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Special Issue

Towards a Theoretical Foundation for Performance Measurement and Management

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Editorial

Towards a Theoretical Foundation for Performance Measurement and Management

1. Introduction

Ever since Johnson and Kaplan's (1987) seminal publication entitled *Relevance Lost: the rise and fall of management accounting*, the field of performance measurement has gained significant attention from practitioners and researchers alike. For the three-year period from 1994 to 1996, Neely (1999) identified over 3600 articles which he called the "Performance Measurement Revolution".

So far, we have seen a wide variety of performance measurement models and frameworks emerging both from academia and practice (Keegan et al., 1989; Fitzgerald et al., 1991; Bititci and Carrie 1998; Bourne et al., 2000; Kaplan and Norton, 2001; McAdam and Bailie, 2002; Neely et al., 2002). Today, we can confidently state that performance measurement is common practice across all sectors. However, the field has not been without its critics. Just as many researchers and practitioners claim that performance measurement and management leads to improved organisational results, there are also other researchers and practitioners who argue that performance measurement and management (PMM) is counterproductive. For example, in their book entitled "Profit beyond measure", Johnson and Broms (2000) question the need for performance measurement. Similarly, other researchers question the relevance of management practices, particularly those concerned with measures and targets, in the modern knowledge-based economies (Ghoshal, 2005 and Hamel, 2009). Davenport (2006) supports this view suggesting that performance measurement should be all about learning, rather than controlling organisations. There is another perspective emerging in the literature where researchers argue that the majority of the PMM knowledge has been captured from organisations operating in stable environments and many authors argue the need for PMM knowledge in fast changing dynamic and turbulent environments (Nudurupati, Tebboune and Hardman, 2016; Melnyk et al., 2014; Bititci et al., 2012; Johnston and Pongatichat, 2008; Ittner et al., 2003). In summary, performance measurement remains a subject of considerable debate and, to date, the empirical literature has not objectively demonstrated that performance measurement makes a positive impact on performance (Franco-Santos et al 2012).

Whilst there are many new challenges and opportunities facing the field (Bititci *et al.*, 2012; Harrington et al., 2011; Melnyk et al., 2010; Benner and Tushman, 2003; Lee, 2004), there is also growing concern, within the academic community, over the robustness of the theoretical foundations of the field. This is exemplified by recent papers that have been emerging in some key journals such as *Journal of Management* (Richard *et al.* 2009), *International Journal of Management Reviews* (Bititci *et al.*, 2012), *Management Accounting Review* (Melnyk *et al.*, 2014) and *International Journal of Production Research* (Choong, 2013). It is a concern that, whilst there is abundant research within specific disciplines, such as management accounting; operations management; strategic management; human resource management; marketing and organisational behaviour, a meta-theory for PMM has failed to emerge (Franco-Santos *et al.*, 2012).

In this special issue, our purpose is to compile a number of contributions that conceptualise performance measurement and management from different theoretical perspectives and, ultimately, contribute towards the development of a more robust theoretical basis for the field. In doing so, we hope to understand whether it is feasible to expect a meta-theory for PMM to emerge and, if it is, what needs to be done to enable such a theoretical basis to emerge.

2. Theoretical Foundations of Performance Measurement and Management

Many of the papers published in the field fail to mention that the basis of performance measurement and management lies in organisational and management control theories. Indeed, these theories developed from the general systems theory (Weiner, 1948; Ashby, 1956; Bertalanffy, 1968). This is evident in much of the thinking that underpins this field that describes performance measurement and management as the process measuring what matters, reporting these measures, reviewing performance and taking action, effectively describing a closed loop control system (Bititci, 2015). Neely et al's (1995) definition of performance measurement (i.e., a metric used to quantify the efficiency and/or effectiveness of action) and Melnyk et al's (2014) definition of performance management (i.e., the process for developing the metric set, setting goals, collecting, analysing, reporting, interpreting and assessing performance differentials) reinforces this point. In short, performance measurement and management comprises the key elements of a control system, i.e., measure, compare, analyse and act.

