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# Examining a *positive* psychological role for performance measures

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ABSTRACT

Emerging evidence suggests that performance measurement systems may generate positive psychological effects, leading to higher levels of managerial performance. We extend this literature by examining the extent to which diagnostic vis-à-vis interactive utilisation of performance measures may be associated with decreasing role ambiguity and increasing psychological empowerment with positive consequences for performance. We find that the interactive utilisation of non-financial performance measures can be particularly important for generating a positive psychological experience and (indirectly) increasing performance. Our study contributes further evidence of the psychologically beneficial role played by management control systems.



## 1. Introduction

Following a strong tradition of research which aims to explain and thereby to avoid the possible dysfunctional effects of the use of financial measures (for reviews see Birnberg et al., 1983; Chenhall, 2003; Hartmann, 2000; Johnson and Kaplan, 1987), contemporary research into the consequences of performance measures stresses beneficial impacts, particularly where performance indicators are strategically aligned, comprehensive, and are designed, developed and used appropriately (Franco-Santos et al., 2012; Grafton et al., 2010; Hall, 2008; Kaplan, 2010; Kaplan and Norton, 2006; Simons, 1995). Two types of positive organisational outcome have received particular attention in recent years: strategic impacts based either upon planned strategy or the resource based view of the firm (Bisbe and Malagueño, 2012; Grafton et al., 2010; Henri, 2006; Kaplan and Norton, 2008); and psychological impacts represented by role ambiguity (RA) and psychological empowerment (PE) (Hall, 2008; Marginson and Ogden, 2005; Ogden et al., 2006). Positive outcomes of a strategic or psychological nature are important because they mediate the relationship between performance measures and organisational or managerial performance (Burney and Widener, 2007; Grafton et al., 2010; Hall, 2008; Shields et al., 2000; Widener, 2007).

We focus the present study on the psychological impacts of performance measures. Specifically, we examine the psychological consequences of diagnostic vis-à-vis interactive use of financial and non-financial performance measures (Simons, 1995, 2005). In so doing, we build upon the literature which argues that the impacts of performance measurement systems depends centrally upon the ways in which measures are utilised (for reviews see Ferreira and Otley, 2009; Franco-Santos et al., 2012; van Veen-Dirks, 2010). Extant research into the psychological impact of performance measures has considered the role of financial measures (Marginson and Ogden, 2005),

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and more broadly, 'comprehensive performance measures' incorporating non-financial indicators (Hall, 2008), on RA and PE. Hall (2008:144), for instance, argues that the positive psychological effects of comprehensive performance measures results from "richer and more complete feedback about operations and results". At the same time, this body of literature offers little insight into the question as to whether, and if so, to what extent it is the *use* to which performance measures are put, rather than simply the range available (comprehensiveness), which helps to explain the effect on managers' psychological state. We examine for the possibility that different uses of performance measures (diagnostic versus interactive) may create different, and potentially opposing psychological consequences (Henri, 2006; Simons, 1995). We focus on diagnostic and interactive utilisation, given it is increasingly recognised that these ways of using performance measures[1] provide an important framework for understanding the consequences of performance measurement (Franco-Santos et al., 2012; Henri, 2006; Widener, 2007).

We find that performance measures have beneficial effects upon RA when they are used diagnostically. We find no such beneficial effects for diagnostic use in relation to PE. However, we find that interactive use of non-financial measures is significantly associated, not only with reduced RA, but also with increased PE (across three out of the four dimensions of PE; $p$-value < 0.05). Our results progress research by Hall (2008) in highlighting that it is necessary to not only incorporate appropriate types and range of measures into the design of comprehensive performance measurement systems but also to consider the ways in which measures within such systems are *used*.

We organise the paper as follows. The next section presents the literature review and develops the study's hypotheses. In subsequent sections, we describe the research methodology, present the empirical results, and discuss the implications and limitations of our study.

## 2. Literature review and hypothesis development

The development of our hypotheses is informed by goal theory. Whilst the literature in the related areas of performance measurement and management control is substantial, psychology in general, and goal theory in particular, has been suggested as a body of research of relevance and importance to theoretical elaboration and clarification within these fields (Chenhall, 2003; Franco-Santos et al., 2012; Hartmann, 2000; Ittner et al., 2003). By providing a theoretical underpinning to our inquiry, we are able to explain differences in effects involving performance measures used diagnostically and interactively in a grounded fashion. This section begins by providing an outline of goal theory before presenting hypotheses.

### 2.1. Goal theory

Goal theory starts from the proposition that conscious goals impact action (Locke, 1996; Ryan, 1970). Conscious goals are intentions, purposes, desired ends or objects and include performance standards and targets (Locke, 1996). Goals can be either self-set or assigned (Bandura, 1986; Locke and Latham, 2002). They affect performance by directing attention, by supporting the appropriate selection of relevant strategies, knowledge and action, and by encouraging persistent efforts to overcome barriers to goal attainment (Bandura, 1986; Locke and Latham, 2002). Motivation to perform is given not only by the goals themselves but by the need to achieve a sense of personal satisfaction (Bandura, 1986; Locke and Latham, 2002). Goal theory thereby explains the importance of stretch goals, which are entailed in Kaplan and Norton's (2008) and Simons' (2005) models of performance management and control. The following relationships are suggested. Ceteris paribus, individuals with high self-efficacy (who perceive themselves to be competent and capable of achieving goals) will: (1) increase their efforts when faced with challenging goals; (2) experience temporary satisfaction when meeting goals, and will then set themselves more challenging goals to be mastered; and (3) when faced with achievements that fall moderately or just short of stretch targets, will have the self-belief that greater effort will enable them to match or surpass the required performance standard in due course (Bandura, 1986).

Performance measurement systems provide an efficacious source of information as regards goals for two reasons. Firstly, performance measures provide a systematic approach to the translation of strategy into measurable goals that can be communicated clearly (Bisbe and Malagueño, 2012; Bhimani and Langfield-Smith, 2007). Performance measures provide positive support for goal-setting because quantified goals are more effective in securing high performance than general entreaties to perform to high standards (Locke, 1996; Locke and Latham, 2002). Secondly, performance measures provide feedback information (Bandura, 1986; Burney and Widener, 2007; Locke and Latham, 2002). Feedback is necessary to enhance performance and this is particularly important where individuals have high levels of self-efficacy and when goals are challenging (Locke and Latham, 2002). In consequence of the provision of goal-setting and feedback information, performance measures perform a decision-influencing role through which individuals' and organisational goals are aligned (see Sprinkle, 2003).

### 2.2. RA and diagnostic vis-à-vis interactive utilisation of performance measures

RA is defined as uncertainty about actions required within a particular organisational position and entails ambiguity about: (1) goals and the scope of responsibility (goal clarity); (2) the behaviour necessary for goal attainment and the discharge of responsibility (process clarity);

[1] We use the phrases, "diagnostic/interactive use of performance measures" and diagnostic/interactive control" interchangeably. This is consistent with Simons' (1995, 2005) recognition that diagnostic and interactive controls entail the use of performance measures and Kaplan's (2010) acknowledgement that the use of the balanced scorecard was initially envisaged as a diagnostic control system, but came to be associated with interactive control once the balanced scorecard evolved into a strategic management system.