The Use of Financial and Non-Financial Performance Measures: A Contingency Perspective

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Abstract
Financial and non-financial index and indicators are applied in industry for measure firms' business and operational performance. Different mix of measures are usually implemented in practice and we argue that, to a certain extent, this variability can be explained according to some contextual factors, as for instance environmental uncertainty, decentralization, type of strategic organizations and managerial practices. We develop hypothesis on the association between the usage of certain performance measures and this factors in a contingency perspective. Exploratory research based on large scale survey on manufacturing firms supports our investigation and test of the research hypothesis. Reliability and validity of the survey instrument are verified and factor analysis is used for categorizing many performance measures in financial- and non-financial-based constructs. Multiple regression analysis is used to verify the relationships between the intensity of use of the performance measures and the contextual factors under study. We also look at performances from two different perspectives, the actual performance and the perceived performance, in order to see, in case it occurs, if and how there is a gap between the two and we eventually make initial attempts to explain this gap.

Key Words: Performance Measurement System, Metrics, Contingency Theory, Actual Performance, Perceived Performance

1. Introduction

What you measure is what you get (Kaplan & Norton, 1992). Firms use metrics for a variety of laudable purposes. Metrics such as market share, sales increases, margins, and customer satisfaction surveys enable firms to take stock of where they are and to plan for the future. Metrics such as projected revenue, contingent sales forecasts, the net present value of an investment, and the option value of an R&D program provide indicators of future performance. Managers use these metrics to allocate assets and select strategies. Metrics such as an R&D effectiveness index, reductions in the operating cost of a telephone service center, and reduced absenteeism provide the basis for bonuses and promotions for managers and their employees. Every metric, whether it is used explicitly to influence behavior, to evaluate future strategies, or simply to take stock, will affect actions and decisions, choosing the right one is critical to success (Hauser, 1978).

Organizations achieve their goals by satisfying their customers with greater efficiency and effectiveness than their competitors. Effectiveness refers to the extent to which customer requirements are met, while efficiency is a measure of how economically the firm's resources are utilized when providing a given level of customer satisfaction. This is an important point because it not only identifies two fundamental dimensions of performance, but also highlights the fact that there can be internal as well as external reasons for pursuing specific courses of action (Neely, Gregory, & Platts, 1995). Hence the level of performance a business attains is a function of the efficiency and effectiveness of the actions it undertakes, and thus: performance measurement can be defined as the process of quantifying the efficiency and effectiveness of action; a performance measure can be defined as a metric used to quantify the efficiency and/or effectiveness of an action; a performance measurement system can be defined as the set of metrics used to quantify both the efficiency and effectiveness of actions (Neely et al., 1995).

Most studies that have examined the relationship between financial and nonfinancial performance measures have shown mixed results (Amir & Lev, 1996; R. D. Banker et al., 1996; Ittner & Larcker, 1998) The mixed results suggest that these relationships may be contextual (Kaplan and Norton 1992; Ittner and Larcker 1998b), which makes it important to understand the factors that moderate these relationships before using them in managerial decision making and incorporating them in management control systems (R. Banker & Mashruwala, 2007). With a customized system in place to measure performance, an organization can readily gauge and continuously fine-tune its market strategy (Slater, Olson, & Reddy, 1997).

Metrics provide essential links between strategy, execution, and ultimate value creation. Changing competitive dynamics are placing heavy demands on conventional metrics systems, and creating stresses throughout firms and their supply chains. Research has not kept pace with these new demands in an environment where it is no longer sufficient to simply let metrics evolve over time—we must learn how to proactively design and manage them (Melnyk, Stewart, & Swink, 2004).

The information processing theory identifies three important concepts: information processing needs, information processing capability, and the fit between the two to obtain optimal performance. Organizations need quality information to cope with environmental uncertainty and improve their decision making. Environmental uncertainty stems from the complexity of the environment and dynamism, or the frequency of changes to various environmental variables.
It is often difficult to link specific operational practices to strategic level outcomes and in turn to corporate financial results. This presents problems for both managers and academic researchers attempting to justify the often high cost of operational improvement initiatives in terms of objective accounting metrics (Bendoly, Rosenzweig, & Stratman, 2007). Bendoly et al. (2007) provide evidence that it is possible to demonstrate linkages between carefully chosen portfolios of tactical, strategic, and financial metrics.

