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DOCTORAL THESIS

- SUMMARY -

THE ROLE OF ORGANIZATIONAL DIAGNOSIS IN IMPROVING FIRM PERFORMANCE

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KEYWORDS:

Organizational diagnosis, organizational development, organizational performance, performance measurement, performance measurement indicators, performance measurement systems.

INTRODUCTION

Organizations have a major role in our daily lives and therefore, successful organizations are a key element for the development of a nation. Thus, many economists consider the organizations and institutions as a driving force in determining economic, social and political progress. For this reason, in the last 22 years, 6 Nobel¹ prizes were awarded to researchers who have focused on analyzing organizations and institutions.

Organizations can be perceived as a system composed of interrelated subsystems (Burke and Litwin, 1992). Thus, the impact of any factor in an organization such as structure, leadership, culture, etc. should not be considered independently of others. For this reason, the interdependence between these factors and the need for their diagnostic methods has been the subject of numerous investigations. Organizational diagnostic models have proved very effective in supporting organizational development programs.

Continuous performance is the focus of any organization because only through performance, organizations are able to grow and progress.

The first condition necessary to improve and achieve business excellence is developing and implementing a system for measuring organizational performance. Therefore, any organization, whether it's a large multinational corporation or a small business must implement a system to measure performance because both the success and continuity of an organization depend on its performance. Performance measurement is necessary because it gives organizations the ability to determine whether objectives have been achieved, to assess their performance and develop future initiatives to improve their performance. Performance measurement and hence organizational performance has become a topic of growing interest both among academics and among practitioners especially since late 1980.

According to The RSA, (Royal Society of Arts, Manufactures and Commerce) in order to ensure its success, a company must use the relevant systems to measure its performance.

¹ http://nobelprize.org/nobel_prizes/economics/

From the vast literature on performance measurement it was concluded that the rapid changes in recent years have made the traditional measures such as profit, productivity and return on investment insufficient for planning and controlling the activities in a highly-competitive environment which is constantly changing. An effective performance measurement process requires consideration of two key issues: performance indicators and performance measurement systems.

The shortcomings of traditional measures based solely on financial indicators lead to the emergence of performance measurement systems that include both financial and non-financial indicators. Harvey (2008) identified the following benefits of an effective system for measuring organizational performance:

- Improving decision making. It is impossible to identify the best decisions without an understanding of the organization's performance. Using a multidimensional performance measurement system enhances decision support at each level.
- Support the strategic plan. The ability to measure performance and progress offers a purpose for the process of elaborating strategic plans and objectives. An effective performance measurement system should focus on the link between each organizational level beginning with the top because in this way the decisions and resulting actions will be consistent with the strategy.
- Improving communication. Involvement in goals settings reporting results improves the degree of stakeholders' understanding regarding the strategies and decisions and providing a common language to encourage communication between departments.

In the current economic and financial crisis is of critical importance knowing the success factors and how it can be measured. Performance indicators are designed to provide information on the quality of processes performed within an organization thereby supporting the goals on time and within a budget.

But, to fulfill this role it is necessary to understand their full and proper use. For these reasons we consider that the results obtained through the study conducted in this doctoral thesis presents a particularly far greater value because they allow the identification of practices that are crucial for the analysis of manufacturing companies to improve their performance. The study also highlights the main aspects that differentiate the most successful companies from the less successful ones.

The main activities undertaken in the research process to achieve the purpose of this PhD thesis are presented in Figure 1.

Each chapter begins with an introduction outlining the contents and structure of the chapter and ends with a series of conclusions on the issues discussed in that chapter.

After presenting some general information included in Chapter 1, Chapters 2, 3 and 4 are intended to clarify issues that are needed to achieve the theoretical basis for the empirical study presented in Chapter 5. More detailed these chapters address the following topics:

- Clarify the concept of organizational development discussed in the second chapter of this doctoral thesis. We considered necessary to clarify this concept because organizational diagnosis is a key step in the process of organizational development.
- Clarify the concept of organizational diagnosis and a comprehensive presentation of the organizational diagnostic models that were found in the literature and in practice. These issues, discussed in Chapter 3, allow the identification on the following questions: What is the role of organizational diagnosis in the organizational development process? What are the main organizational diagnostic models that were found in literature? What are the results if we apply a diagnosis model to a Romanian organization?
- Clarify the concept of organizational performance and identify the ways in which performance can be measured within an organization. These two objectives are discussed in Chapter 4. The second part of this chapter was intended to review the literature oriented toward organizational performance measurement. In this regard, we found that the literature aimed at measuring organizational performance is divided into three broad categories: in the first category falls the theoretical work designed to clarify the concept of performance measurement, the second category of work includes performance measurement diagnosis, more specifically, identifying the importance of non-financial indicators in measuring the performance and the degree of usage of the performance measurement systems in organization; the third category of work tries identify the determinants of organizational performance. In this case, organizational performance is examined as a dependent variable influenced by a number of independent variables. Thus, in these studies is of critical importance how the organizational performance is quantified, as a dependent variable.
- Chapter 5 includes the empirical study. In the first part of this chapter we presented in detail the Diagnosis and Performance Model which represents the starting point in carrying out the empirical study. This model contains 9 variables that reflect the practices of the analyzed companies and a variable that reflects their performance measured in terms of results. To quantify the 10 variables of this model, we developed a questionnaire distributed to manufacturing firms.

The results obtained allowed us to:

- identify the practices that are crucial for companies to improve their performance;
- identify the key aspects that distinguish the most successful from the least successful ones;
- detailed analysis of the performance measurement process by identifying factors that influence the way firms carry out this process;
- highlight the importance of measuring performance by demonstrating the existence of a positive relationship between the frequency of use of performance indicators and the results obtained by the manufacturing companies.

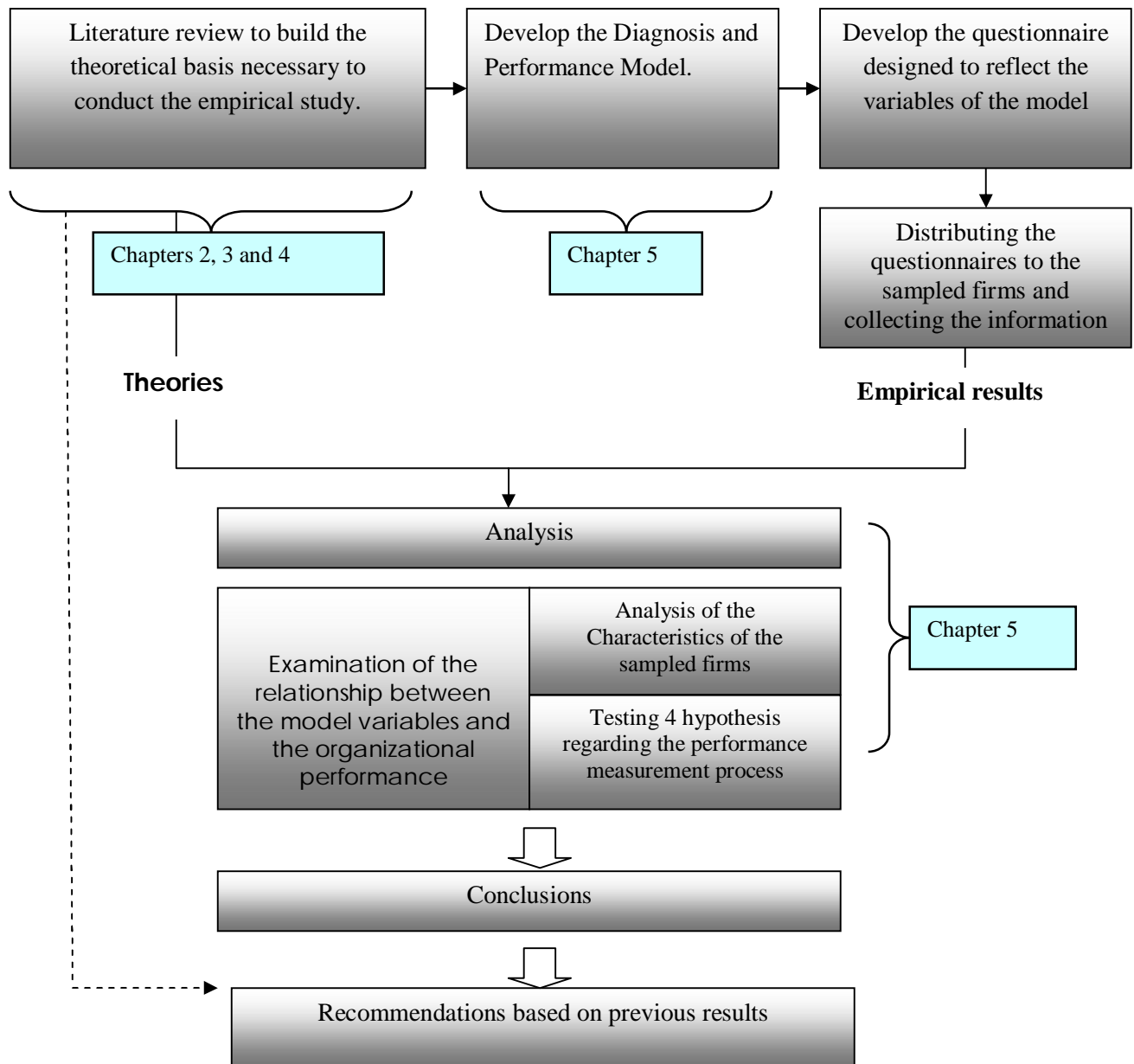


Figure 1. Study Plan

RESEARCH OBJECTIVES AND IMPORTANCE

The main objective of this research is to *develop a model which allows, based on multiple dimensions, the evaluation of the organizations under study, highlighting also the relationship between their practices and results obtained.* The model used in this study was developed from the organizational diagnostic models found in literature and from a broad study of literature to identify the factors that influence the performance of an organization.