As in the performance measurement literature, organisational control and management control theories describe the organisation as a dynamic entity operating in an environment that is constantly changing thus necessitating the basic structure of any control system: Measure, Compare, Analyse, Correct and Prevent (e.g. Cardinal, 2001; Tessier and Otley, 2012; Melnyk et al, 2014). However, organisations are complex systems, and theories that surround organisational control, managerial control and performance measurement have evolved from related but parallel fields. In the organisational control field, authors such as Cyert and March (1963), Thompson (1967), Woodward (1970) and Child (1973) have theorised about organisational control. Other authors such as Ouchi (1979), Cardinal (2001) and Liu et al (2013) have built upon these theoretical foundations. In a similar vein, management control theories have developed from the management accounting field (e.g., Rotch, 1993; Tessier and Otley, 2012) where control is defined as "the process of assuring that the organisation does what the management wants done" (Anthony, 1965). A common feature of these works is the recognition of two different types of organisational control, i.e., technical control and social control (Child, 1973; Ouchi, 1979; Cardinal 2001; Cardinal et al, 2004). Technical controls are the rational, planned, bureaucratic and structural elements of the organisation and include business planning, measuring performance, setting targets, policies and procedures, reviews and rewards. Social controls focus on emergent, cultural and behavioural aspects of the organisation and include factors such as shared values, collaboration, participatory decision-making, open information sharing and keeping promises.

Simons (1995), in studying how managers use formal control systems for strategic change identify four levers of control. These are:

- **Belief systems** that provide momentum and guidance (e.g., purpose, values, direction)
- **Boundary systems** that allow creativity within defined limits (e.g., policies, procedures, codes of practice)
- **Diagnostic systems** that ensure important organisational goals are achieved (e.g., feedback, monitoring, review)
- **Interactive systems** that focus attention on strategic uncertainties (e.g., participation and involvement in decision making)

Tessier and Otley (2012 reviewed Simons' (1995) levers of control model and proposed a revised framework which places the technical and social dimensions of control at the heart of their model. In fact, one could argue that, based on the above definitions, Simons' belief and interactive systems would be classified as social controls and boundary and diagnostic systems as technical controls.

The performance measurement literature has developed along a similar path. According to Bititci et al., (2012) and Melnyk et al., (2014), this literature has evolved through performance measurement (what to measure) to performance management (how to use the measures to manage organisations' performance). In this context, Bititci (2015: pp. 17 and 29) provides a set of definitions that clearly delineate between performance measurement system and performance management as technical and social controls respectively (Figure 1).

Concept	Definitions from Bititci (2015)
Performance	Efficiency and/or effectiveness of an action
Performance Measure	Qualitative or quantitative assessment of the efficiency and/or effectiveness of an action
Performance Measurement System	Process (or processes) of setting goals, developing a set of performance measures, collecting, analysing, reporting, interpreting, reviewing and acting on performance data (technical controls)
Performance Management	Cultural and behavioural routines that define how we use the performance measurement system to manage the performance of the organisation (social controls)

Figure 1. Key definitions from the field (Bititci; 2015: pp 17 and 29)

As discussed earlier, the literature on performance measurement offers conflicting views. On the one-hand, some argue that organisations managed through measures perform better (de Waal, 2001). On the other-hand, others suggest that performance measurement intensifies command and control practices adversely impacting performance (Ittner and Larcker, 2003). Subsequently, Smith and Bititci (2017) developed a new framework by positioning social and technical controls as two separate but interrelated and complementary concepts. Through their work, they not only demonstrate the interaction between technical and social controls, they also demonstrate that their theoretical framework provides a basis for explaining previously known but yet untheorized phenomenon.

From the above discussion and examples, it is clear that the foundations of performance measurement and management lie in organisational control theories. However, many researchers in the field neither make their theoretical perspective explicit nor use other management theories to explain the phenomenon associated with performance measurement and management. There are, however, some exceptions, for example, a scan through the literature reveals that a limited number of researchers use theories such as agency theory, chaos theory, contingency theory, game theory, goal setting theory and equity theory to research various phenomena associated with performance measurement. However, the findings from these studies have not been consolidated towards a theoretical framework for performance measurement and management. Thus, we argue, based on the current works it is not clear how the field should develop in the future.