Two different research areas are here involved in the scope of this paper: accounting and operations management. The contingency-based management accounting literature has been criticized for being fragmentary and contradictory as a result of methodological limitations (Gerdin & Greve, 2008). In the OM literature instead the contingency theory is a well-established research stream (Benson, Saraph, & Schroeder, 1991; Zhang, Linderman, & Schroeder, 2012). The 'one size fit all' approach is replaced by the idea the

moderating or mediating role of different contextual factors. The concepts of internal and external fit relate often to the success/failure of management practices. In the context of Total Quality Management for instance Zatzick et al. (2012) explore how fit with the organization's strategic orientation relates to performance. Conceptualizing the organization as a system of interrelated activities, they propose that TQM is an 'elaborating element' that achieves internal fit when the core elements of the activity system are orientated toward a 'cost leadership' rather than 'differentiation' strategic position. Their hypothesis is that when internal fit occurs, TQM drives tighter interactions among core elements in the activity system, resulting in greater performance. Competitive advantage is more likely to be sustainable if it arises from activities that have more than one optimal configuration, i.e., from strategy-specific activities (Porter & Siggelkow, 1993).

The design of an effective performance measurement system, which includes the selection of appropriate measures and approaches for analyzing results, is central to aligning an organization's operations with its strategic direction (Evans, 2004).

2. Theory building

Our exploratory study aims to investigate in the maze of measures and different performance measures portfolios in order to address our research questions. We aim to answer some of these questions or at least enlighten our understanding and stimulate more rigorous research for our future work and other researchers' interests. Some of our general research questions are:

- How do firms decide what measures include in their performance measures portfolio?
- How do they balance the use of financial and non-financial measures?
- Do firms choose coherent mix of performance measures based on their overall business strategy?
- How much the alignment of performance measures portfolio and business strategy affects business results?
- Do environmental uncertainty (type of competition) and decentralization (type of organizational structure) play a role in this scenario?
- Is there any effect of the performance measurement system complexity on the perception of performance and eventually on a gap between actual and perceived performance?

We argue that context matters, and we define context through both internal and external factors. We will shortly introduce our independent variables, but to start looking at the relationships between all these variables we should now specify that with internal contextual factors we mean strategy and organizational structure, with external contextual factors we mean competitiveness and dynamism. By this we do not intend to say that those are the only factors that matter, we are conscious that our research at this stage is very exploratory and will need further development at later stages.
Figure 1 represents the simplified model that we hypothesize represents the relationships between context, performance measurement system and resulting performance.

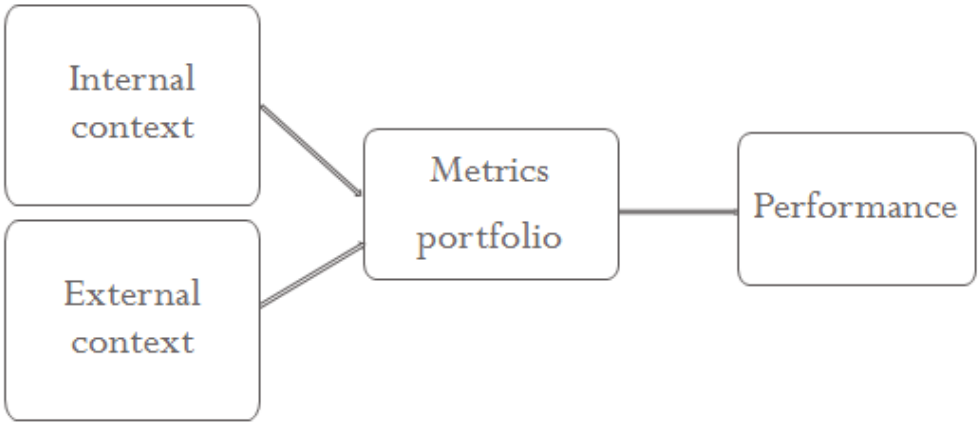

Figure 1: Model representing hypothesized relations between context-performance measurement system and performance

We further specify in Figure 2 in our variables and also we split performances in actual and perceived, highlighting what we are interested to investigate, which is the eventual gap between the two.

