

## MEASURING PERFORMANCE IN ORGANIZATIONS FROM MULTI-DIMENSIONAL PERSPECTIVE

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### **Abstract**

*In turbulent financial and economic present conditions a major challenge for the general management of organizations and in particular for the strategic human resources management is to establish a clear, coherent and consistent framework in terms of measuring organizational performance and economic efficiency. This paper aims to conduct an exploratory research of literature concerning measuring organizational performance. Based on the results of research the paper proposes a multi-dimensional model for measuring organizational performance providing a mechanism that will allow quantification of performance based on selected criteria. The model will attempt to eliminate inconsistencies and incongruities of organizational effectiveness models developed by specialists from organization theory area, performance measurement models developed by specialists from accounting management area and models of measuring the efficiency and effectiveness developed by specialists from strategic management and entrepreneurship areas.*

**Keywords:** organizational performance, measuring performance, efficiency, effectiveness, multi-dimensional model.

**Classification JEL :** L25

### **1. Introduction**

Organizational performance can be measured in several ways, resulting many different and subjective interpretations of success performance. Within each organization it can meet a number of specific circumstances which make performance measurement an inherently a situational action (Cameron, 2010). Such problem poses an obstacle for researchers as a theory on performance measurement involves the development and testing of a model to explain or predict a particular phenomenon based on a generalized model (performance being a dependent variable that is determined by a number of independent variables). Although it is possible to develop a multidimensional model of organizational performance, building of a model that addresses all categories of stakeholders is problematic, since each category of stakeholders may have different and contradictory objectives (Sitnikov and Bocean, 2012) and may give importance of a specific dimension of organizational performance. Therefore, there is a strong need for a unified view of organizational performance.

Although over the years there have used various measures of organizational performance, there have been few studies that discuss why certain measures were used in the studies (Kaplan and Norton, 1992, Murphy et al., 1996; Carton, 2004; Merchant and Van der Stede, 2011; Landy et al., 2017), which are the limitations of these measures may in interpretation or generalization of research results (Brush and Vanderwerf, 1992; Robinson, 1998), or the multi-dimensional of organizational performance (Cameron, 1980; Kaplan and Norton, 1992, Murphy et al, 1996; Cameron, 2010; Hubbard, 2014; Hatry, 2017). However, no study proposed a multi-dimensional generalized model of organizational performance empirically successfully tested. This is a particularly difficult problem because changing environmental conditions increasingly accelerated in recent decades due to globalization and information economy can generate different priorities

performance dimensions at different times. For example, during economic crisis, liquidity can be more important than profitability, while during periods of economic growth, profitability and organizational growth may have priority (Landy et al, 2017).

Organizational performance analysis is particularly important for several reasons taking into account as many dimensions of performance. First, a multi-dimensional model of organizational performance was not explicitly studied in many research. Studies conducted until present (Venkatraman and Ramanujam, 1987; Kaplan and Norton, 1992; Murphy et al, 1996; Robinson, 1998; Wagner, 2008; Cameron, 2010; Merchant and Van der Stede, 2011; Hubbard, 2014; Venkatraman and Ramanujam, 2017; Hatry, 2017) demonstrated the existence of multiple dimensions of performance, but failed to capture all facets of performance. Secondly, a generalizable performance measurement model has significant implications for future research and review of the results of previous research where particular models were used to measure the dependent variable.

Finally, a multi-dimensional model for measuring organizational performance can significantly improve stakeholder understanding on effectiveness of management. It allows measuring value creation and its distribution methods and comparisons between companies that have chosen different ways to create and distribute value (Carton, 2004).

The structure of paper consists of five sections. The first section sets out some introductory elements. The second section provides a brief exploratory research on performance measurement in management literature. In third section we present indicators used to measure organizational performance. Based on the results of exploratory research in the fourth section we developed a multi-dimensional model for measure organizational performance. Section five concludes and presents future research directions.

## 2. Literature review

Although the concept of organizational performance is very common in the literature, it is difficult to define because of the multitude of meanings, perspectives from which can be seen. For this reason, there is no universally accepted definition of this concept nor a generally accepted tool for measuring organizational performance (Gavrea et al., 2011). Despite the importance of precise measurement of organizational performance in several areas of economic research, there have been very few studies which have directly and comprehensive addressed the issue of the way in which the overall organizational performance should be measured.