There are many studies that have investigated the factors that have a critical role in the success of an organization. The key factors considered to have an impact on the performance of an organization are: customers (customer orientation), personnel quality and innovation (Peters and Waterman, 1982, Drucker, 2001, Kotler, 2003).

The model, which is the subject of this research can be divided into three dimensions:

- external environment reflected by the following variables: competition, customers and suppliers;
- internal environment reflected by the following variables: strategy, leadership, employees, quality, performance measurement, innovation and development and information technology;
- organizational performance reflected based on their results.

This model represents the bases for the achievement of the following seven research objectives of this PhD thesis:

1. The analysis of the sampled firms using the model's variables.
2. The analysis of the relationship between the model's variables and organizational performance.
3. Dividing organizations, based on survey results in two categories: successful organizations and non-successful organizations.
4. The analysis of the attributes for the both types of organizations.
5. The analysis of the relationship between successful organizations and the use and non-financial indicators.
6. Testing of 4 hypotheses about how organizations measure performance.
7. Formulating, based on results obtained, some general proposals to improve the organizational success.

This study can be considered, in our opinion, an essential contribution to the literature aimed at diagnosis and organizational performance because it is primarily an extension of

previous research through the model developed to assess and diagnose organizations across many dimensions thus offering a better understanding of the relationship between different variables presumed to influence the results of an organization and its performance.

Second, this research highlights the way companies measure their performance while providing information on the relationship between performance measurement process and a number of factors considered to have a major impact on the organizational results.

Third, the model developed will offer solutions to organizations in order to identify ways of action that will lead to improved performance.

LITERATURE REVIEW

The study of literature is the subject of the second part of this doctoral thesis which includes Chapters 2, 3, 4. The theoretical contributions of this work by are represented by the improvement of the literature in the field.

CHAPTER 2: Organization and organizational development

The influence of organizations in our daily life registered a rising trend during the twentieth century. According to the authors Baum and Rowley (2002), organizations are the pillars of our society, a vehicle for collective action. They also provide infrastructure, such mapping our future.

However, as stated by Richard Scott (1992) because of their ambiguity, organizations tend to disappear in the background and thus requiring a constant reminder of their impact on society.

Scott (1998) articulates three definitions which reflect very well the way organizations are perceived. Each of these definitions points out the essential characteristics of organizations in which they differ from other types of collectivities (families, groups of persons, etc.). These three definitions detailed in this chapter are based on three systemic approach of the organization: rational system, natural systems and open system.

Although researchers are looking to find a formal definition of organization to corroborate the essential features of it, others consider that there isn't a specific or valid definition for all organizations (Pfeffer, 1997).

Because of the importance and impact of organizations on society we decided to dedicate this chapter to the concept of organization and organizational development.

This chapter is structured in two parts as follows:

- The first part is concentrated on the concept of organization. The beginning of this chapter includes a number of definitions of the organization with a detailed presentation of the objectives and the resources necessary in order for organizations to achieve these objectives. To fully understand the role of organizations in society is necessary to study their approaches. For this reason, this part continues with an overview of the systemic approaches of the organizations that represents the theoretical basis necessary for understanding organizational diagnostic models that are the subject of the third chapter. In the end of this part we present a typology of organizations based on four systemic approaches: technical-closed system, social-closed system, technical-open system, social-open system.
- The second part of this chapter is intended to clarify the concept of organizational development. This part begins with an overview of the organizational development definitions for a better understanding of this notion. Next we presented the six stages that were identified in the evolution process of the organizational development process and the last part includes the presentation of the two branches of organizational development application: action-research branch and action-learning branch.

In this chapter we tried to clarify two key concepts in science management namely: organization and organizational development.

Organization can be defined as a group of people working together to achieve a goal or a set of common objectives. Viewed as a system, organizations are composed of a set of integrated subsystems to achieve organizational efficiency and effectiveness. Like any system, organizations use inputs that are subject to a process of transformation to obtain outputs (tangible results of the transformation process embodied in goods and services). As highlighted throughout this chapter organizations have the role of pillars of society, success is a key ingredient for the welfare of a nation.

To survive, any organization must be in constant contact with an environment in which it operates and be able to cope with changes in its relations with the environment.

Organizations and organizational development issues as we have shown throughout this chapter, is a subject of increasing interest for both practitioners and theorists in the field as they tried to highlight the major issues that define organizations. The importance of organizational development results primarily from its role in helping organizations in the transition and change. Employees have higher expectations regarding the work they conduct. They need challenges, recognition, sense of accomplishment and good relationships with managers and other employees. If these needs are not met the

organization's performance will suffer. Moreover, customer needs have become more varied and sophisticated can be satisfied only by the most innovative practices. For these reasons, an effective organization must be able to meet current and future challenges, ability to adapt to these changes is an essential condition for survival.

CHAPTER 3: Organizational Diagnosis

Intense global competition a characteristic of the current business environment generated a high level of uncertainty among companies in all industries. This hyper-competition requires continuous improvement of product and services quality. Therefore, in order to survive and to ensure success, organizations must be flexible and able to adapt to changes in a short period of time.

Over time there were many strategies identified to improve organizational performance. Such a strategy is organizational diagnosis, the assessment of the current situation of an organization in order to identify the most appropriate interventions for development. The vast majority of managers or consultants use in conducting organizational diagnosis certain models to identify organizational traits used to achieve organizational diagnosis to identify certain traits organizational models that have proved essential in the past. Thus, the main objective of this chapter is to present and analyze organizational diagnostic models that were found in literature over time.

When an organization wants to improve its performance it is necessary to assess current performance. These evaluations can be planned, systematic and explicit and or unplanned and implicit. A proper assessment of performance should be based on tools such as questionnaires, interviews, organizational diagnostic models, etc. According to Lowman's (2005) organizational diagnosis process is influenced by three basic questions: What is diagnosed by the practitioner? For what purpose? and Using that system? Organizational diagnosis has two essential purposes. One is evaluating organizational failures (Lowman, 1993) and the second is the evaluation of the wellness of an organization.

Some of the models presented in this chapter are quite old, but citing Mintzberg "sometimes, like good wine, some of the best models are the oldest" (Mintzberg, Ahlstrand and Lampel, 1998: 8).

According to a study conducted in 1999, the most commonly used in practice proved to be Weisbord's Six Box Model (25% of companies analyzed, used as a basis for organizational diagnosis this model) followed by model 7 S (19 %) and third STAR Model and Nadler and Tushman's congruence Model (10%) (Jones and Brazzel, 2006 by Samuels, Personal Communications, 1999). All the above models are models that address organizations as open systems.

This chapter is organized into two distinct parts as follows:

- The first includes the presentation and comparison of several models of organizational diagnosis which were found in the literature;
- The second part includes a case study mode specifically the application of a diagnosis model more specifically Weisbord's Six Box Model in a Romanian organization.

A traditional definition of organizational diagnosis belongs to author Beckhard (1969) according to whom diagnosis is an intervention that provides information on the various subsystems of the organization, processes and rules of behavior that occur within the organization.

According to Jim Paul (1996), organizational diagnosis is a process that generates valid and useful information related to an organizational system.

Among the advantages of organizational diagnosis we can mention the following (Beer and Spector, 1993, Lok and Crawford, 2000):

- provide information on activities with a reduced functionality in order to increase the efficiency,
- ensures the organization's ongoing involvement in the process of continuous improvement;
- allows a systematic interpretation of data;
- enables the development of appropriate change strategies.

With these advantages, the organization acquires the ability to find solutions to solve problems or to optimize the development activity.

According to Pierre Thibaut (1989), organizations must make a diagnosis not only when they are in difficulty but even if the organization is in "good health". In his opinion, the diagnosis should provide answer to questions like: What are the organization's results? Are these results satisfactory or not? How were they obtained? What are the desired objectives and performances? What is the performance level? What to do to achieve this level of performance? What concrete measures should be taken on short and long term?

The organizational diagnosis model represents the core of the diagnosis instrument because it directs the managers or consultants activities in certain directions being composed of a number of variables that interact with each other (Leavitt, 1965; Weisbord, 1978).