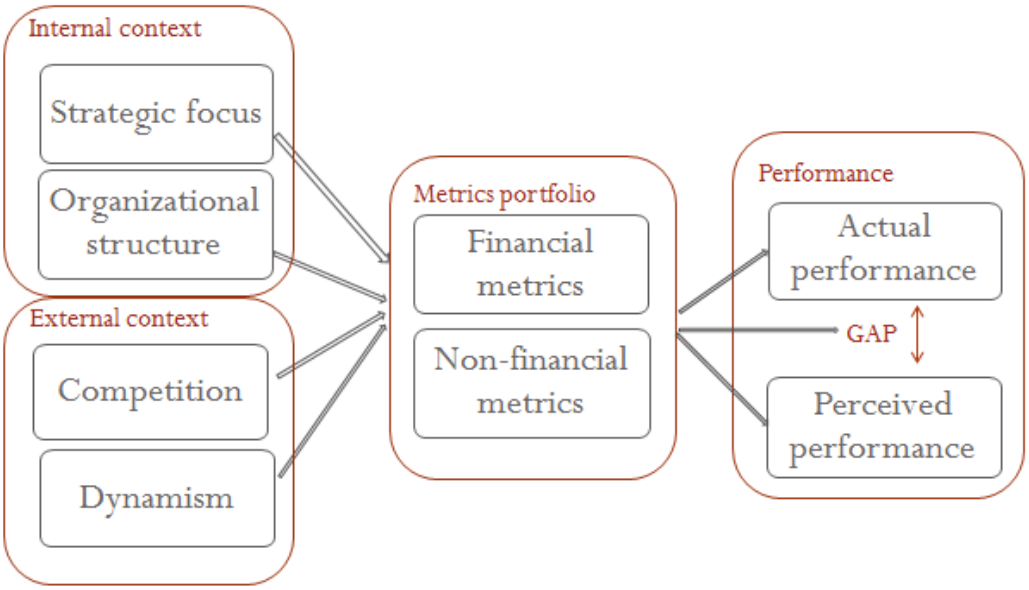

Figure 2: Detailed model

We hypothesize certain relationships between contextual factors and different mix of metrics included in the performance measurement systems, as the alignment of the metrics to the contextual factors, or rather the diversity approach with a wide variety of metrics, or even just a focus on typical financial metrics.

We investigate the map portfolios/contextual factors for the following factors: strategy, organizational structure, and environment.

Our hypothesized relationships are summarized here and discussed later in the paper.
Hypothesis:
H1a: Cost leadership strategy is correlated with portfolios based on quality/efficiency measures
H1b: Differentiator strategy is correlated with portfolios based on customer/innovation measures
H1c: Mixed strategy is correlated with either diversified portfolios or based only financial measures.
H2: High structured organizations are positively correlated with diversified portfolios.
H3a: In an environment where dynamism is high and price competition is high firms use diversified portfolios including all kind of measures
H3b: In an environment where dynamism is high and price competition is low firms use portfolios based on customer/innovation measures.
H3c: In an environment where dynamism is low and price competition is high firms use portfolios based on quality/efficiency measures
H3d: In an environment where dynamism is low and price competition is low firms use only financial measures

3. Methodology

This study builds on a previous research study carried out in 2006. This research has collected a database on the use of financial and non-financial measures through a questionnaire based survey.
The observed sample consists of Italian manufacturing companies (ATECO codes 15-37, letter D "manufacturing activity") selected from the 2001 Italian Chamber of Commerce excel database and Business Magazine "Il Sole 24 – Pirelli (2004)" ranking the top 4.000 Italian firms. A final sample of 1.048 manufacturing firms was selected for the research project comprising all those firms that had more than 250 employees at the time of data collection. Among this group of firms, one of the authors contacted the firms' management directly in order to select a list of companies willing to participate to the research. The survey was conducted sending a questionnaire by fax and e-mail during the second half of the year 2006. After three follow ups by e-mail and phone calls to non-respondents, in order to increase response rate, 229 questionnaires (220 usable) returned completed. The final response rate of about 21% represents an acceptable target when the questionnaire involves top and middle management (Chief Executive Officer, Chief Financial Officer and Controller).
The questionnaire was developed and refined as follows: nearly all items in the performance measures and environment uncertainty were adapted from previously published works. A preliminary draft of the questionnaire was discussed with academic scholars to assess the content validity prior to pilot testing; and a pilot test was conducted with a group of five firms, whose inputs were used to improve the clarity, comprehensiveness and relevance of the survey instrument.
Specifically the questionnaire was structured in two parts. In the first part organizations were asked to indicate on a seven point Likert scale – from 1 (not at all), through 4 (moderately), up to 7 (extensively) – the extent to which they used a set of 42 performance measures coming from academic/practitioner management accounting literature. (Maskell, 1989a; Keegan et al 1989; Kaplan 1990; Fisher 1992; Cima, 1993; Bhimani, 1993; White 1996; White 1996; Kaplan & Norton 1996, 2000; Gosselin 2005).