Dess and Robinson (1984) investigated the subjective indicators use in relation to objective indicators of performance measurement. A result of the research by Dess and Robinson (1984) refers to the finding of several dimensions of the overall performance. Chakravarthy (1986) investigated the relationship between several combinations of performance indicators to demonstrate that the various indicators of financial performance, commonly used, not overtake the same attributes of performance (Cameron, 2010). Chakravarthy concluded that no single indicator that shows rentability is not able to distinguish between the two companies in terms of performance, whether indicators are financial or based on the market (Landy et al, 2017). Venkatraman and Ramanujam (1987) investigated the empirical methods for measuring organizational performance and showed that increasing sales, increasing profits and rentability are relevant indicators that illustrate various dimensions of organizational performance. These indicators are different dimensions of performance, none of the three indicators do not measure individually the overall business performance (Venkatraman and Ramanujam, 2017).

Recognizing the limitations of individual indicators as performance indicators led to the construction of multi-dimensional systems for measuring organizational performance. Linking financial information that can be extracted from the organization's reporting with non-financial indicators is a rather old issue of organizational research. Johnson and Kaplan (1987) argue that,

although they are based on accurate data, financial information are not really objective, as these are subject to different accounting treatments to meet various purposes of managers (Johnson & Kaplan, 1987).

Brush and Vanderwerf (1992) conducted an analytical research on thirty-four different studies which have used explicitly organizational performance as the dependent variable. Following this research they found that each study used different combinations of indicators expressing performance and that there was no agreement on the most relevant indicators on organizational performance. Multiple objective measurements were more commonly used than were used subjective measures of organizational performance (Hubbard, 2014).

Another approach to the measurement of the organizational performance is the combination of seemingly disparate indicators in a multi-dimensional weighted performance measurement system (Martell and Carroll, 1995). Elements of system not necessarily correlate with each other. In fact, indicators selected are chosen because they are different dimensions of performance.

Given the need to integrate stakeholder interests and specific purpose of the organization we believe that for measuring organizational performance is necessary to develop a multi-dimensional system. Therefore, we examine mechanisms that are necessary to take into account various situations and organizational results. This will have to make a weighting schemes. This scheme will take into account the correlations established between the various dimensions of organizational performance.

### **3. Classification of indicators used to measure organizational performance**

To make a classification of indicators to measure organizational performance we started to performance defining as a multi-dimensional concept that are endorsed on three pillars: financial performance, operational performance and performance related stakeholders. For each of the three pillars of performance can be determined indicators to assess these dimensions of overall organizational performance. In the literature there are many classifications of measuring organizational performance indicators. Since there is no general agreement on the classification criteria we made a classification of categories of indicators based on general classifications of performance measures found in previous research in finance management, strategic management, management accounting and entrepreneurship (Henry, 2003, Carton, 2004, Wagner, 2008; Cameron, 2010; Merchant and Van der Stede, 2011; Hubbard, 2014; Venkatraman and Ramanujam, 2017; Hatry, 2017).

*Financial indicators* are those who rely on the financial information reported in the income statements, balance sheets and cash flow statements. Financial indicators can be detailed further in rentability indicators, growth indicators, liquidity ratios, cash flow indicators, leverage indicators and efficiency indicators.

*Operational indicators* include variables representing how the organization operates in the non-financial area. Measuring performance based on basic nonfinancial dimensions received attention over recent years, as many organizations have adopted approach of "Balanced Scorecard" (Kaplan, 1984; Kaplan and Norton, 1992). These variables include market share, changes in intangible assets such as patents or human resources, customer satisfaction and performance stakeholders. Most of the measures from this category require primary data, which can lead to problems of validity and comparability (Hubbard, 2014).

*Market value indicators* include rates or percentage growth incorporating market value of the organization. The calculation of these variables requires a market valuation for the company that is generally available only for listed companies.

Economic value creation indicators imply adjustment in the value of financial indicators to take into account the cost of capital and some external influences to financial reporting standards.

Typical measures include residual income, economic value added and cash flow return on investment (Merchant and Van der Stede, 2011).

There are advantages and disadvantages in using indicators from each categories. While each category addressed performance indicators from a unique perspective, not all organizations can be assessed all indicators. It is the duty of every researcher to select a set of measures that capture the essence of organizational performance, given the environmental circumstances.

#### **4. Development of a multi-dimensional model for measuring organizational performance**

The best indicators are those that capture different dimensions or characteristics of overall organizational performance construct. It is therefore necessary to build a multi-dimensional model to fully capture the concept of organizational performance. Marr (2006) distinguishes the following activities in the process of building and validation of a performance measurement multi-dimensional model:

- building a theoretical model,
- collecting the necessary data,
- data analysis and interpretation,
- retrieval and communication of results.

Based on this process we built a measuring organizational performance multi-dimensional model. Through this model, we intend to show that simultaneous overtaking of these multiple dimensions is more appropriate to draw conclusions about the effectiveness of management actions than considering separately each separate dimension of performance.