The lack of a comprehensive diagnostic model may result in changes aimed at symptoms rather than causes. (Wyman, 2003).

The models discussed in this chapter are presented in the chronological order of their appearance in the literature:

1. Force Field Analysis (1947).
2. The Leavitt's Model(1965).
3. Weisbord's Six Box Model (1976).
4. Galbraith's STAR Model (1977).
5. Nadler and Tushman's Congruence Model (1982)
6. McKinsey's 7S model (1981-1982);
7. The "four quadrants" of Bolman and Deal (1984)
8. Burke-Litwin Model. (1992).
9. Freedman's SWAMP Model (2000).

These models have both common and distinctive features. The most obvious features of these are:

1. The vast majority of the organizational diagnostic models presented are based on open systems theory, therefore the external environment is presented as a separate category that influence the way organizations operate in five of the nine models.
2. Most models illustrated a number of variables that are in a relationship of interdependence. The most obvious example of this "cause and effect" relationship is the Burke-Litwin Model. Models which do not express an interdependent relationship are: Weisbord's Six Box Model and Bolman's four quadrants.
3. The model with the fewest variables is the Leavitt's Model which includes 4 variables and the model with the most variables is Burke-Litwin Model containing 12 variables. The remaining models indicate about 5-6 variables. The key variables in these models can be divided into two categories: those defined in general terms such as Force Field Analysis and those based on well-defined theoretical foundations such as the Congruence Model.
4. These models have a number of common variables, but with different importance in different models.
5. A single model of organizational diagnosis includes performance as a separate variable (eg Burke-Litwin model).

The role of organizational diagnosis in present

As we previously mentioned, economic and political environment in which firms operate today is characterized by a high level of uncertainty. Globalization, intense competition among firms, high degree of product and service customization emphasizes the need to find a rapid response to market forces (Harrison, 2004). This hiper-competition and technological revolution has two effects on organizations: first, the

problems faced by organizations that are growing in number and complexity and second the time available for managers to consider and analyze these issues is declining.

Diagnosis helps managers avoid two types of risky reactions to the uncertain business environment: the tendency to avoid change and improper action. Managers of organizations that have been successful in the past have tended to show a certain resistance to change. The results recorded in the past, creates a "race for success" by supporting the incorrect assumption that the best way to meet future challenges is to rely on strategies and tactics that have had good results in the past (Nadles and Shaw, 1995). Thus, organizational diagnosis highlights the risk of inaction giving aid to managers in identifying the most appropriate actions to respond to turbulent business environment.

According to the authors Weitzel and Jonsson (1989), another risky situation is, as the external conditions worsen, managers act without carefully considering the effects of their decisions. These non-systematic actions have a low rate of success and may also result in a decreased recovery capacity of the organization. Thus, imitation of practices considered "hip" that provide quick resolution of fundamental issues may be an unnecessary waste of time and resources. In this sense, diagnosis helps managers identify the extent to which popular techniques and new trends in organization modeling ensure solving their organizational problems.

To respond to uncertain conditions, managers must act quickly by diagnosing the current situation, plan and implement necessary corrective actions and strategies. The second part of this chapter is destined to the case study. This case study has two objectives:

- The first objective is to assess the financial position of an organization from Romania using the Conan-Holder model. This study uses as a tool secondary sources of data.
- The second objective is to apply the Weisbord's Six Box Model to the Romanian organization using as a tool the Organizational Diagnostic Questionnaire developed by Preziosi and further developed in this study. Diagnosing organization through questionnaires distributed to its members is a great way to get information on what is not working properly, how well aligned the organization is to achieve its objectives effectively.

The first part of our study is based on secondary sources, namely, the indicators included in the balance sheet of the company analyzed.

The second part, used as a starting point Preziosi's organizational diagnosis Organizational Diagnostic Questionnaire (1980) which is an extension of the original version used by Weisbord. Weisbord instrument included 30 statements that were used as

objective measurement of the six variables in the model. Preziosi's questionnaire (1980) includes in addition to the 30 original items, 5 more to reflect an additional factor that is "attitude to change" of members of the organization. This new variable is important in our study because of the many changes that took place in the analyzed company. This questionnaire allows the collection of data regarding the way the organization operates, measuring perceptions of the members regarding those aspects that have to be changed and those that have to be valued to improve organizational success.

In this study we have further extended this questionnaire to include two variables, namely: the external environment-which is present in Weisbord's model without being reflected as a separate variable and performance completely missing, thereby achieving an instrument comprising 44 statements. Overall this survey offers insights on nine categories of variables: purpose, structure, leadership, relationships, mechanisms, external environment, compensation, performance, attitude toward change.

We decided to include this latter variable to identify, based on an empirical study what variables specified by Weisbord have a significant influence on performance. To obtain information on these variables we used the Lichert scale 1-5 (1-totally disagree, 2-agree, 3 undecided, 4 agree, 5-totally agree). According to the results obtained, of the seven independent variables considered only three were found to have a significant impact on individual and organizational performance. Thus, when we search for areas of action these factors should receive the strongest consideration.

CHAPTER 4: Organizational Performance

Organizational performance is one of the most important variable in the management research and undoubtedly the most important indicator of organizational success. The first condition necessary to improve and achieve excellence in business is developing and implementing a system for measuring performance of the organization. According to Robert Kaplan (2003), professor at Harvard Business School: "Each organization must create and communicate ways to measure performance to reflect its unique strategy.

A performance measurement system has many roles (Kanji and Moura, 2002: 715):

- The immediate role of a performance measurement is to check the organization's progress in achieving its targets.
- Another important role of a performance measurement system is to notify individuals the aspects that are important for organizational success and identifying the areas that need improvement

- Finally, a performance measurement system enables the development of efficient and effective development strategy since, no matter how favorable are the results recorded by the organization is always room for improvement.

The deficiencies of traditional performance measurement systems focused on financial indicators such as profit, turnover, etc. have led to the development of performance measurement systems based on both financial and non-financial indicators. This section contains two separate parts designed to clarify first the concept of organizational performance and second to provide information regarding the performance measurement process.

More specifically, in the first part we focused on identifying organizational performance criteria discussed in literature.

The second part is intended to identify the categories of indicators that are used or should be used in the performance measurement process, followed by a review of literature aimed at measuring the performance. Basically the literature oriented toward performance measurement is divided into three categories: in the first category includes the theoretical work designed to clarify the concept of measuring performance, the second category includes the studies aimed at identifying how organizations measure their performance, and the third category includes the studies aimed at identifying the determinants of performance that is essentially a reflection of how performance is measured in the literature.

Continuous performance is the focus of any organization because only through performance organizations are able to grow and progress.

Thus, from the definitions discussed in this chapter, we assert that organizational performance is the most important way of measuring the success of an organization through a set of indicators reflecting the results of the different components of an organization.

The concept of performance measurement faces the same difficulties like that of performance assuming also a variety of definitions.

According the authors Neely, Gregory and Platts (1995:80) performance measurement involves the concepts of efficiency and effectiveness. They define performance measurement as:

- a process to quantify the efficiency and effectiveness of past actions;
- an indicator used to highlight how effective and/or efficient of an action;
- a set of indicators used to quantify the efficiency and effectiveness of action.

Other authors define performance measurement in terms of the economic areas to be assessed: financial, marketing, management.

Thus, in terms of financial accounting, in Otley's view (2002), performance measurement systems have three different roles in an organization:

1. First, they provide a tool of financial management;
2. Second, they provide financial information on the overall performance of the organization, outlining its financial results;
3. Third, they are the means of motivation and control.

According to its financial performance is the main objective determination of performance measurement.

From marketing perspective, Clark (2002) believes that measuring performance means both quantifying and assessing the level of customer satisfaction and comparing the organization with other organizations starting from different market criteria.

From a management perspective, Neely (2005) believes that measuring performance is a necessary tool to highlight the extent to which organizational objectives were achieved and to provide information necessary to improve various processes and activities within the organization.

In our view, performance measurement should not be considered just a way of assessing past performance but also a way to support the organization's daily decision making.

The evolution of performance measurement research includes in two phases (Ghalayini and Noble, 1996):

- (1) The first phase, which began in late 1880, was based primarily on evidence of financial indicators using as main support, the balance sheet. Following the Industrial Revolution which lasted until 1900, another widely used indicator of organizational performance in that period was productivity.
- (2) The second phase began in the late 1980s. The period that followed was considered as a revolutionary period on how to measure performance (Eccles, 1991; Kennerly and Neely, 2003). This increased interest was due mainly to changes occurring in both private and public business (McAdam and Baile, 2002). Companies began to lose market because foreign competitors offering higher quality products at lower prices. To regain the competitive advantage organizations have started implementing a number of new technologies and philosophies of production management: TQM (Total Quality Management), JIT (Just in Time), OPT (Optimized Production Technology). Implementation of these changes has revealed the shortcomings of traditional performance measures. Thus, Eccles (1991) suggested that all large companies should evaluate and change how they measure their performance to adapt to a highly competitive and changing

business environment. He questioned the exclusive use of financial indicators to measure performance proposing their approach as a part of a much broader set of indicators.