The second part listed some contingency factors such as environmental uncertainty, decentralization, strategic type of organizations and some innovative management accounting techniques.

We selected a subset of all available metrics in the survey in order to identify common underlying factors to group those metrics. We refer partly to Slater et al. (1997) for identifying the different measures. We factor analyzed the 15 performance metrics in Table 1.

Table 1: Performance metrics

Customer Satisfaction Index
Time from order to delivery
Time for replying to customer
Number of lost customer
Defects rate
Tonnage of Waste
Scrap produced
Inventory turnover ratio
Cost per unit
Rate of introduction of new products
Time to develop new products
Sales
ROS
ROI
Net cash flow

Table 2 shows the results of the factor analysis performed on the above measures, three factors explain more than 50% of the variance and have eigenvalue greater than 1.

In order to assess construct validity and reliability we compared our grouping of measures with what found in literature, we checked the Cronbach's alpha of the three groups of items (respectively: 0.81, 0.86, 0.76) and we verified high correlation between the rotated components identified by the above factor analysis and three new variables constructed with group's mean. All group means strongly correlate with one of the identified factors, so we decided to use these new mean variables for further analysis.

Table 2: Factor analysis on performance metrics

Factor Analysis: Maximum Likelihood / Varimax
Eigenvalues of the Reduced Correlation Matrix

Number	*Eigenvalue*	*Percent*	*Cum Percent*
1	***4.3694***	*57.005*	*57.005*
2	***1.7056***	*22.252*	*79.258*
3	***1.5390***	*20.079*	*99.336*

Variance Explained by Each Factor

Factor	*Variance*	*Percent*	*Cum Percent*
Factor 1	*2.8561*	*19.040*	*19.040*
Factor 2	*2.7140*	*18.094*	*37.134*
Factor 3	*2.0744*	*13.829*	*50.964*

Rotated Factor Loading

	Factor 1	*Factor 2*	*Factor 3*
customer satisfaction index	*0.1047622*	***0.6075849***	*0.0712120*
time from order to delivery	*0.2144700*	***0.7321754***	*0.0316743*
time for replying to customer	*0.0143583*	***0.8467156***	*0.1034597*
num customer lost	*0.0963540*	***0.5595540***	*0.1245477*
defects rate	***0.7196895***	*0.2679774*	*0.1168993*
ton of waste	***0.9487095***	*0.1314911*	*0.0894982*
scrap produced	***0.9166825***	*0.1222457*	*0.0465451*
inventory turnover ratio	***0.4758414***	*0.1155576*	*0.2330050*
cost per unit	***0.4054682***	*0.1158289*	*0.1915131*
rate of introduction of new products	*0.1493036*	***0.4869927***	*0.0397640*
time develop new products	*0.1373456*	***0.5818359***	*0.1580933*
Sales	*0.2128576*	*0.0096516*	***0.4802790***
ROS	*0.0492833*	*0.0952192*	***0.7744184***
ROI	*0.0688732*	*0.1529479*	***0.8793343***
net cash flow	*0.2164111*	*0.1992877*	***0.5450889***

Based on the observation that almost all firms pay very much attention to financial measure (median of this group is 6.25 on a 1 to 7 Likert scale) we conjecture that factor 3 (or financial measures) does not significantly discriminate firms in our cluster.
Looking at the metrics included in each group we can identify the other two new factors as:

- factor 1: quality/conformance/internal process metrics
- factor 2: innovation/customer satisfaction metrics

This grouping of measures is based on the results of the factor analysis, but it also finds construct validity. The first factor in fact groups all internal conformance measures, measures of efficiency and costs, those should be the focus of a cost leader strategy. The second factor groups measures related to R&D and customer relationship, which should be the focus of a differentiator strategy (according to Porter classification). The third factor groups all financial and commonly used performance measures, which, not only are very much used by all kind of firms, regardless the concept of the balance scorecard and non-financial measures, but also, they are important regardless the strategic focus.

