Shortcomings of Current Performance Measurement and Management Systems: A Literature Review

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Abstract: The performance measurement system as a tool for knowledge sharing and continuous improvement plays a key role in the knowledge management development. Previous research indicates that performance measurement and management systems are not always successfully implemented to improve decision-making or knowledge management. Many failures relate to the behavioural aspects of performance management, but a systematic review of this topic is lacking. Therefore, the main aim of the paper is to explore the shortcomings of current performance measurement and management systems. The study conducted a systematic review of the literature of peer-reviewed articles over the past 20 years. The main shortcomings are analysed within the individual categories of technical and social control, especially in terms of design, implementation, and behavioural aspects. The findings revealed that the most common causes of shortcomings of measurement and management performance systems include technical problems, insufficient or late knowledge sharing, or the inability to effectively implement the entire system. An ineffective performance measurement and management system encourages bad decisions and wastes resources by misallocating them. Subsequently, this results in dysfunctional employee behaviour and deterioration in overall performance, which often even increases fear, reduces employee trust, and engagement. Based on the synthesis of the results, the paper suggests how to prevent the identified shortcomings to cause a rapid change in the behaviour of employees. From a theoretical contribution point of view, the research provides a comprehensive and clear view of the currently available theory of performance measurement and management systems. In terms of managerial implications, point out the shortcomings of current performance measurement and management systems and outline how to overcome them.

Keywords: Performance measurement system, Shortcomings of performance measurement, Performance management systems, Knowledge sharing

1. Introduction

In today's world, where changes are occurring at an increasingly rapid pace, businesses need to know and be able to effectively measure and manage performance (Micheli and Mura, 2017). The need to correctly measure performance in the company is even greater than ever before (Kotkova Striteska & Zapletal, 2020), as performance measurement is an obvious but often overlooked variable that can mediate the link between knowledge management (KM) and organizational performance (Asiaei and Bontis, 2020). In the past, research has gone in the direction of the technical aspects of performance measurement (Reznakova et al., 2017), while the behavioural aspects of performance management have been neglected. This very often resulted in a mismatch between performance measurement and the organisational environment, leading to frequent failures of the contemporary performance measurement and management system (hereinafter PMMS) (Van Camp and Breat, 2016).

Although there is a considerable amount of literature on PMMSs, there is no universally accepted theory or consensus on the specific factors and contexts that influence their successful implementation and improvement. Taylor and Taylor (2014) state that it is necessary to explore the factors that significantly affect the implementation of PMMS, as to date there are only a few studies that have dealt with this topic. Similarly, Bourne et al. (2018) emphasise the inadequacy of current approaches within PMMS and Blasini and Leist (2013) point out the need to look for factors that influence successful development, implementation and functioning of PMMS in practise. To meet these challenges, it is necessary to identify the main shortcomings of the current PMMS. Therefore, the main aim of the article is to explore the shortcomings related to design, implementation, and behavioural aspects of current PMMS.

With the help of a systematic review of the literature, the PMMS concept according to Smith and Bititci (2017) is defined. Based on it, the failures of current PMMS are divided according to technical and social control, especially in terms of design, implementation, and behavioural aspects. Finally, the conclusions, limitations, and future research opportunities are outline. From a theoretical point of view, the paper deepens the understanding of existing knowledge related to effective performance measurement and management systems as tools for knowledge sharing and continuous improvement and learning. From a managerial perspective, the findings can provide inspiration on how to effectively manage PMMS in a current dynamic and turbulent environment.

2. Performance Measurement and Management Concept

The current approach to PMMS has evolved from a focus on what to measure to how to manage it (Smith and Bititci, 2017) and is recently understood in the context of organisational control theory (Nudurapati et al., 2021). In this context, performance measurement is a technical control that includes processes related to setting goals, collecting, analysing, and interpreting performance data (Bititci et al., 2015). The social control dimension is then represented by a performance management system, which encompasses processes for assessing differences between actual and desired outputs, identifying differences that are critical (thus warranting management intervention), understanding whether and why these deficiencies have occurred, knowledge sharing and, if necessary, implementing (and monitoring) corrective actions aimed at closing significant performance gaps (Melnyk et al., 2014). In the context of KM, the social control dimension plays crucial role to successfully cope with the difficulties of the management of the company's most strategic assets, i.e., knowledge resources (Asiaei and Jusoh, 2017). However, in the literature, we often find two separate concepts (performance measurement and performance management), which are not complementary (Kotkova Striteska and Zapletal, 2020).

Therefore, the key role of PMMS as a tool for KM, continuous improvement, and learning must be redefined (de Lima et al., 2013). A system must be created that uses the information and knowledge gained from performance measurement to create positive changes in corporate culture, business systems, and processes (Melnyk et al., 2014) and effectively identify, capture, and utilize relevant knowledge to enhance the overall performance (Cardoni et al., 2020). For this, companies need to establish a formal process for reviewing and revising strategic goals and performance indicators, which will ensure the dynamism and flexibility of the developed system (Kotkova Striteska and Zapletal, 2020). If PMMS is designed correctly, it can cause a rapid change in employee behaviour, which automatically leads to improved performance (Souza and Beuren, 2018). On the contrary, if this is not the case, the use of performance indicators can and does lead to dysfunctional employee behaviour, demoralisation, reduced confidence, and increased fear (Hamel, 2009). Therefore, for the purposes of this research study, PMMS is understood as a set of cultural and behavioural practises that determine the ways in which it is used (Bititci, 2015), with the goal being learning and KM rather than control (Davenport et al., 2010).