3. Developing the field

In light of the criticisms targeted to the field of performance measurement and management, it is clear that there is a need to ground better the theoretical foundations of the field. We believe that this field suffers from a number of characteristics that makes it difficult for researchers to establish a common theoretical basis. **Firstly**, the multidisciplinary nature of the field suggests that researchers from different disciplines, such as HRM, strategy, operations, supply chains, marketing and operations research, bring their own theoretical lenses. Although this diversity of academic perspectives has created a wide variety of insights, it has hindered theory building. **Secondly**, there is a perception that this is an applied field and thus does not need theoretical grounding. This is exemplified by a number

of papers in the field that make a contribution to the performance measurement body of knowledge but they do not contribute towards a unifying explanatory framework that explains the phenomenon of performance measurement and management. **Thirdly**, we believe the word “control” has negative connotations both in practice and research as many researchers and practitioners associate “organisational control” with “command and control” and, thus, feel uncomfortable talking about performance measurement and management in the context of organisational control.

This line of thinking leads us to the question, what is theory? According to the Oxford Dictionary, ‘Theory’ is defined as *a supposition or a system of ideas intended to explain something based on general principles independent of the thing to be explained*. Hence, in relation to performance measurement research we would suggest that **a theory is an explanatory structure or framework that helps us understand and rationalise various phenomena associated with performance measurement and performance management**. This suggested definition is in line with Jack Meredith’s (1992) theory-building paper on models, frameworks and theories and aligns with David Whetten’s (1989) paper on what constitutes theoretical contribution. From Whetten’s perspective it is important not only to understand the **what** (the phenomenon), but also **how** they interact and ideally reach a stage of being able to explain **why** they behave in such a manner. More importantly, developing such a conceptual framework should provide the necessary skeletal structure to enable us to populate and enrich this structure with new insights and knowledge as they emerge from our future research.

Thus, we strongly argue that there is an urgent need for such skeletal structures to lay the theoretical foundations for the field and enable future researches to build more effectively on each other’s work and to enrich the field. Such a foundation will not only enable knowledge to develop more systematically, it will also provide the basis for more robust and better quality research outputs to emerge.

At this point you, the reader, may wonder what we should be doing with all the other theories that are currently used to research performance measurement. In reviewing the field, reading the papers contained in this special issue and reflecting on the above discussion, it is becoming clear that in the past we have been using various management theories (such as agency theory, contingency theory, game theory and goal setting theory) to help us understand a particular phenomenon associated with performance measurement. Clearly, this approach helps us accumulate a wide body of knowledge in the field but does not progress us towards developing a theoretical framework for performance measurement within which all this knowledge may be integrated.

We would recommend that future research in the field should be focused towards contributing to and enriching a theoretical framework for performance measurement and management. This suggests that **we need at least one such theoretical framework that could be used to explain various phenomena associated with performance measurement and management**. In proposing the need for such a framework, we are **not** suggesting that there is room for only one such framework. On the contrary, we believe development of a number of such competing frameworks would be healthy for the field and would enable the field to develop along divergent paths in innovative ways with occasional convergences between various frameworks. We also believe that organisational control theory, discussed above, could provide the basis for such a theoretical framework.

4. Contributions of this special issue

In this special issue, we have five papers that explore different aspects of performance measurement and management using different theoretical lenses. Whilst each paper contributes to the wide body of literature in the field, when collectively scrutinised, we observe two clear patterns. The *first* pattern is that they all complement one another. For example, the first paper on measurement of sustainability raises a number of questions which include unintended consequences of performance measurement, which is the focus of the second paper. The *second* pattern, that emerges is that all five papers theorise their findings in the context of organisational control theories discussed in the above paragraphs.

In the following paragraphs, we have provided an overview of each paper highlighting their contributions as well as emphasising the linkages between the papers.