In this regard, Jusoh (2008) identifies the following shortcomings of traditional performance measurement systems:

- They are based on indicators that reflect the past and no future.
- They incorporate strategy, the objectives being to minimize cost and increase labor and machinery efficiency.
- Quantify the performance and other improvement efforts with the help of financial indicators although most improvement efforts are difficult to quantify using monetary units (quality, customer satisfaction, timeliness in delivery, etc..).
- They are inflexible, meaning that they have a predetermined format which is used in all departments even though the departments within the organization have their own characteristics thus the indicators used by a department are not necessarily relevant to other department.
- High cost because it requires a large amount of information (Ghalayini and Noble, 1996).
- They provide information on consumers and competitors. (Neely, 1999).

Other authors who have also identified the shortcomings of traditional systems, emphasizing the need to develop new systems for measuring organizational performance are: Johnson and Kaplan (1987), Schmenner (1988), Garrison (1990), Kaplan and Norton (1992), Maskell (1992); Hronec (1993).

Because of shortcomings of traditional performance measurement systems practitioners, consultants and researchers have spent significant resources and effort into rethinking their purpose.

Thus, the period after 1990s, on performance measurement, is characterized by awareness regarding the need to update and improve organizational performance measurement models. Wisner and Fawcett (1991) were among the first who have realized this need to update for in order for performance measurement to remain relevant. Their opinion was shared by Lynch and Cross (1995), Britici et al. (2000) who think that the performance measurement system must be dynamic so that performance measures remain relevant and reflect continuously the most important aspects of their business.

In recent years we observed an increase in organizations' expectation regarding the performance of these systems.

Performance assessment is important because it guides managers in decision making in planning activities, organizing, control and coordination. Evaluation of previous activities

and the identification of variables that influence the organization's performance allow an efficient achievement of organizational objectives. Without measuring "something" is not possible to assess that something and to improve it accordingly. For the success of the organization, particularly important is determining the critical performance indicators and their relationship. (Bayyurt and Orhunbilge, 2007).

An effective performance measurement process requires consideration of two key issues: performance indicators and performance measurement system. The importance of performance measurement results from its five key attributes (Lohman, 2004):

- monitoring: measuring actual performance;
- control: identify and attempt to reduce the difference between the planned and actual performance;
- improvement: identifying opportunities for improving the current situation;
- coordination: providing information for decision making and facilitating internal and external communication;
- motivation: encourage continuous improvement of workplace behavior.

Higgins and Hack (2004) have identified, based on a study, the following difficulties encountered in general by companies in the process of performance measurement:

- (1) Linking performance indicators to strategies, business objectives and budget. One of the most significant challenges of performance measurement process is to focus the organization on critical indicators and generate the desired behavior at each organizational level. In general, organizations consider to be very difficult to correlate the performance indicators with the budget goals and strategies. Failure to achieve results result in the usefulness of the performance measurement system. While achieving these correlations is considered critical according to the survey conducted by APCQ (2004) more than 40% of the analyzed companies have this ability.
- (2) Identifying the categories of indicators considered critical in determining the situation of a given company. In many cases, because of the lack of time or insufficient information, organizations are content to use general indicators. Each organization must identify its own set of indicators that best reflect the vision, mission, values and objectives.
- (3) Ensuring a balance between financial indicators, non-financial, those that regard the past and those that regard the future. Usually managers are tempted to assess the organization in terms of financial results. But, as I noted before, due to the numerous shortcomings of financial indicators it is recommended the use of

several types of indicators (financial, non-monetary, the measuring results-oriented past and the future). This balance is a challenge for a significant number of organizations trying to move away from traditional performance measurement systems that focus only on financial indicators.

- (4) Aligning all organizational levels. This challenge is about ensuring the integration and concentration on strategy and organizational objectives at every level so that performance measurement generates the desired behavior. Achieving this alignment throughout the organization results in the clarification of the managers and employees role providing also information regarding what is important for the organization.

In conclusion, we assert that effective performance measurement process plays an essential role. Theoretically, any performance measurement indicator can be used as a tool to control it. However, no matter how good an indicator is that it will lose its attributes if it is not used effectively to implement actions to improve performance.

A performance indicator is a variable that can be expressed both quantitatively and qualitatively. According to Neely et al. (1995) a measure of performance is a variable used to quantify the efficiency and effectiveness of actions. This definition is further developed by Daum (2004) which includes a qualitative element because different stakeholders value differently the same result which be quantified. Performance indicators captures the characteristics and results in a cannot qualitative or quantitative form.

A performance indicator must be based on a data set or a documented process and be fully understood to convert data in indicators. To interpret an indicator it is necessary to compare it with a predetermined goal. The objectives must be clearly established for each performance indicator and must be a challenge for employees to achieve higher levels of performance (Box et al., 1993).

Performance indicators should be developed by taking into account the actions and behaviors that will be generated from them. Eccles (1992) identified that the impact of an indicator of an activity is not necessarily limited to that activity. Performance indicators can also influence the behavior of individuals within those systems as they respond to performance indicators (Neely et al., 1997). According to Kerr's (2003), people tend to change their behavior and actions taken to improve performance even if it means achieving a wrong action.

The literature on performance indicators can be grouped into three categories:

- The first refers the type of performance indicators which can take two forms: financial and nonfinancial.
- The second category refers to the purpose for which we evaluate that indicator, because indicators can be used to analyze the past results (reactive indicators) but also to make future estimates (proactive indicators) (Higgins and Hack, 2004). Indicators aimed at the future can influence both short-term strategy and the long term, while allowing the identification of solutions to problems that act as barriers to progress towards a specific goal (Kaplan and Norton, 2000). For example, customer satisfaction is an indicator of future revenue and income from earnings is an indicator of past results.
- The third criterion is represented by the aspects covered by that indicator that fall into two categories: internal and external. According to Crowther (1996) the measurement of external performance in order to maintain competitive advantage is as important as internal performance measurement.

For proper performance measurement, it is necessary to use several indicators that regard different organizational levels. Thus, Neely and Gregory (1995) suggest two levels to measure performance: individual indicators and a set of indicators (a measurement of performance) which includes all the individual indicators.

As I pointed out many times before, to be effective, a performance measurement process should be based on a model / system to integrate both financial ratios and non-monetary indicators, because, according to the authors Kaplan and Norton (1992, 1995) non-financial indicators are able to better reflect the organization's performance against financial indicators. Therefore in this section we provided a summary of the most important organizational performance measurement systems.

All organizations profit or nonprofit, publicly owned, private or mixed, should use, in one form or another (formal or informal) models to measure performance in order to assess the organization. The question facing any organizations is the difficulty in choosing the organizational performance model in order to obtain the necessary information on the current state of the organization. Is the organization successful? Why? Why not?

Theoretical issues presented in this chapter allow the formulation of an answer to the question: *Why should an organization measure its performance?* Performance measurement is necessary because by doing so, organizations have the ability to determine whether the objectives have been achieved, to assess their performance and develop future initiatives to improve their performance.

Performance measurement and hence the organizational performance has become a topic of growing interest both among academics and among practitioners especially since late 1980s. Organizations measure their performance for multiple reasons. Perhaps the most important of these is the fact that performance cannot be improved if managers do not know the actual level of performance.

From the vast literature focusing on themes of performance measurement has been found that rapid changes in recent years have made the traditional measures such as profit, productivity and return on investment to be insufficient for planning and controlling the activities in a hyper-competitive environment which is constantly changing.

Shortcomings of traditional measures based solely on financial indicators lead to the emergence of performance measurement systems that include both financial and non-financial indicators. These performance measurement systems have several advantages compared with traditional ones (Ghalayini and James, 1996):

- are based on organization strategy, unlike traditional measures which based on outdated accounting systems;
- are simple, accurate and easy to use, unlike traditional measures that are often difficult to use;
- do not have a fixed format (depends on needs) as opposed to traditional measures ones that have a fixed format;
- the main purpose is to improve performance unlike traditional measures whose principal purpose is to assess performance;
- they change over time if necessary unlike traditional measures which not change over time;
- they support continuous improvement unlike traditional measures which prevent continuous improvement.

Analyzing the vast literature in organizational performance we found that large organizations use the financial ratios and non-financial indicators, while small and medium firms use financial indicators, with little importance given to non-financial indicators. Also use performance measurement systems are found mainly in the large firms, small firms resort to a very limited extent to these systems to measure their performance.

Performance measurement is and remains a topic of growing interest among researchers because of their desire to find the answer to the question: Is there any model to accurately measure the performance of an organization?

RESEARCH METHODOLOGY

In this chapter we present in detail a model developed to assess, based on various dimensions, the organizations subject to study and to compare their performance. The model used in this study was drawn from the organizational diagnostic models discussed and a detailed study of the literature to identify the factors that influencing the organizational performance.

There are a variety of studies have investigated the factors that have a critical role in the success of an organization. Among these, key factors considered to have an impact on the performance of an organization are: customers (customer orientation), quality of staff and innovation (Peters and Waterman, 1982, Drucker, 2001, Kotler, 2003).