3. Methodology

Systematic literature reviews should be updated regularly to ensure they are relevant and include the latest available evidence (Tricco et al., 2021). Our systematic literature review is limited to literature published between 2000 and 2021. This time frame is considered appropriate given the great development and diversification of various aspects of performance measurement and management (Nudurupati et al., 2021). As a starting point, the question of what gaps exist in the field of business PMMS was defined. A search for peer-reviewed English articles was then conducted in the following databases: Web of Science and Scopus, which are the most widely used sources for academic publications in the field of business and management. A narrow search criterion was chosen using keywords (performance measurement system, shortcomings of performance measurement and management systems, failures, and challenges). Articles were selected for the subject areas of business, management, and business finance as searchable sources of academic publications (for the categories title, abstract, author keywords). Subsequently, the selection of studies, data extraction, synthesis of results, and interpretation of results were carried out (Machado et al., 2019). Research studies focused on public administration or PMMS for supply chain or sustainability were not included in the review due to their narrow and specific focus. In total, 25 studies were included in the research study. The entire methodological process of developing a research study is shown in figure 1.

4. Results and Discussion

To be precise, as conceptualised by Smith and Bititci (2017), diagnostic (measures, targets, feedback) and boundary (goals, policies, procedures) systems represent technical control, and belief (leadership, purpose, values) and interactive (participation, engagement, and KM) systems represent social control. Therefore, we include in the technical control aspects of PMMS design related to the selection of appropriate metrics and the use of resources to support data collection and analysis (Bourne et al., 2018) and aspects of PMMS implementation related to infrastructure and alignment of strategies (Taticchi et al., 2012).

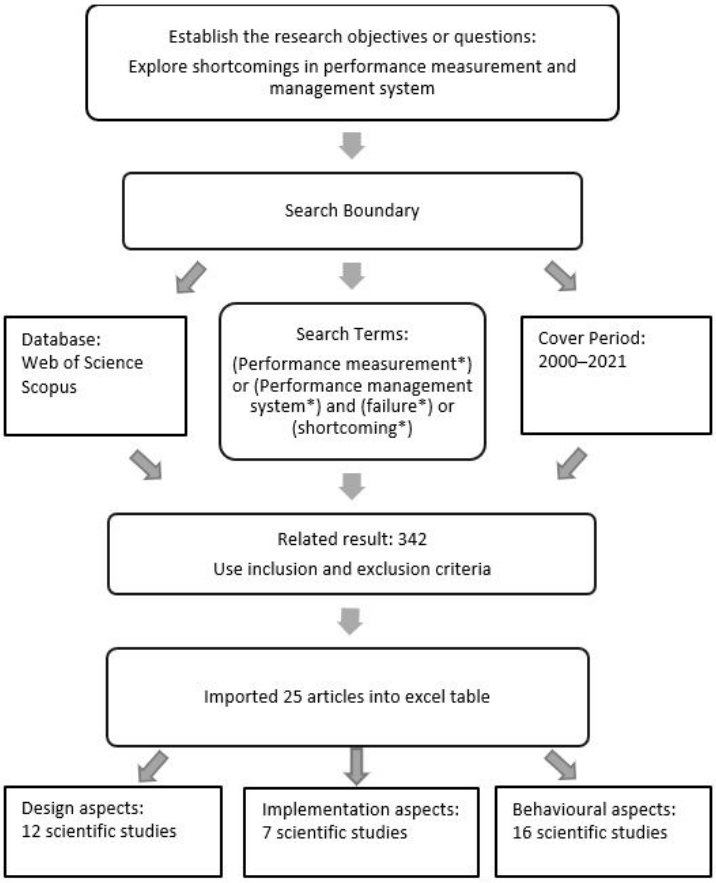

Figure 1: Methodological Process of Developing a Research Study

4.1 Technical Control

According to Bititci (2015), technical controls are more formal and explicit with specific methodologies, technologies, and analyses to achieve the objectives. The following table provides an overview of the findings of the main shortcomings related to design aspects of PMMS.

Table 1: Shortcomings Related to Design Aspects of PMMS

Scientific Study	Research Method	Key Findings
Neely and Bourne (2000)	Action research	The time, effort, and resources required to create the system make it a long and slow process, and therefore, top management must continually increase the energy level to complete the process.
Hudson et al. (2001)	Action research	Lack of consistency and objectivity; limited resources to invest in the development of PMMs.
Mol and Beeres (2005)	Action research	Environment with inadequate control of outputs; PMMS may be too focused on inputs or activities rather than outcomes; lack of appropriate incentives to motivate staff.
Folan and Browne (2005)	Literature review	Financial metrics (profitability and return on investment) are often emphasised, factors such as customer satisfaction and employee well-being are neglected; alignment with the organisation's strategic goals is missing.
Paranjape et al. (2006)	Literature review	Matric mismanagement - too many metrics and heavily weighted internal finance data.