The *first* paper by *Mura et. al.* focuses on **measurement of sustainability** with an aim to: identify main conceptualisations and theoretical approaches; understand how research in sustainability could contribute to development of the field of performance measurement; and to propose a research agenda for future development. They achieve this aim through a bibliometric review of the relevant literature that leads them to eight clusters of internally consistent research areas. They summarise the main and emerging arguments of each cluster in Table 5 of their paper, which also includes the main theoretical lenses adopted in these studies. What is revealing is that, across these clusters, whilst there are some consistencies in the theoretical lenses used to study these phenomena, there are areas where no particular theories have been used. Also, a quick glance across their findings suggest that legitimacy theory, stakeholder theory and signalling theory are the most common lenses that have been used to research these phenomena. In their discussion, the authors suggest that the field of sustainability measurement is fragmented and lacks cohesion. They also intimate that the literature on sustainability measurement is somewhat decoupled from mainstream performance measurement literature. This may be due to the lack of unifying theoretical frameworks for performance measurement as well as for sustainability measurement as discussed earlier in the previous section of this editorial. In terms of their contributions, it is clear that sustainability measurement also has both technical and social dimensions. It is also clear from their discussions that these dimensions are valid not only at an organisational level, but also valid at a network/supply chain or even economic system level. In concluding their discussion they suggest that in both the performance measurement and sustainability measurement literature specific behavioural consequences are rarely investigated, which further reinforces the need for an integrated understanding of technical and social controls at organisational, inter-organisational as well as economic system levels.

Following on from the above, the *second* paper by *Franco-Santos and Otley* focuses on **unintended consequences of performance measurement systems** with an aim to understand how and why these unintended consequences occur. They pursue this aim through a mixed approach to the literature review that combines the traditional eclectic approach with the systematic approach to literature reviews. They present their findings under two headings, as insights emerging from performance measurement and sociology literature. The initial findings of their review firmly grounds performance measurement and its unintended consequences in organisational control theory, with particular emphasis on formal (technical/rational) and informal (cultural/social) controls. They also identify contingency, stewardship and agency theories as relevant explanatory frameworks to help better understand how and why unintended consequences of performance measurement occur. In their conceptualisation of agency and stewardship theories, they equate these two perspectives to the two-ends of the social controls dimension of organisational controls, i.e., command and control (directive) and participative and democratic (enabling) respectively. They go further to suggest that the technical and social dimension of control needs to be understood and studied concurrently in the context of

complexity of both the performance measurement system and the environment in which they operate.

The *third* paper by *Okwir et. al.* picks up the debate on the **complexities of performance measurement systems** with an aim to better understand how complexities emerge while implementing and using performance measurement systems in organisations. They adopt a complexity theory lens and undertake a systematic literature review to better understand and explain this phenomenon. Their findings lead them to conceptualise PMS as a complex system comprised of six sources of complexity (role, task, procedural, methodological, analytical and technological) that are abstracted as performance measurement complexity. A major implication of understanding performance measurement complexity is to change how organisations should systematically respond to the multiplicity of best practices by examining the unique context in which a PMS is operating. They theorise that both technical and social complexity of performance measurement and management is reduced as performance measurements systems grow in maturity and as they are increasingly used as enabling systems. In their conclusions they highlight the need to understand performance measurement and management from both technical and social control systems perspectives, without which performance measurement systems are unresponsive and vulnerable in emerging contexts

The *fourth* paper by *Beer and Micheli* picks up the discussion on the need for balancing technical and social controls. Their aim is to focus on **social aspects of performance measurement** and complement longstanding enquiries into technical controls. Their point of departure is the critical role of the subjects' (i.e., individuals') perspective to performance measurement and management. They pursue this aim by reviewing research conducted in social value measurement. Their findings surface the basic assumptions that underpin social value measurement and implications of these assumptions on performance measurement and management. They also identify potential theoretical lenses that could be employed to investigate these implications. Their concluding message is that, in performance measurement research, there needs to be a move from "technicalities of measurement" towards more "human centred measurement practices and positive experiences". In other words, from a social value measurement perspective they reinforce the need for performance measurement systems and practices that achieve balance between technical and social controls.