Our approach to achieve a multidimensional model involves the five steps:

- building a sample of companies;
- selecting organizational performance indicators that can be calculated from the available data;
- testing indicators to select the most relevant to be included in the multidimensional model (by calculating correlations between variables and the selection of which signal a significant correlation);
- building multi-dimensional model based on selected indicators;
- model testing and comparisons making with individual indicators used to measure the financial performance both within the same company and between companies.

Based on financial information that can be collected for companies listed on Bucharest Security Exchange we have selected organizational performance indicators which can be calculated based on these information. To estimate organizational performance indicators we used the following categories:

- rentability indicators,
- growth indicators,
- liquidity ratios,
- leverage indicators,
- efficiency indicators,
- operational indicators,
- market indicators,
- aggregate indicators.

The indicators and their calculation formulas are shown in Table 1.

**Table 1. Organizational performance indicators selected in research**

	Category	Indicator	The calculation formula
1.	Rentability indicators	The evolution of gross result (GR) (Income-expenses)	$[(GR \text{ of the current} / GR \text{ of the base period}) - 1] \times 100$
2.		The evolution of net result (NR)	$[(NR \text{ of the current} / NR \text{ of the base period}) - 1] \times 100$
3.		Return on assets (ROA)	Net profit x 100 / Total assets
4.		Return on equity (ROE)	Net profit x 100 / Equity
5.		Return on sales - (ROS)	Net profit x 100 / Turnover
6.		Return on investment (ROI)	Net profit x100 / (debt + equity)
7.	Growth indicators	Evolution of turnover (T)	$[(T \text{ of the current} / T \text{ of the base period}) - 1] \times 100$
8.		Evolution of the number of employees (NE)	$[(NE \text{ of the current} / NE \text{ of the base period}) - 1] \times 100$
9.		Evolution of the assets	$[(Assets \text{ of the current} / Assets \text{ of the base period}) - 1] \times 100$
10.	Liquidity indicators	Current liquidity ratio	Current assets / Current liabilities
11.		Quick liquidity ratio	$(Current \text{ Assets} - Inventories) / Current \text{ liabilities}$
12.		Immediate liquidity ratio	Cash / Current liabilities
13.	Leverage indicators	Debt-to-equity	Debt x 100 / equity
14.		Debt-to-assets	Debt x 100 / Total assets
15.	Efficiency indicators	Total asset turnover	Turnover / Total assets
16.		Working capital turnover	$Turnover / (Current \text{ Assets} - Current \text{ Liabilities})$
17.		Receivables turnover	Turnover / Receivables
18.	Operational indicators	Labor productivity	Turnover / Number of employees
19.		Net profit created by an employee	Net Profit / Number of employees
20.	Market value indicators	Adjusted Tobin Q (TQ)	Capitalization / Total assets
21.		Price earnings ratio (PER)	Capitalization / Net profit
22.		Price to sales	Capitalization / Sales
23.		Price to book value	Capitalization / Equity
24.	Aggregate indicators	Return aggregate index	$(ROA+ROE+ROS+ROI)/4$
25.		Aggregate index of market value	$(TQ+ P/S+P/BV)/3$

In our research, which aims to develop an organizational performance measuring multi-dimensional model, we assume that the indicators of rentability and market value indicators are those that correlate most and best illustrates the organizational performance (based on previous research results and our observations). In order to synthesize better this measurement we used in the model two aggregate indicators of organizational performance, calculated as the average of individual indicators: return aggregate index and aggregate index of market value. Later these two indicators can be aggregated in their turn in an index of overall performance of the organization.

## 5. Conclusions

In this paper we reviewed the opinions of different specialists through an exploratory research of literature on organizational performance. We found that there is no consensus on what organizational performance represent, but all specialists in the area agreed that the performance is a multidimensional concept. So far not had been developed and tested successfully yet a measuring organizational performance multidimensional model incorporating all the dimensions of performance identified in the existing research literature.

Each category of indicators has advantages and disadvantages and no individual category has not shown that can be used singularly to measure performance. Each indicator has individual strengths and weaknesses. In order to conduct an empirical research, beyond concerns on the information content of each individual indicator, some indicators can be eliminated by taking into account the lack of sufficient information to calculate them (such as when economic value added, return cash flow investment, etc.).

Based on literature research and deductive and inductive thinking in this paper we built a multi-dimensional model to capture fully the concept of organizational performance. The model allows analysis of individual indicators and create an index of overall performance of the organization, which can also be analyzed in conjunction with individual indicators. Another advantage of such an index from the fact that index allow comparability within the industry. In future research we intend to test the model within Romanian companies listed at Bucharest Security Exchange and to improve it based on the data which we collect and on the interpretation of the results.

