environment on its individual components/variables because it offers a better image of the relationship between good practices and organizational performance (e.g. the external environment encompasses some variables that are independent of a firm's practices).

To quantify these variables we calculated the average index for each variable. If we analyze the relationship between the performance of firms and their practice we can observe that, besides the variable Structure, all the other dimensions show a significant positive correlation at the 0.01 level, between the vast majority of variables (strategy, leadership, employees, quality, performance measurement, innovation and development, external environment and corporate governance) and performance.

When organizational performance is analyzed on its two components financial and non financial we can observe the following:

- The most significant impact on both financial and nonfinancial performance was registered for those practices that regard the strategies, the performance measurement process, innovation and development, external environment and corporate governance. Thus, firms that want to improve their performance (both financial and nonfinancial) should be directed primarily towards improving practices that reflect these dimensions;
- A less significant impact, but not negligible on the financial and nonfinancial results was registered by the variable leadership.
- The variables quality and information technology have a significant impact at 0.05 only on the nonfinancial results. This is somehow explainable because the nonfinancial results quantifies to a large extent the clients satisfaction, the scrap rate, the rate of returned products and the quality quantified through the standards has a positive impact on the above nonfinancial performance indicators.
- By dividing performance in its two components we can observe that the variable structure becomes more significant registering a significant relationship at 0.05 with the nonfinancial performance.

The results confirm what we have stressed several times during this paper, namely, practices and capabilities influence the results of firms and thus their performance.

6. The relationship between corporate success and the frequency of use of performance indicators

The object of this section is to analyze the relationship between organizational performance and the performance measurement process. More specifically we are interested in testing the following hypothesis:

The frequency of use of performance indicators is directly proportional with the organizational performance.

In order to test this hypothesis we conducted a Principal Component Factorial Analysis with Varimax Rotation to identify the internal structure of the performance measurement variable. The factorial analysis of this variable led to the identification of four components that explain 66.9% of the total variation. The first component was called Market because it includes the indicators that show the clients' satisfaction which can have an impact on the market share. This new variable includes the vast majority (81%) of the nonfinancial indicators. The second factor was called Employees because it incorporates only nonfinancial indicators regarding the employees. The last two factors (Financial 1 and Financial 2) include only financial indicators.

The method used in this part was the Canonical Correlation. We chose this method because, unlike the Pearson correlation, (linear relationship between two variables), it allows the identification of the relationship between two sets of variables, being an extension of the multiple regression.

This method is recommended when both variables are numerical and the study aims to investigate the relationship between the set of independent variables and the set of dependent variables measured with the same set of observations.

The canonical correlation focuses on the correlation between a linear combination of variables in one set, and a linear combination of variables in another set (Johnson & Wichern, 2002).

The canonical correlation can be formulated as follows:

$v = \gamma^T y$ and $u = \alpha^T x$

where:

v is the linear combination of the results

u is the linear combination of the frequency of use of the performance measurement indicators

The correlation between *u* and *v* is:

$$Corr_{(u,v)} = \frac{Cov(u,v)}{[Var(u)Var(v)]^{1/2}} = \frac{\alpha^T \sum_{12} \gamma}{\sqrt{\alpha^T \sum_{11} \alpha \sqrt{\gamma^T \sum_{22} \gamma}}} = \frac{Cov(u,v)}{(11)^{1/2}} = Cov(u,v) = \rho$$

The objective is to maximize Corr(u,v).

max Corr(u,v) = max $\alpha^T \sum_{12} \gamma = \rho$

subject to:

$$Var(u) = E[u - E(u)][u - E(u)]^T = \alpha^T Cov(x)\alpha = \alpha^T \sum_{11} \alpha = 1$$

$$Var(v) = E[v - E(v)][v - E(v)]^T = \gamma^T Cov(y)\gamma = \gamma^T \sum_{22} \gamma = 1$$

The results obtained are illustrated in table 2 and 3.

Table 2 shows the significance of the three canonical correlations obtained from the analysis. The first canonical correlation (R = 0.62, significance = 0.001)

indicate a strong relationship between the frequency of monitoring performance indicators and the performance of firms. The remaining two canonical correlations were not significant.

Table 2

Significance of canonical correlations

	Canonical correlation	R^2	Significance
1	0,62	0,38	0,001
2	0,38	0,14	0,02
3	0,09	0,0081	0,998

Table 3 shows the canonical loadings for the first correlation which is significant. I have not included in this table the canonical loadings for correlations 2 and 3 because of their lack of significance.

Table 3

Canonical loadings

	Market	Employees	Financial 1	Financial 2
U1	-0,792	-0,815	-0,911	-0,005
	Performance (total)	Financial performance	Nonfinancial perfromance	
V1	-0,887	-0,998	-0,441	

According to this table, all three performance variables have significant canonical loadings (in the literature is considered significant a canonical loading greater than 0.4). Of these, financial performance has the largest load (in absolute value 0.998) and is thus being the most important variable in this set. In the category of independent variables the largest loading was registered by Financial 1 (-0.911) followed by variable Employees (-0.815) and the Market (-0.792). The loading of the variable Financial 2 is not significant. Even so, the results obtained show a high degree of validation of our hypothesis.

7. Conclusions

7.1. Contributions

The object of this paper was to identify the variables that have a significant relationship with the organizational performance within a sample of 92 Romanian manufacturing firms. This work contributes to the vast literature on organizational performance by creating a model which can be used to identify the determinants of organizational performance. The model presented in this paper is composed of 11 variables divided in two categories: one that has the purpose of identifying the practices of the sampled firms through 10 variables: strategy, leadership, structure,

quality, innovation and development, information technology, performance measurement, employees, corporate governance and external environment and one that has the purpose of identifying the organizational performance quantified through the results registered by the sampled firms. In order to standardize the data collected from questionnaires we calculated for each company two indexes: one that reflects the practices of firms and one that reflects their performance. A simple linear regression showed that practices matter, more specifically firms with high practices index had also high performance index and vice-versa.

From the 10 variables used in this model only the structure variable didn't have a significant relationship with the overall score of performance.

In this study we also highlighted the importance of the performance measurement process on the organizational performance. Using the canonical correlation we demonstrated that there is a strong relationship between the three performance variables and the frequency of using nonfinancial indicators in the performance measurement process. These results highlight the need to improve the measurement of performance for those companies wishing to increase their market success. These results are valuable, because according to our this study only 55% of all the firms surveyed consider a priority the improvement of the performance measurement process. Thus, companies seeking to compete with industry leaders need to review and improve how they measure their performance.

This study represents, in our opinion, an essential contribution to the literature on organizational diagnosis and performance because it is primarily an extension of the previous research using the model developed to assess and diagnose many dimensions of organizations contributing to a better understanding of the relationship between variables presumed to influence the results of an organization and its performance.

7.2. Future work

This study can be extended in several ways. We can repeat the study in one or two years which will offer the possibility to do a comparative analysis and see how the analysed firms evolved over time and improved their performance. In order to increase the validity of our results we can try combine the data collected through questionnaires with secondary data (absolute values for different indicators). We can also extend our model by including more variables that reflect the practices of the Romanian manufacturing companies.

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