As independent variables representing the contextual factors we use strategy and organizational structure for the internal context and competition and dynamism for the external context (as environmental uncertainty).

Strategy in measured through an anchored 7 points scale where 1 represents a cost leader strategy and 7 a differentiator strategy (Porter, 1985). All points in the middle are mixed strategies more inclined toward cost leadership or differentiation. We can hypothesize that a cost leader is more focused on efficiency metrics, which are cost related and focused on defects and waste. A differentiator instead is assumed to be focused on innovation and customer relationships, so on responsiveness metrics. Different approach could characterize a mixed strategy, either a diverse mix of all kind of metrics that accounts for the different strategy objectives, or an only-financial approach. Figure 3 simply schemes these hypothesized relationships.

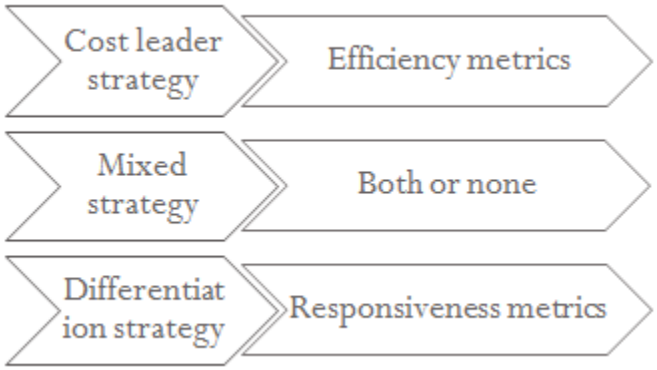

Figure 3: Hypothesized relationships between strategy and metrics

We measure the level of decentralization of the organizational structure through three items that we then, after reliability check, combine them in one measure. In respect to this variable we hypothesize that the more structured is the organization, the more levels of hierarchy, the more metrics are used.

Environmental uncertainty is another contextual factor that might impact the choice of which measures include in the performance measures portfolio. We account for two dimensions of environmental uncertainty: competition and dynamism.

Generally speaking, competition is likely to accentuate the use of controls. The greater the competition, the greater the need to control costs, and to evaluate whether production, finance, marketing etc. are operating according to expectations (Khandwalla, 1972). We use here the intensity of prince competition measured with a perceptual Likert scale in our reference survey.

We refer to Azadegan et al (appearing in Journal of Operations Management) for the definition and measure of environmental dynamism as the degree of instability in a firm's environment. Azadegan et al. use a measure proposed by Dess and Beard (1984) (referred also in Miller, Ogilvie & Glick, 2006). In particular, Pagell and Krause (2004) measure environmental dynamism in the operations management context by regressing five year sales (dependent variable) on time (independent variable). Increased variation in sales

increase volatility and uncertainty in demand and make it "more difficult to plan production" (Pagell and Krause, 2004; page 646). We use this approach extracting the sales information of firms on database at the four-digit NICE code level between the years 2002 and 2006. Next, the natural log of sales for each of the five years is regressed on time (from 2002 to 2006). Dynamism is then measured based on the average of the anti-log of standard errors. A higher standard error indicates greater instability or sales uncertainty (Azadegan et al, 2013).

Combining these two environmental variables we identify four configurations of environment with respectively high or low dynamism and high or low competition. Then we hypothesize what kind of metrics may be the main focus of companies in such environments. These initial insights we are trying to attempt in this paper are being also further investigated in another one in progress. Figure 4 graphically represents our hypothesis in the four quadrants of competition and dynamism.

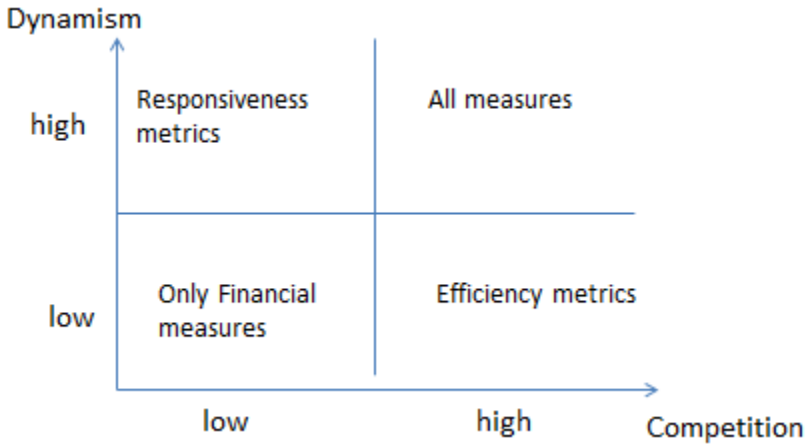

Figure 4: Hypothesized relationships between environment and metrics

4. Results

In this research we analyzed our data with several different perspectives and methods. In this paper we briefly describe some initial insights, we are currently further investigating and refining our understanding of our object of interest, which is the way firms develop a performance measurement system, how they use it and if the way they do it is successful or not.

