Full length article

If you come, will they build it? The impact of the design and use of a performance management system on researcher motivation

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ABSTRACT

This study constructs a framework describing the impact of the design and use of a performance management system (PMS) on researcher motivation. The analysis is based on an in-depth case study of a large European pharmaceutical company. The results reveal that in order to account for antecedents to researcher motivation, a PMS should distinguish between its design and use, as well as account for idiosyncrasies of research work. The study contributes to literature by a) emphasizing the need to consider both in PMS studies and practice and b) identifying PMS-specific antecedents to researcher motivation.

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1. Introduction[1]

The importance of research and development (R&D) in industry is growing, as reflected in the increasing share of GDP spent on R&D (OECD, 2016). Accordingly, an increasing proportion of work is characterized not by standardized, repeating operations but by complex and frequently changing research tasks. What sets this type of work apart is its unpredictability and longer time scales: the impact of a specific activity on achieving the goal may not be observable for years, or be hard to predict altogether (Verzuh, 2012). Additionally, it often has to co-exist within companies with management processes tailored towards certainty and careful planning, rather than flexibility (Castiaux and Paque, 2009; Drucker, 1995).

In such settings it becomes vital to properly manage the work of researchers that perform these challenging and flexible tasks (Bremser and Barsky, 2004). *Researchers* are defined here as company employees that generate, use and communicate technological knowledge (Ángel and Sánchez, 2009). To manage these employees companies traditionally have employed formal performance management systems (PMS). A *PMS* is a tool for specifying and managing the achievement of organizational goals, as well as ways in which these goals are achieved (Broadbent and Laughlin, 2009). Typical components of a PMS include objectives, measures expressing these objectives in a quantified manner, anticipated levels of performance

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   [1] Abbreviation. PMS: performance management system

on these measures, processes used in evaluating performance, rewards and conditions upon which these can be obtained, and information flows for monitoring and communicating performance levels (Ferreira and Otley, 2009; Otley, 1999), even though specific PMS may not have all of these elements. One popular example of a PMS is the balanced scorecard, where financial targets are supported by internal business and learning processes needed to realize these targets (Bremser and Barsky, 2004; Kaplan and Norton, 1996).

One of the most important components in managing researcher performance is motivation, particularly the intrinsic kind (Finegold and Frenkel, 2006). The issue of accounting for motivation in PMS has been studied in the literature on management control (Adler and Chen, 2011; Kominis and Emmanuel, 2007), research management (Farris and Cordero, 2002) and human resource (HR) management (Finegold and Frenkel, 2006). It is also known that managers at research departments are often responsible to adapting company performance management processes and structures to idiosyncrasies of research work (Ángel and Sánchez, 2009).

However, extant studies on this topic consider primarily how a PMS can be *designed* to affect motivation, while relatively little has been said about the motivational effects of its *use* (Ferreira and Otley, 2009; Kerssens-van Drongelen et al., 2000; Ojanen and Vuola, 2006). Differences between design and use include the fact that a PMS is often designed by one group of actors (e.g., the HR department) but used by others (individual departments such as R&D or marketing) (Ángel and Sánchez, 2009). Further, design is typically a one-time occurrence (perhaps with periodic updates) while use is taking place continuously over time (Bourne et al., 2000; Kennerley and Neely, 2003). Clearly, everyday actions and attitudes of managers and researchers with regard to activities prescribed by the PMS have an impact on researcher motivation (Simons, 1994). Thus from both the theoretical and the practical perspectives it is important to consider motivation not only at the PMS design stage, but also in the ways it is used. This sentiment has been captured in calls to better evaluate the concept of motivation against other theoretical constructs and assess motivation in larger work settings (Locke and Latham, 2004; Steel and König, 2006). And simultaneously considering PMS design and use, as it is done in this study, allows integrating the investigation of two key PMS aspects and painting a more nuanced picture of PMS influences on motivation.

We take a step towards filling these gaps by answering this research question: how does the design and use of a performance management system affect researcher motivation? In doing so, the study constructs a framework that integrates the impact of both PMS design and its use on researcher motivation.

Achieving this aspiration allows this study to make the following contributions. First, by bringing attention to PMS use and considering it alongside PMS design, it highlights the importance of use in researcher motivation. Second, it brings together several so far disparate strands of research to elicit specific PMS elements at both design and use stages that affect researcher motivation, which informs our framework and may aid future studies in this domain.

2. Literature review

PMS and motivation are both popular topics across several fields of inquiry. Indeed, many performance management frameworks[2] have been developed: e.g., (Broadbent and Laughlin, 2009; De Waal, 2003; Ferreira and Otley, 2009; Finegold and Frenkel, 2006; Kaplan and Norton, 1996). This research is vibrant, however two broad issues require further attention. First, while the impact of PMS design on employee motivation has been previously investigated (Adler and Chen, 2011; Ferreira and Otley, 2009), few of these studies were conducted in the research domain. This area is characterized by a high degree of uncertainty and complexity (Petrick and Pogrebnyakov, 2009), particularly in discontinuous innovations that are often performed in the pharmaceutical industry. This has significant implications for PMS, such as a much more significant role played by intrinsic motivation than in other realms (Finegold and Frenkel, 2006). Second, most studies of PMS focus on the *design* of these systems, and relatively few explicitly consider their *use*, and even fewer the ways in which use affects researcher motivation (Bourne et al., 2000). This review disaggregates PMS into design and use and argues that explicit attention to these two areas helps better focus the research and practice of performance management in research settings.

2.1. Motivation

Definitions of motivation abound (Kleinginna and Kleinginna, 1981). Most highlight its ability to compel people to behave in a particular way, as well as the intensity, duration and scope of this behavior (Kunz and Pfaff, 2002; Meyer et al., 2004; Ryan and Deci, 2000). A distinction is typically made between two modalities of motivation: extrinsic and intrinsic. In *extrinsic* motivation the value of engaging in an activity for an individual is in achieving a specific outcome, and this type of motivation stems from external pressures or constraints (Osterloh et al., 2002; Ryan and Deci, 2000). By contrast, in *intrinsic* motivation the value lies in performing and enjoying the activity itself rather than achieving a separable outcome (Amabile, 1997; Cameron and Pierce, 1994; Kunz and Pfaff, 2002; Ryan and Deci, 2000).

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[2] A distinction is often made between performance measurement (identifying dimensions and metrics that describe performance with the goal of reducing uncertainty) (Chiesa et al., 2008; Davila, 2000; Kerssens-van Drongelen and Cooke, 1997; Neely et al., 1995) and performance management (applying these metrics and obtaining feedback to make performance-related decisions and enact change) (Amaratunga and Baldry, 2002; Brudan, 2010; Kagioglou et al., 2001). We focus on the latter.