## 6. Bibliography

- [1] **Bocean G.C.** 2011. *Project based organization – an integrated approach*, Management & Marketing, Vol. IX, Nr. 2, pp. 265-273.
- [2] **Brush C. G, Vanderwerf P. A.** 1992. A comparison of methods and sources for obtaining estimates of new venture performance. *Journal of Business Venturing*, 7, pp. 157-170.
- [3] **Cameron K.** 1986. Effectiveness as paradox: Consensus and conflict in conceptions of organizational effectiveness. *Management Science*, 32(5), pp. 539-553.
- [4] **Cameron K.** 2010. *Organizational Effectiveness*, Reprint edition, Edward Elgar Pub.
- [5] **Carton R.B.** 2004. Measuring organizational performance: an exploratory study. Unpublished Doctoral Dissertation, The University of Georgia, Athens, GA.
- [6] **Chakravarthy B. S.** 1986. Measuring strategic performance. *Strategic Management Journal*, 7, pp. 437-458.
- [7] **Dess G., Robinson Jr. R. B.** 1984. Measuring organizational performance in the absence of objective measures: The case of the privately-held firm and conglomerate business unit. *Strategic Management Journal*, 5(3), pp. 265-273.
- [8] **Gavrea C., Ilieș L., Stegorean, R.** 2011. Determinants of organizational performance: the case of

Romania. Management & Marketing Challenges for the Knowledge Society 6(2), pp. 285-300.

[9] **Georgopoulos B., Tannenbaum A.** 1957. A Study of Organizational Effectiveness. *American Sociological Review*, 22, pp. 534-40.

[10] **Hatry H.P.** 2017. *Performance Measurement: Getting Results. 2nd edition.* Rowman & Littlefield Publishers.

[11] **Henri J.-F.** 2004. Performance measurement and organizational effectiveness: bridging the gap. *Managerial Finance*, 30(6), pp. 93-123.

[12] **Hubbard D. W.** 2014. *How to Measure Anything: Finding the Value of Intangibles in Business.* 3rd Edition. Wiley.

[13] **Johnson H. T., Kaplan R. S.** 1987. *Relevance Lost: The Rise and Fall of Management Accounting.* Boston: Harvard Business School Press.

[14] **Kaplan R.** 1984. Yesterday's accounting undermines production. *Harvard Business Review*, July/August, pp. 95-101.

[15] **Kaplan R. S., Norton D. P.** 1992. The balanced scorecard - Measures that drive performance. *Harvard Business Review*, Jan-Feb, pp. 71-79.

[16] **Landy F.; Zedeck, S; Cleveland, J.** 2017. *Performance Measurement and Theory.* Routledge Library Editions.

[17] **Lusthaus C., Adrien M.-H.** 1998. Organizational assessment: A review of experience. *Universalia Occasional Paper*, No. 31, October 1998.

[18] **Marr B.** 2006. *Strategic Performance Management. Leveraging and measuring your intangible value drivers.* Oxford, Elsevier, 2006.

[19] **Martell K., Carroll S. J.** 1995. How strategic is HRM? *Human Resource Management*, 34(2), 253-267.

[20] **Merchant K. A., Simons R.** 1986. Research and control in complex organizations: an overview. *Journal of Accounting Literature*, 5, pp. 183-203.

[21] **Merchant K. A., Van der Stede W.** 2011. *Management Control Systems: Performance Measurement, Evaluation and Incentives.* 3rd Edition. Financial Times Prentice Hall.

[22] **Murphy G. B., Trailer J. W., Hill R. C.** 1996. Measuring performance in entrepreneurship research. *Journal of Business Research*, 36, pp. 15-23.

[23] **Robinson K. C.** 1998. An Examination of the Influence of Industry Structure on Eight Alternative Measures of New Venture Performance for High Potential Independent New Ventures. *Journal of Business Venturing*, 14, pp. 165-187.

[24] **Sitnikov C.S., Bocean C.G.** 2013. *Relationships among social and environmental responsibility and business,* Amfiteatru Economic, Nr. 7s, Vol. XV, pp. 759-768.

[25] **Venkatraman N., Ramanujam V.** 1987. Measurement of business economic performance: An examination of method convergence. *Journal of Management*, 13(1), pp. 109-122.

[26] **Venkatraman N.; Ramanujam, V.** 2017. *Excellence, Planning and Performance.* Leopold Classic Library.

[27] **Wagner J.** 2008. Measuring Performance – Conceptual Framework Questions, *European Financial and Accounting Journal*, 3(3), pp. 23-43.

[28] **Yuchtman E., Seashore S.** 1967. Factorial Analysis of Organizational Performance. *Administrative Science Quarterly*, 12(3), pp. 377-395.