In this section we want to show some results that we consider potentially interesting also from a behavioral operations standpoint.

In our survey instrument we measured perceived performances in terms of financial indexes or indicators as ROI, Cash flow, Turnover and some others using a 5 points scale where 3 represents a performance on average with the belonging industry, 1 and 2 are score for performances below average, 4 and 5 above average.

In order to have also a measure of the actual performance of those firms in our sample one of the authors collected a database of secondary data with all information regarding sales, ROI, ROE, Cash Flow, Turnover and many other financial metrics for each company and covering a time frame from 2003 (three years before the survey) to 2009

(three years after the survey). Using this data we computed a measure of actual performance in terms of relative performance compared to the industry average (grouping the companies according to the first two digits of the industry code).
After standardizing both actual and perceived performance, we computed the eventual gap between the two, as the difference between perceived performance and actual. Figure 5 is a screenshot of descriptive statistics of gaps on ROI, Cash flow and Turnover.

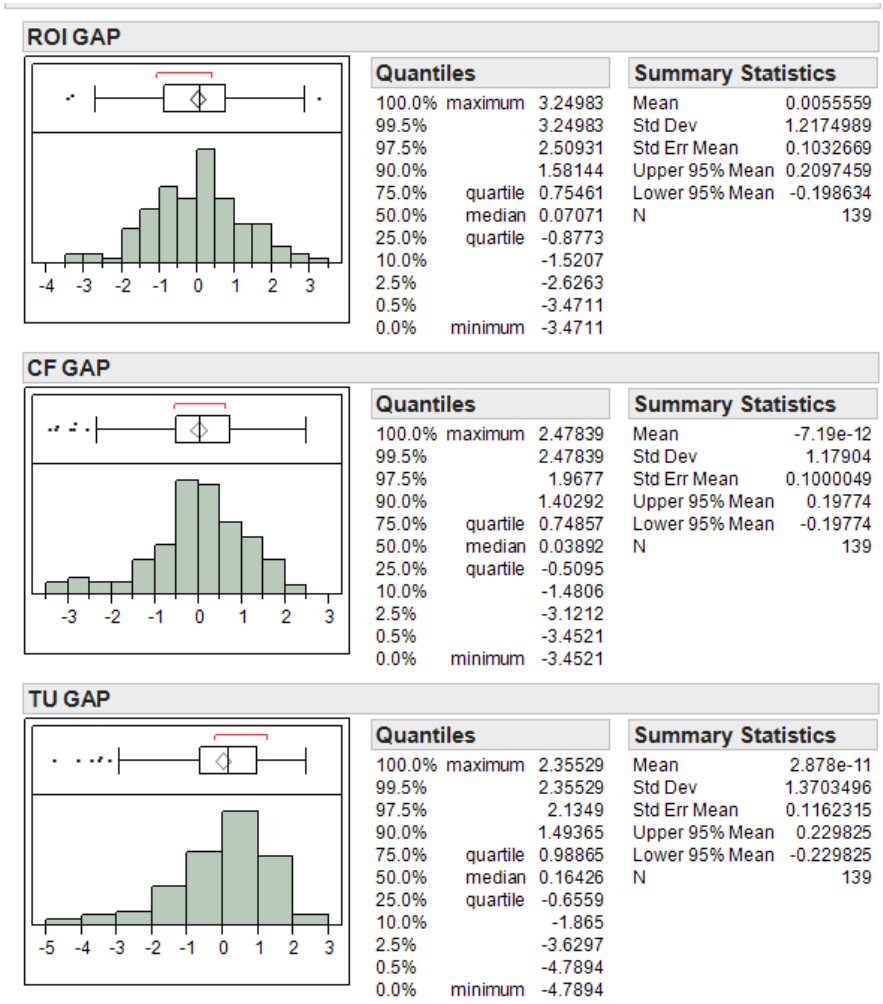

Figure 5: Screenshot of histogram and descriptive statistics for GAP in ROI, Cash Flow and Turnover