The key elements of the model are:

1. Structural issues relating to firm size (employment), age (years), and purpose.
2. Dimensions (variables) used to evaluate the sampled firms. These dimensions fall into two categories:
 - External environment reflected by the following variables: competition, customers and suppliers.
 - Internal environment reflected by the following variables: strategy, leadership, employees, quality, performance measurement, innovation and development and information technology.
3. Organizational performance reflected through their results.

The objectives of this model of organizational diagnosis are:

- The analysis of the sampled firms using the model variables.
- Dividing organizations, based on survey results in two categories: successful organizations and unsuccessful organizations.
 - Analyze attributes of both types of organizations.
- Testing a number of 4 empirical assumptions about how organizations measure performance:

Hypothesis 1: *Organizations focused on differentiation strategies use in the performance measurement process in a bigger proportion nonfinancial indicators compared to organizations focused on cost strategies.*

Hypothesis 2: *The frequency of use of non-financial indicators in the performance measurement process is directly proportional to the size of the organization.*

Hypothesis 3: *The biggest the degree of utilization of information technology the more important are the non-financial indicators in the performance measurement process.*

Hypothesis 4: *Firms operating in a business environment characterized by an increased level of uncertainty use more frequently non-financial indicators compared to firms that have to operate in a lower level of uncertainty.*

- Examination of the relationship between the model variables and organizational performance.
- Analyze the relationship between organizational success and the frequency of monitoring the financial and nonfinancial indicators.

The organization of the empirical study is represented schematically in Figure 2.

1. Renis Likert supported the use of questionnaire to diagnose organizations. In this context we developed a questionnaire to obtain data to quantify the 10 dimensions of the model. The questionnaire is grouped into 10 parts: strategy, leadership, employees, structure, quality, performance measurement, innovation and development, information technology, external environment and results. The items in this questionnaire are divided into two categories: items based on the Likert scale 1-5 and two choice items designed to reflect respondents' agreement or disagreement with regard to that question.
2. The second step was to distribute the questionnaires to target population, the collection and centralization of the responses. In this step we also evaluated the surveyed companies based on the responses received starting from the model dimensions.

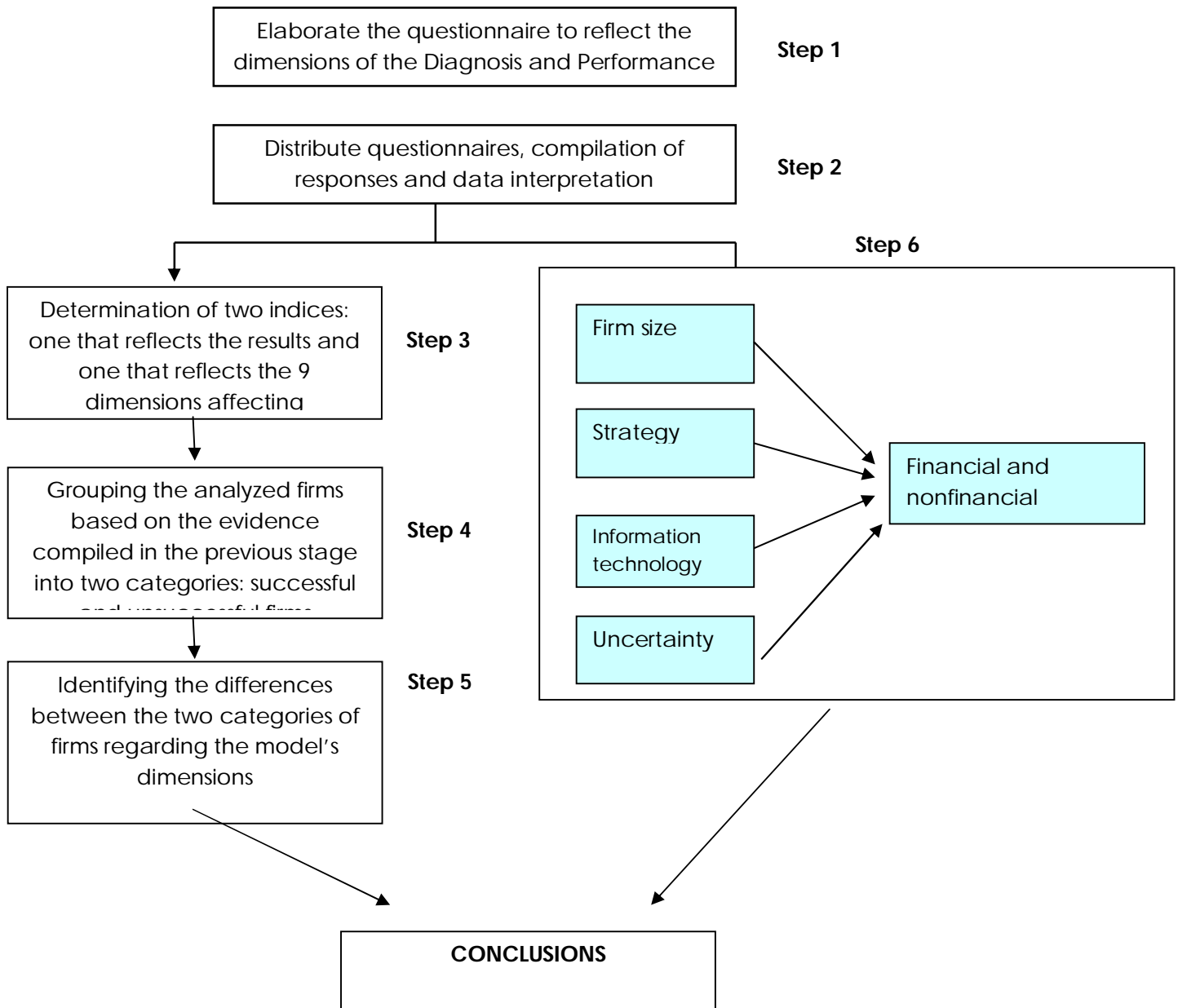


Figure 2. Organization of the empirical study

3. The third step of the empirical study includes the calculation of the indices for the two model categories: results and dimensions (internal and external) which is considered to have an impact on performance. Thus for each firm we have examined two indices. The assumption on which we rely in this part of the study is that firms which registered high values of the dimension indices that influence performance and will have high value of the indices that quantifies the results.

4. The fourth step is the study consists in grouping the analyzed firms, based on indices calculated in the previous stage, in two categories: successful and unsuccessful firms.
5. Identifying the differences between the two categories of firms regarding the dimensions of the model.
6. The sixth step is to conduct a deeper analysis of organizational performance measurement process, with preference focusing on the relationship between performance measurement and a number of variables specified in the model.
7. The last step of the research will result in the development of conclusions and proposals based on the results obtained.

The target population: The main source for determining the sample covered by this study was the database developed by the Chamber of Commerce and Industry of Romania (CCIR) entitled: Pro Business Romania, 2009. This database contains information on a large number of Romanian companies in all fields. The main information included in this database are: company name, tax code, number of registration in the Registry of Commerce, address, phone, fax, e-mail, web site, object of activity, turnover, gross profit, number of employees. Also in this database are listed the companies included in Top National Companies 2008 elaborated also by the CCIR. Within this database we selected only the manufacturing firms obtaining a sample of 7437 firms. The sample thus formed was reduced by selecting those companies that have an e-mail because questionnaires were sent to companies electronically. The number of firms in the industry who have an email address within the database is 2296. Of these, 272 companies have provided email addresses are invalid or inactive. This reduced the population covered to 2024.

The instrument used in this study is represented, as I said earlier, by a questionnaire developed in order to obtain information on the 10 dimensions of the Diagnosis and Performance Model. The questionnaire contains a total of 86 items grouped into 39 questions. The first part of the questionnaire included 7 questions to provide some structural information such as position of respondents in the company, company name, county where the company is located, number of employees, firm age, the activity and e-mail of the respondent. The statements of the second part of the questionnaire are grouped into 10 categories covering the dimensions of the model. The number of companies that have completed the questionnaire amounted 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 vast majority of invalid questionnaires included only responses to the first 7 questions to provide structural information so it could be used in the study). The rate of validation in this case is 4.5%. Of the firms responding only 16% are companies included in the Top National Companies in 2008.

The reduced rate of valid responses in this study is not very surprising. In the literature there are other authors who have shown that in such studies the rate of responses is low (Abdel-Maksoud et al., 2008 surveyed 1155 Japanese companies, to identify management practices, with a response rate of 7.2%, Bescos and Cauvin, 2003 surveyed 2502 French companies, to identify how these companies measure their performance obtaining a valid response rate of 6.3%). An explanation of the low response rate is a distrust of firms to provide any information on their activity (this aspect has been identified after we contacted some of the surveyed firms directly).