Continuing from the need for understanding performance measurement and management in an inter-organisational context highlighted in the first paper, the *fifth* paper by *van Fenema and Keers* focuses on **inter-organisational performance management** from a value creation perspective. Their review uncovers five different approaches to inter-organisational performance management and results in development of a co-evolutionary process model for inter-organisational performance management. In their conceptualisation, the organisational level and the inter-organisational level performance measurement and management practices evolve over time through a co-evolutionary layer that enables sense making, cross-checking and conceptual modelling as well as dynamic value management at organisational and inter-organisational levels. They discuss the implications of this model on performance measurement research in the context of Simons' four levers of control: diagnostic, belief, boundary and interactive systems.

It is evident from these papers that performance measurement and management is a field that sits at the intersection of many disciplines. It is also evident from these papers that the researchers have been using different economic, sociological and management theories to explain various performance measurement and management related phenomena. It is also clear from our earlier discussion and the contents of these five diverse papers, organisational control theory as conceptualised by Simons (1995), Tessier and Otley (2012) and Smith and Bititci (2017) may provide a common ground for

creating the much needed conceptual framework by which we can start building the theoretical foundations of performance measurement and management.

5. Where do we go from here?

In this editorial, we have refrained from building a theoretical framework and attempting to populate this framework with the new knowledge emerging from the five papers contained in this special issue. We believe this is out of the remit of this editorial and would require significant further analysis, conceptualisation and theorisation.

As we intimated earlier, there is a need for creating theoretical frameworks that would enable existing and new knowledge in the field to be organised in a cohesive and coherent manner. We would suggest that at least one such theoretical framework might be grounded on organisational control theory. We would thus encourage the field to develop in one of the following two paths.

Firstly, in the absence of a unifying theoretical framework, we would encourage researchers investigating various performance measurement and management phenomena to adopt one of the frameworks from Simons (1995), Tessier and Otley (2012), Smith and Bititci (2017) or a combination of these, and ensure that their findings are theorised in the context of these frameworks. In doing this they may consider the following questions:

- What performance measurement and management phenomena am I investigating?
- How do these phenomena interact?
- Why do they interact in this way?
- What theories am I going to adopt to investigate these phenomena?
- What are my findings?
- How can I theorise these findings in the context of one of the above theoretical frameworks for performance measurement and management?

Secondly, in parallel with the above, we would encourage development of a number of competing theoretical frameworks that enable better integration of existing and new knowledge in the field.

6. Acknowledgements and Conclusions

We would like to start with extending our thanks to the Editorial team of IJMR for giving us the opportunity for compiling this special issue, which was partially inspired by the organisation of the Performance Measurement Association's biennial conference, which took place in June 2016 in Edinburgh, Scotland, UK. The other inspiration was various criticisms received in the field from different authors for lack of theoretical basis, as intimated in our introductory section. Realisation of this gap together with the opportunity offered by the PMA 2016 conference provided the inspiration for developing a special issue of IJMR with a purpose of advancing the field towards developing a robust theoretical foundation for performance measurement and management.

The call for papers that was published in 2015 resulted in approximately 160 papers at the conference, 26 of which were aimed at the special issue. What followed was an initial selection process that led to 14 papers being submitted for consideration for the special issue. A further 16 papers were then received in response to the general call that was published in 2015. In short, for this special issue we

received a total of 30 papers. All papers were rigorously reviewed by the editorial team, some were desk-rejected because they did not fit the main requirements of the journal and the special issue, the rest were sent for double blind reviews by three independent reviewers. The five papers that make up this special issue were reviewed and revised at least three times before they were accepted for publication.

We would like to extend our thanks to all the reviewers who had to review each paper several times and were instrumental in the development of these papers. Their efforts and contributions cannot be underestimated.

We would also like to thank all the authors, including those whose papers did not make it to the special issue. Writing for quality academic journals could be a frustrating task. The authors need to tolerate and balance the views of reviewers, guest editors and journal editors. Although all this feedback contributes towards a much stronger paper, it feels like a never-ending process at the time. We realise that many of the authors whose papers were not included in this special issue will be disappointed. We believe that your papers were interesting and had the opportunity to make a contribution to the field. We would encourage you to continue developing your papers, perhaps using some of the insights from this special issue, towards making theoretically grounded contributions to the field.

Finally, we hope that, with this special issue, we have achieved our objective and moved the field one step closer towards a theoretical foundation for performance measurement and management.

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