We then attempted to better understand what factors influence the firm's performance, if and how the contextual factors matter, and if and how they moderate the role of the performance measurement system. We run multiple regressions (preceded by stepwise regressions) for all performance measures we choose to analyze (ROI, Cash Flow and Turnover) in both the variables representing the actual performances and the perceived performance. Moreover we did the same analysis for the gap measured on all these three actual measures with the corresponding perceived measures. If there is a gap between the two and depending on the sign of this gap, managers are underestimating or overestimating their firms' performance. We argue, but we are still in early stages of our research to state it, that there can be a behavioral component that lead to misleading

judgments of the firm's performance when a very large and diverse measurement system is in place.
We report next our results from the above mentioned regressions. Further analysis and a deeper understanding of the phenomenon are currently under our investigation.

Table 3: Multiple Regression results for ROI: actual, perceptual and gap. Only main effects and significant two-factor interactions are reported here. All factors and two-factor interactions were included in a stepwise regression.

Factors	***ROI***					
	Actual		*Perceptual*		*GAP*	
	coeff	*p-value*	*coeff*	*p-value*	*coeff*	*p-value*
Intercept	*-0.707*	*0.546*	*-2.215*	*0.049*	*-1.509*	*0.317*
Size	*0.001*	*0.996*	*0.112*	*0.477*	*0.111*	*0.601*
Efficiency metrics	***0.111***	***0.108***	*0.019*	*0.774*	*-0.092*	*0.298*
Responsiveness metrics	*0.039*	*0.459*	*0.041*	*0.426*	*0.001*	*0.988*
Financial metrics	*-0.134*	*0.161*	*0.147*	*0.107*	***0.281***	***0.024***
Strategy	*0.077*	*0.355*	*0.075*	*0.339*	*-0.001*	*0.991*
Org Structure	***0.210***	***0.061***	***0.213***	***0.046***	*0.003*	*0.982*
Price Competition	*-0.031*	*0.681*	***-0.118***	***0.100***	*-0.088*	*0.366*
Dynamism	*-0.072*	*0.620*	*0.033*	*0.814*	*0.105*	*0.576*
*Financial*Size*	***-0.449***	***0.017***	*-0.025*	*0.889*	***0.424***	***0.079***

Table 4: Multiple Regression results for Cash Flow: actual, perceptual and gap. Only main effects and significant two-factor interactions are reported here. All factors and two-factor interactions were included in a stepwise regression.

Factors	***Cash flow***					
	Actual		*Perceptual*		*GAP*	
	coeff	*p-value*	*coeff*	*p-value*	*coeff*	*p-value*
Intercept	*-3.314*	*0.001*	*-2.204*	*0.043*	*1.110*	*0.401*
Size	***0.572***	***0.000***	*0.212*	*0.166*	*-0.360*	*0.056*
Efficiency metrics	*-0.060*	*0.313*	*0.054*	*0.393*	*0.114*	*0.144*
Responsiveness metrics	*0.044*	*0.335*	***0.079***	***0.109***	*0.035*	*0.564*
Financial metrics	*0.057*	*0.491*	*-0.057*	*0.518*	*-0.113*	*0.293*
Strategy	*-0.056*	*0.437*	*0.090*	*0.237*	*0.146*	*0.120*
Org Structure	*0.143*	*0.139*	***0.225***	***0.029***	*0.083*	*0.509*
Price Competition	*-0.103*	*0.113*	***-0.115***	***0.097***	*-0.012*	*0.886*
Dynamism	*-0.029*	*0.820*	*0.040*	*0.766*	*0.069*	*0.677*
*Efficiency*Responsiveness*	***0.056***	***0.078***	*0.002*	*0.961*	*-0.054*	*0.190*
*Efficiency*FIN*	*-0.098*	*0.112*	*0.062*	*0.347*	***0.159***	***0.049***
*Efficiency *Strategy*	*0.035*	*0.496*	***-0.104***	***0.062***	***-0.139***	***0.042***
*Efficiency *Competition*	*-0.003*	*0.950*	***-0.088***	***0.044***	*-0.086*	*0.110*