DATA ANALYSIS AND RESULTS INTERPRETATION

The main objective of this part is to provide information to assess the companies surveyed based on responses received for each of the 9 dependent variables in the model. In a first phase, to ensure standardization of the results we calculated for each company separately and for each dimension of the model an index with a value between 0 and 100 (100 representing the highest level of excellence of the company on that dimension). Since our model includes dimensions that are considered to have an impact on performance, we expect that companies that excel on the 9 variables that reflect their practices (external environment, strategy, leadership, staff, structure, quality, performance measurement, innovation and development, information technology) will also have high indices of the results. In essence, we want to identify to what extent the firms practices were reflected in their results.

The results obtained from determining the two categories of indices for each of the 92 companies show that the practices reflected through the 9 dimensions matter, more specifically firms with better practices and have better results. Figure 3 which illustrate, in addition to the two categories indices the regression line considering the outcomes as a dependent variable confirms our expectations, more specifically as firms improve their practices their performance will also improve.

This information should be treated with greater interest by those companies that have significant deviations from the regression line shown in the figure below.

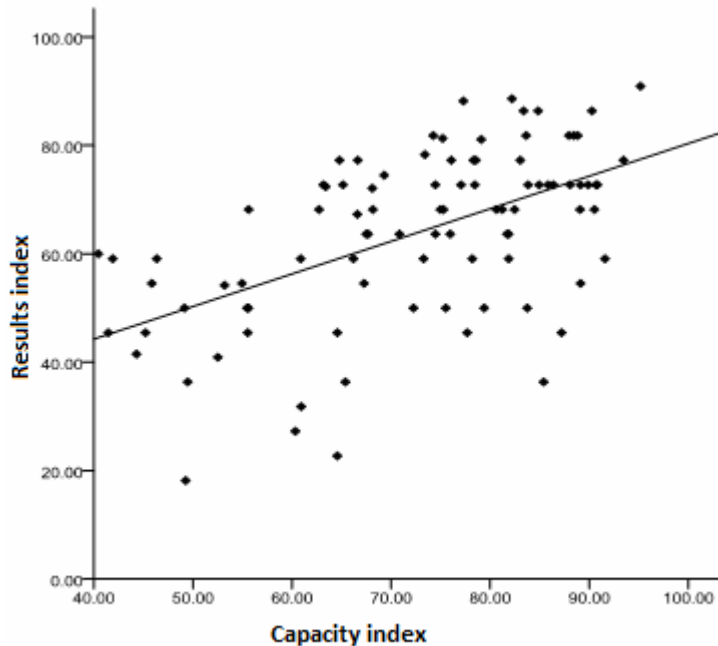


Figure 3. Regression line for capacity and results indices

Some deviations from the regression line shown, especially those showing high levels of the capacity index, but low values of results index may find explanation in the current economic crisis that affected the results, and hence the performance of numerous companies.

Based on capacity and results indices we have achieved a ranking of firms (which is Step 4 in the study), more specifically, we divided the companies into two categories:

- The first category is represented by those companies that recorded a score of both indices in the first 30 percent of the ranking (that companies will be named from now on: the first 30%);
- The second category is the less efficient firms that recorded a score of both indices in the last 30 percent of the ranking (that companies will be named from now on: the last 30%).

These two categories represent the best and worst cases of the firms. The first category includes those companies that are able to carry out their activities effectively and thus ensuring their success and the second category are those companies whose practices are not that good which is reflected in the results obtained and their performance. Firms in the second category must improve practices to climb in the rankings and reach the top firms in the first category. In this study 12 firms fall into the first category (13% of the surveyed firms). Of these, 58% are companies included in the National Top, 2008 created

by the CCIR. In the second category includes 16 companies (17% of firms surveyed). None of the companies included in the National Top, 2008 fall under this category. The difference between the two categories of firms is illustrated by Figure 4 which reflects the difference between the average scores for each of 9 variables that reflect the practices of the surveyed companies.



Figure 4. Differences between the average scores for the two categories of firms

The results obtained by ranking firms proves the existence of a previously developed close relations between firm size and performance obtained because a much smaller proportion of small and medium firms compared to large firms fall within the firms ranked in top 30 percent based on the two indices: practice (capacity) and results:

- Of the 92 responding companies, 10 are micro firms (1-9 employees) and none of them is ranked in the top 30%;
- Of the 92 responding companies, 33 are small firms (10-49 employees) and 15.12% of them are ranked in the top 30 percent;
- Of the 92 responding companies, 35 are medium firms (50-250 employees) and 11.42% of them are ranked in the top 30 percent;
- Of the 92 responding companies, 14 are large firms (over 250 employees) and 28.5% of them are ranked in the top 30 percent.

The indices (those related to variables that affect performance) highlight the differences between the four categories of firms based on number of employees: micro, small, medium and large. More specifically, firm size is directly proportional to the average

index value of capacity. The average values of these indices for small start at 41, for medium firms from 45 and for large firms from 54. This relationship can be justified as follows: the larger the firm, the greater its complexity is greater being more difficult to control and thus it is necessary to apply where possible best practices for maintaining control and ensuring the market success. .

Proof of this relationship is further highlighted by Table 1 which includes the median values of the capacity (practices) indices for each of the 9 dimensions of the model considered to have an impact on business performance for each company based on the number employees.

Table 1 Median score for capacity (practices) indices

Dimension	Micro firms 1-9 employees	Small firms 10-49 employees	Medium firms 50-250 employees	Large firms over 250 employees
Strategy	73	75	94	96
Leadership	81	82	85	88
Employees	58	59	58	63
Structure	100	100	100	100
Quality	33	67	100	100
Performance measurement	71	75	75	76
Innovation-development	83	83	92	92
Information technology	25	25	25	100
External Environment	71	75	76	78

As it can be seen, for each of the nine practices dimension the median score increases with firm size.

The largest discrepancies are observed in the case of information technology implemented in a very limited extent in small and medium enterprises. The explanation for this discrepancy is that these companies can run their activities without explicitly relying on information technology, at least until they grow in size and complexity. These results show that the size of the firm is not in contradiction with its ability to be successful on the market. This is proved by the fact that most top companies ranked in the first 30 percent are small, accounting for a share of 41% of this category as opposed to large companies with a share of only 33%.

Next we will present the results for each of the nine variables that reflect the practices of companies analyzed for all firms as well as for each category of firms(successful and unsuccessful):

- 1. Strategy:** The first element within this dimension is the firm's strategic priorities: price, quality, speed in delivery, flexibility, innovation, lower costs, products with

unique characteristics, availability of products, adapting products to customers. Each of the nine strategic priorities are considered more important by firms in the first category (ranked in top 30% based on two categories of indices), compared with firms in the second category (ranked in the last 30%). Specifically, the only issue which has an average score above 4, thus considered important in developing strategies for companies in the second category (the worst), is adapting the products and services to customers. In contrast, firms perform better in the first category considers each of the 9 points above the important and very important in developing strategies, each recording the average scores above 4. Overall, the adaptation of products and services to customers is considered the most important aspect in development strategies, giving an average score of 4.70. The existence in the firms surveyed has a clear strategy to guide their programs and activities in the context of their vision and mission, 73.31% of companies surveyed believe that such a strategy exists. This proportion is higher (91.67%) within the first 30% of firms and much less for the last 30% of firms (31.25%).

2. Leadership: All surveyed companies consider that their company has a formal planning process. The vast majority of companies surveyed (56.79%) had established through these planning process objectives for 1 year, 4.94% for 2 years and only 3.70% of the 92 companies set their goals through the planning process for more than 2 years. In this situation we can observe differences between the two categories of firms, because for companies in the last 30% the planning process has a much shorter horizon, ie 6 months. None of the interviewed companies that fall into this category aims through the planning process to establish objectives for more than two years. In contrast, 16.67% of successful companies establish their goals for more than 2 years. With regard to clarity of mission, 80% of the 92 firms surveyed consider that their company mission is clearly stated. Regarding the two categories of firms, 100% of successful firms and only 53.3% of the least successful ones believe that their mission is clearly stated. Although the vast majority of companies falling in the first 30% believe that they promote to a great extent their values to employees, most of the firms ranked in the last 30% believe that their values are promoted in a lesser extent to their employees.

3. Employees: Regarding the measuring frequency of employee satisfaction, there is a deviation from the trend registered so far, namely, 31.25% of the last 30% of firms said that their company does not measure employee satisfaction compared with a significantly higher percentage (54.55%) recorded for leading companies. If we look at the answers given by all 92 companies surveyed the outcome is more positive,

namely, only 13.58% of companies do not measure employee satisfaction, 62.96% of companies measure employee satisfaction annually and 23.46% of companies measure employee satisfaction at 6 months or less.