*Efficiency *Size*	*0.058*	*0.484*	***0.211***	***0.019***	*0.153*	*0.163*
*Responsiveness*Strategy*	*0.015*	*0.666*	***0.068***	***0.075***	*0.053*	*0.258*
*Responsiv*Competition*	***-0.088***	***0.015***	*0.012*	*0.746*	***0.101***	***0.034***
Financial Org Structure*	*0.071*	*0.411*	***-0.209***	***0.024***	***-0.280***	***0.014***
*Financial*Size*	***-0.293***	***0.069***	*-0.128*	*0.455*	*0.165*	*0.430*
*Strategy *Dynamism*	*-0.097*	*0.216*	***0.171***	***0.042***	***0.268***	***0.010***
*Org Struct*Competition*	***-0.138***	***0.034***	*0.103*	*0.135*	***0.241***	***0.005***
*Size*Dynamism*	*0.142*	*0.382*	*-0.243*	*0.163*	***-0.385***	***0.072***

Table 5: Multiple Regression results for Turnover: actual, perceptual and gap. Only main effects and significant two-factor interactions are reported here. All factors and two-factor interactions were included in a stepwise regression.

Factors	***Turnover***					
	Actual		*Perceptual*		*GAP*	
	coeff	*p-value*	*coeff*	*p-value*	*coeff*	*p-value*
Intercept	*-4.258*	*<.0001*	*-3.426*	*0.003*	*0.832*	*0.603*
Size	***0.646***	***<.0001***	***0.291***	***0.067***	*-0.354*	*0.120*
Efficiency metrics	*-0.046*	*0.444*	*0.061*	*0.355*	*0.107*	*0.258*
Responsiveness metrics	*0.006*	*0.896*	*0.007*	*0.883*	*0.001*	*0.985*
Financial metrics	*-0.052*	*0.532*	*0.108*	*0.236*	*0.160*	*0.222*
Strategy	*0.128*	*0.077*	*0.071*	*0.371*	*-0.057*	*0.612*
Org Structure	*-0.035*	*0.719*	*0.152*	*0.155*	*0.186*	*0.222*
Price Competition	*0.017*	*0.790*	*-0.047*	*0.514*	*-0.064*	*0.532*
Dynamism	*0.094*	*0.458*	*0.061*	*0.663*	*-0.034*	*0.867*
*Efficiency*Responsiv*	***0.095***	***0.004***	*0.015*	*0.671*	*-0.080*	*0.113*
*Efficiency *Size*	***0.145***	***0.087***	*-0.024*	*0.796*	*-0.169*	*0.203*
*Responsiv*Competition*	***-0.066***	***0.070***	*-0.025*	*0.527*	*0.041*	*0.471*
*Responsiv*Size*	*-0.074*	*0.204*	*0.102*	*0.111*	***0.175***	***0.056***
*Financial *Size*	***-0.459***	***0.005***	*-0.029*	*0.869*	***0.429***	***0.093***
*Strategy*Dynamism*	***-0.139***	***0.081***	***0.149***	***0.088***	***0.288***	***0.022***
*Competition*Dynamism*	***-0.158***	***0.098***	*-0.065*	*0.532*	*0.093*	*0.534*

5. Discussion and Conclusions

This exploratory study has been designed to test some specific contingency relationships between factors such as strategy, organizational structure, competitiveness and dynamism, with how firms design and use their performance measurement systems. In turn these choices and these factors all together have an impact on performances themselves.

We looked at actual performances through the support of secondary financial data, but also we attempt to start initial investigation on the perceptions of managers dealing with the huge mass of diversified metrics, indexes and indicators.
The main purpose of this paper was to collect some empirical evidence on the level of a set of performance measurements implemented in manufacturing companies. Firms increase the use of nonfinancial metrics in their performance measurement systems, even though financial measures have still much more attention from managers.

In the adoption of nonfinancial metrics the alignment or diversity approach are sometimes moderated by contextual factors and they can ultimately influence the actual performance. Interestingly it appears to be an impact of the use of metrics, depending on the context, on the perceptions of those performances. In many cases a gap between reality and perception is observed, and it could be, at least partially, attributed to these factors and their interaction.

Anyway this research is limited in many aspects and still at early exploratory stages. Some results and insights gained so far have stimulated a deeper interest in a more rigorous investigation of the phenomenon under study and they will guide our next steps in conducting this research.

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