- 4. Structure:** The vast majority of companies surveyed said that their tasks within the company are flexible, clearly defined and allocated in such way as to contribute to achieving their goals. In the firms ranked in the last 30 percent, only 53.33% feel that lines of authority and responsibility are clearly defined.
- 5. Quality:** 56.79% of all companies surveyed have implemented the quality standard ISO 9001, 9.88% of firms are in the process of implementation and 20.99% plan to implement the quality management system in the near future. Only 12.35% of companies surveyed do not intend to implement this standard of quality in the near future. The vast majority of companies (91.67%) included in the top 30% have ISO 9001 certification. The remaining 8% are in the process of implementation. For the firms included in the bottom of the ranking (last 30%), adoption of such a quality standard is more difficult, only 33% of companies have implemented a quality management system.
- 6. Performance measurement:** The vast majority of firms (74%) use in the performance measurement process both financial and non-financial indicators. Only 12% of firms evaluate only their financial performance. Performance measurement systems are still hitting the road in the Romanian firms, only 13% of companies in the industry use their systems for measuring performance. In measuring performance for both categories of firms (first 30% and last 30%) 58% of firms use performance both financial and nonfinancial indicators and 42% use performance measurement systems. For the less successful firms, 69% use both financial and nonfinancial indicators, and only 31% of these use only financial performance measures. Regarding the improvement of the performance measurement process, only 55% of companies surveyed and 18% of companies ranked in the last 30 percent considered a priority the need to improve and upgrade this process.
- 7. Innovation and development:** Within the companies surveyed can identify a customer orientation, 90% of them have introduced lately new products for customers and improved the products that are already offered. Regarding the technology used the results are less favorable. Only 26% of the interviewed companies use cutting-edge technologies. The discrepancy between the two categories of firms is also evident in terms of technology used, the vast majority of successful firms use advanced technologies that are not older than 4 years. In contrast, about half of the less successful firms use technologies which are 10 years older or more. The results

highlight the need, to encourage investment in equipment and technology to enhance competitiveness and technological innovation.

8. Information Technology: 58% of the interviewed companies use information technology in some departments. In contrast 67% of successful firms use computerized modules in all departments. Integrated ERP systems are still at an early stage in the companies surveyed, only 38% of them have implemented such a system

9. External environment: The results regarding this dimension show that, even if 82.61% of companies ranked in the last 30 percent perceive a significant number of competitors they do not take steps to improve their practices and capabilities to enhance competitiveness. Results of the uncertainty of the business environment are very different based on the firm size. Small and medium firms characterized their business environment as very unstable, especially regarding demand, behavior of the competitors, government regulations and product technology. The situation is very different for large firms which consider very least difficult to anticipate the future of the business environment.

Testing hypotheses: Step 4 of the empirical study includes testing several assumptions in order to achieve a deeper analysis of the performance measurement process by identifying the relationship between the importance of performance indicators and strategic orientations, size, information technology and the degree of business uncertainty that characterize the analyzed firms.

To identify the possible internal structures of the variables involved in testing the 4 hypotheses, we conducted a factorial analysis of main components of these variables using Varimax rotation. This facilitates the interpretation of the variables and implicitly testing the assumptions.

We started with the analysis of the performance measurement because this variable is found in each of the 4 hypotheses. Factorial analysis with Varimax rotation of these variables led to the identification of four components that explained 66.9% of total variation. These 4 new variables obtained by factorial analysis will be used later to test the 4 hypothesis.

The four hypotheses, as we previously mentioned refer to the relationship between strategy, information technology, firm size, uncertainty of business environment and the way companies measure their performance. Next we examine each of the variables specified above by identifying their main components.

Strategy. To highlight any internal structures of the 9 strategic guidelines, we conducted in this case also, a factorial analysis of main components using Varimax rotation. This

analysis resulted in identification of three components explaining 64.2% of total variation. The three new strategies identified are very similar to those presented by Chenhall and Langfield-Smith (1998) whose study was used as a starting point in identifying the 9 strategic priorities outlined above. These three factors derived from factorial analysis were selected as new variables and will then be used for testing hypothesis 1.

The uncertainty business environment: For this variable, the factorial analysis led to identification of 2 components which explained 51.8% of total variation. These results will then be used to test hypothesis 4.

Table 2. Correlation between variables used to test the hypotheses

		Performance measurement (financial and nonfinancial indicators)			
		Factor 1 (Market)	Factor 2 (Employees)	Factor 3 (Financial 1)	Factor 4 (Financial 2)
Firm size	Employees	0.246*	0.145	0.018	0.183
	Turnover	0.259*	-0.050	-0.002	0.140
Strategy	Clients	0.267*	0.370**	0.246*	0.254*
	Product	0.245*	0.304**	0.248*	0.055
	Efficiency	0.165	0.150	0.244*	0.194
Information technology		0.336**	0.365**	0.215	0.232*
Uncertainty	External	0.222*	0.140	0.045	-0.034
	Production	0.198*	0.188*	0.038	0.175
	Uncertainty*** (global score)	0.261*	0.209	0.051	0.105

* Correlation is significant at $p < 0.05$

** Correlation is significant at $p < 0.01$

***Global score of uncertainty (the average score for the 7 items)

The first hypothesis based on the correlations illustrated in Table 2, is validated. We can notice a significant positive correlation at 0.05 between efficiency (factor for cost strategies) and Financial f1 (which includes only financial indicators such as return on assets, return on investment, economic value added, investment in information systems). There was no significant correlation between efficiency factor and variables that exemplify effective utilization of non-financial indicators.

On the other hand, there is a significant positive correlation between product variable (which is centered on the uniqueness and availability of products) and customers (which includes issues of product quality offered to consumers: quality, speed in delivery, flexibility and adaptation of products to customers) and both variables incorporating non-financial indicators in the following way: positive correlation significant at 0.05 level between the two variables (product, customers) and the variable market (which includes

the vast majority of non-financial indicators) and a significant positive correlation at 0.01 between the two variables (product, customers) and the variable employees (which includes the remaining non-financial indicators used in this study). According to these results we can say that companies focused on differentiation strategy tend to use to a greater extent nonfinancial indicators to measure performance compared to firms oriented towards cost strategies.

The second hypothesis concerns the relationship between firm size and frequency of use of nonfinancial indicators. To test this hypothesis firm size was quantified in terms of number of employees and in terms of turnover for all firms.

The results illustrated in Table 2 shows a partial validation of this hypothesis. Thus, it can be observed a significant positive correlation at 0.05 between company size (both in terms of employees and in terms of turnover) and variable market (incorporating the vast majority of nonfinancial indicators). There wasn't a significant relationship between firm size and the variable "Employees" which incorporates the rest of the nonfinancial indicators. However, since the first component factor reflecting the variable performance measurement explains most of the variation in this variable (32.1%), we can say that firm size is important and must be carefully considered in the study of performance measurement.

The third hypothesis is validated. The results show a significant positive correlation at 0.01 between the variable designed to quantify the utilization of information technology and nonfinancial indicators incorporating two variables: market and employees. This result is easily explainable as information technology facilitates the monitoring process of performance indicators, thus easing the work on performance measurement.

The fourth hypothesis is partly validated. From Table 2 there we can observe a significant positive correlation at 0.05 between the variable designed to quantify the global "uncertainty" facing companies surveyed and the variable "market" (which incorporates the vast majority of financial indicators).

If the uncertainty variable is decomposed we can observe the following:

- The production variable which includes those aspects that can influence production (the price of raw materials, production technology, availability of raw materials, trade union activities) positively and significantly correlates with both variables incorporating nonfinancial indicators;
- The "External" variable which corresponds with the uncertainty generated by demand, competitors' behavior and government regulations, positively and

significantly correlates at 0.05 with only the first factor that reflects performance measurement.

Based on these results we can say that the uncertainty generated by those aspects that can influence production (the price of raw materials, production technology, availability of raw materials, trade union actions) has a greater impact on performance measurement process compared to the uncertainty generated by demand, competitors' behavior and government regulations.

The relationship between dimensions that reflect the practices of surveyed companies and their performance:

The results on the relationship between the 9 model dimensions that illustrates the capabilities / practices of the surveyed companies and their results are presented in Table 3. To better highlight the relationship between firms' practices and their performance divided this latter variable in two categories (financial performance and nonfinancial performance).

Table 3. Pearson correlation between variables

Variables that reflect the 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*
External environment	0.445**	0.209	0.445**

* Correlation is significant at $p < 0.05$

** Correlation is significant at $p < 0.01$

Results regarding the influence of practices on financial and nonfinancial performance show the following:

- The most significant impact on financial and nonfinancial results have the practices regarding strategies, performance measurement, employees and innovation and development. Thus, firms that want to improve their performance (both financial and nonfinancial) have primarily to improve practices that reflect these dimensions;

- A lesser impact on financial results, but not at all negligible has the variable leadership;
- The dimensions regarding quality and information technology has a significant and positive influence at the 0.05 level on the nonfinancial results registered firms. This is somewhat understandable because nonfinancial results quantify largely customer satisfaction, the rate of returned products and quality quantified in terms of quality standards has a positive effect on the mentioned nonfinancial indicators;
- External environment, as in the case of the other two dimensions mentioned above, has a significant at 0.01 level and positive impact only on nonfinancial results of the surveyed companies;
- Based on grouping performance on the two categories (financial and nonfinancial) we can observe that the structure dimension becomes more significant having a positive (at 0.05) influence on the nonfinancial results registered by firms.

The results confirm what we have emphasized many times during this work, namely, practices and capabilities results and thus the performance of analyzed firms.

The relationship between successful organizations and the use frequency of performance indicators:

To investigate the relationship between firm performance and the use frequency of financial and nonfinancial indicators in the performance measurement process, we used as a statistical method the canonical correlation analysis. We choose this method because, unlike the Pearson correlation (which identifies a linear relationship between two variables), this method allows the identification of the relationship between two sets of variables, being an extension of the multiple regression.

Table 4 shows the canonical weights (canonical loadings) for the significant correlation.

Table 4. Canonical loadings

	Market	Employees	Financial 1	Financial 2
U1	-0,792	-0,815	-0,911	-0,005
	Total performance	Financial performance	Nonfinancial performance	
V1	-0,887	-0,998	-0,441	

According to this table, all three performance variables have significant canonical weights (in the literature is considered significant a canonical weight higher than 0.4). Of

these, financial performance has the largest weight (in absolute value 0.998) and thus is the most important variable in this set. In the category of independent variables the largest weight is registered by the variable financial 1 (-0.911) followed by the variable employees (-0.815) and market (-0.792). The weight of the variable financial 2 is insignificant.

In conclusion we can say that the results indicate a strong relationship between the measuring frequency of all nonfinancial indicators and indicators of profitability, overall performance, financial and nonfinancial performance.

These results should attract even more attention on the need to improve the performance measurement process because of the significant impact it has on business results.

FINAL CONCLUSIONS AND RESEARCH PERSPECTIVES

To gain a general image we structured this chapter into four distinct parts, as follows:

- Presentation of the main contributions of this research both in academia and in practice.
- Presentation of the overall findings for each dimension of the Diagnosis and Performance Model and highlight the key aspects that differentiate the successful firms from the least successful ones.
- Presentation of the main limitations of this study.
- Identify opportunities for future research.

The main contributions of the study:

The main contributions to the field through our research fall into three categories:

1. theoretical contributions embodied in enriching literature in this area by:
 - clarification of the concept of organizational development, presenting its evolution over time and highlight its role in the process of organizational diagnosis;
 - clarification of the concepts of performance and performance measurement by highlighting both the key performance indicators identified in academic literature and in practice, and the main performance measurement systems;
 - presentation of the chronological evolution of the performance measurement process by illustrating the main stages identified over time;
 - presentation and comparative analysis of the key organizational diagnostic models that were found both in literature and in practice;

- highlighting the role of an organizational diagnosis today.
2. empirical contributions through the empirical study based on a model of diagnosis and performance. The results of this study allow:
 - the identification of the main aspects concerning the practices of companies surveyed that are crucial for improving their performance;
 - a classification of organizations, based on survey results in two categories: successful and less successful organizations;
 - an identification and analysis of performance attributes that distinguish successful from the least successful firms;
 - the identification of a relationship between practices and performance of these firms;
 - the identification of those factors that influence the performance measurement process;
 - the identification of a relationship between the frequency of use of performance indicators and the success of organizations.
 3. contributions for the Romanian business environment:
 - The results of this research can be used to identify strategies and guidelines that can help to improve performance especially for those companies located in the last 30 percent of the ranking, according to the indices that reflect the practices and the results registered by the sampled firms.

Conclusions on the nine dimensions that reflect the practices of the surveyed companies:

In this study we presented the results of the questionnaire distribution elaborated based on the *Diagnosis and Performance Model* to a sample of 92 firms. The model developed in this study includes 10 variables divided into two categories: one category is meant to identify the practices of companies surveyed quantified using nine variables: strategy, leadership, structure, quality, innovation and development, information technology, performance measurement, employees and external environment and a category that is meant to reflect the performance of these firms measured in terms of the results achieved by them.

In order to standardize the data from questionnaires we calculated for each firm separately two categories of indices: a category that reflects the practices of firms and a category that reflects their performance. Based on these indices firms were grouped into two categories: first category is represented by the companies included in the top 30 percent of the ranking based on evidence of practices and results, and the second category

includes companies ranked in the last 30 percent. This grouping of companies has allowed the identification of those aspects which distinguish the most these the two categories.

The biggest differences between the two categories of companies were registered in the practices related to quality, employees and strategies. The smallest differences between the two categories of companies were registered for the variables reflecting the structure and the external environment.

The results obtained by ranking firms proves the existence of a previously developed close relations between firm size and performance obtained because a much smaller proportion of small and medium versus large firms, fall within the top 30 percent based on the two indices: practices and results.

The results obtained from this analysis show that there is a significant positive relationship between firm size (quantified in terms of number of employees and turnover) and the importance of nonfinancial indicators in the performance measurement process (the bigger the firm, the greater the importance of nonfinancial indicators). These results are consistent with those obtained from Hoquiam and James (2000).

As in the study conducted by the Bescos and Cauvin (2004), this study has shown that companies focused on differentiation strategy tend to use more often nonfinancial indicators compared with firms oriented toward cost strategies.

Information technology has also proved to have a significant impact on the process of performance measurement, demonstrating the existence of a positive relationship between the degree of the use of information technology and the importance of nonfinancial indicators in the performance measurement process.

The relationship between the degree of perceived uncertainty and the importance of financial indicators we identified the following:

- Firms that perceive a high level of uncertainty regarding demand, the behavior of competitors and government regulations tend to make greater use of nonfinancial indicators compared to firms that perceive a low level of uncertainty regarding the issues listed.
- Firms that perceive a high level of uncertainty regarding the price of raw materials, production technology, availability of raw materials, trade union actions tend to use to a greater extent only those nonfinancial indicators included in the market variable (market share, customer satisfaction, customer loyalty, employee satisfaction, labor productivity, delivery time of orders, order processing time, number of days of delay, scrap rate, the rate of returned products,

the number of markets we serve, developing new products, compliance with the environment).

We believe that this study is an essential contribution to the organizational performance literature because it allows a better understanding of the performance measurement process and the factors explaining the use and nonfinancial indicators and the balance between the two categories.

Conclusions regarding the performance measurement process

Companies that seek to compete with industry leaders have to review and improve how they measure performance. Therefore, another objective of our study was to conduct a deeper analysis of the process of performance measurement in manufacturing Romanian firms by identifying the factors that influence its progress and also by identifying its influence on the performance of firms. The results show the following:

- The performance measurement process is influenced by firm size: as the firm size increases, nonfinancial indicators are becoming more important in the process of performance measurement.
- Firms oriented toward a strategy of differentiation use to a bigger extent nonfinancial indicators compared to firms oriented toward a cost strategy.
- The performance measurement process is also influenced by the degree of utilization of information technology: the greater the degree of information technology utilization, the most important the nonfinancial indicators in the performance measurement process.
- Business uncertainty has an impact on how companies measure their performance: firms that face a high level of uncertainty tend to use to a scale nonfinancial indicators compared to firms operating in a less uncertain business environment.

To identify the relationship between performance measurement process and the results of the companies surveyed we used canonical correlation analysis that allows the identification of the relationship between two sets of variables. The results show a strong relationship between the three performance variables (total, financial and nonfinancial) and the frequency of use of nonfinancial indicators in the performance measurement process. These results underline the need to improve the performance measurement process for those companies that wish to increase their market success. These results have increased value because in this study only 55% of all companies surveyed and 18% of companies ranked in the last 30 percent considered a priority the improvement of the performance measurement process.

Thus, our study shows a significant positive relationship between process of performance measurement and the financial and nonfinancial results registered by the analyzed firms.

The frequency of use of performance indicators have an impact on performance. The results indicate a strong relationship between the measurement frequency of all nonfinancial indicators and the indicators of profitability and overall performance and financial performance.

Study limits:

In addition to the essential contributions reflected through enriching the literature and through our results, this study has several limitations that may be structured as follows:

- Although organizational diagnosis is a common theme in Romanian literature, performance measurement is less researched and therefore the Romanian literature concerning this topic is reflected in a lower proportion in the study.
- The uncertainty Romanian firms on providing information on activities and results led to a reduced rate of response to questionnaires distributed to collect data. The low response rate may be also explained by the complexity of the questionnaire distributed to quantify the model developed in this study;
- The inability to obtain information on performance indicators from Romanian firms led to the use of questionnaires as the main source of data collection. Because data were collected through questionnaires (secondary data were used to a very small extent) there isn't complete certainty about the sincerity of respondent companies;

There is a possibility that the validity of results on performance quantified in terms of development of performance indicators is be affected by the current economic crisis.

Future research perspectives:

This study revealed a number of research opportunities that can provide extensive information on the researched topic. Among them we can mention:

- Extending the model of diagnosis and performance by including more dimensions to reflect the practices of firms in the Romanian industry;
- Combining data collected through questionnaires with secondary data (absolute values of performance indicators) to increase the validity of the results;
- Repeating the study after a period of time (1 year or two) to make a comparative analysis by identifying how the companies analyzed have evolved over time, if they have improved their practices to achieve better results. Currently the results

are distributed to all companies interested in participating in this study so that they are able to identify their position relative to the best companies analyzed.

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