Scientific Study	Research Method	Key Findings
Garengo and Bititci (2007)	Empirical study	PMMS in SMEs may be less effective than in larger organisations due to a lack of resources, expertise, and formal procedures.
Adler (2011)	Case study	Lack of focus on non-financial aspects of performance such as customer satisfaction or innovation.
Rahbek and Sudzina (2012)	Survey	Lack of understanding or awareness of the benefits of PMMS.
Pellinen et al. (2016)	Case study	Inability to capture intangible benefits (KM or innovation).
Van Camp and Breat (2016)	Conceptual study	Lack of a clear, unique and transparent definition of metrics, copying from others, unavailable data, difficulties in measuring intangible assets, unbalanced set of indicators, limited resources, i.e. time, people, money.
Forcada et al. (2017)	Survey	Absence of selected performance metrics, strong emphasis on price; inadequate consideration of communication performance.
Smith and Bititci (2017)	Action research	Inadequate consideration of nonfinancial factors (employee involvement, innovation, and sustainability) leading to a narrow focus on financial results.

Twenty years ago, Itner and Larker (2003) pointed out the insufficient consideration of nonfinancial aspects in PMMS. Table 1 shows that performance aspects strongly related to competitiveness, such as innovation, KM, employee engagement, and sustainability, are still not sufficiently integrated into contemporary PMMS. At the same time, it is precisely these performance measures that can effectively contribute to strategic alignment, organisational learning, and knowledge dissemination in organisations (Michaeli and Manzoni, 2017). The main reason is that measuring nonfinancial measures that usually reflects intangible value accurately, efficiently, and in a timely manner is very difficult, time-consuming, and expensive (Chow and Van der Stede, 2006). Even managers have already widely acknowledged the limitation of traditional financial measures, yet still prefer them because they consider them to be less ambiguous and more objective. The results also revealed other challenges related to PMMS, including lack of consistency and objectivity, focus on inputs rather than outcomes, and limited resources to develop integral systems.

Other factors that influence the success or failure of PMMS include the need to align measures with strategy, involve stakeholders, and use multiple perspectives (Taticchi et al., 2012).

Table 2: Shortcomings Related to Implementation Aspects of PMMS

Scientific Study	Research Method	Key Findings
Neely and Bourne (2000)	Action research	Infrastructure - the problem is that data in the enterprise come from separate databases, often in inconsistent form.
Pongatichat and Johnston (2008)	Interviews	Poor aligned with an organisation's strategy; PMMS may not effectively measure what is important to the organisation; suboptimal decision-making and resource allocation.
Garengo a Bititci (2007)	Empirical study	Insufficient alignment with the strategic objectives of the organisation, leading to a lack of focus on the most important aspects of performance - corporate governance structure, corporate culture, KM, and management information systems.
Davenport et al. (2010) Nudurapati et al. (2011)	Book / systematic literature review	Outdated, irrelevant, and inaccurate information; most of today's PMMS are outdated, not dynamic, and sensitive to changes in the internal and external environment of the enterprise.

Scientific Study	Research Method	Key Findings
Adler (2011)	Case study	Deficiencies in performance management and organisational strategy; performance measurement and management must be tailored to suit and support the implementation of a confrontational strategy.
Pellinen et al. (2016)	Case study	Vertical and horizontal integration: limited understanding of the impact of integration on performance; identification of relevant performance measures that reflect the impact of integration on performance; lack of consideration of interorganisational relationships.
Van Camp a Breat (2016)	Conceptual study	Frameworks – clear scope of implementation, choice of a range of different methods and frameworks, lack of KM, understanding, lack of feedback and learning, complex dynamics.

Table 2 confirms the importance of appropriate infrastructure to support the measurement and management of business performance (Bititci, 2015), including technologies, data management systems, and reporting (Micheli and Mura, 2017). Outdated and inaccurate information, inconsistent data, and poor alignment with strategy may neglect important drivers of future performance. Open communication, data visualization and a formalized review process of strategy, performance indicators, processes and projects are necessary to ensure an effective dialogue that enables the exchange of knowledge and the sharing of experiences between individuals (Couturier and Sklavounos, 2019).

4.2 Social Control

According to Okwir et al. (2018) or Bititci (2015), social complexity, which includes leadership, organisational structure, motivation, and culture, is critical to effective PMMS. In the same vein, Bourne et al. (2018) mention leadership support and employee engagement as key topics for the effective functioning of PMMS, among others. Asiaei and Jusoh (2017) add that knowledge-related factors can predict the design and implementation of PMMS.

Table 3: Shortcomings Related to Behavioural Aspects

Scientific Study	Research Method	Key findings
Neely and Bourne (2000)	Action research	People feel threatened; top management use performance measurement data to gain the upper hand over managers to prove that they are not delivering the required performance; blame culture.
Bourne et al. (2002); Bourne (2005)	Case study	The determining factor of success or failure is purpose; a high level of commitment from top management in favour of better management is a key element; intervention by the parent company often interrupts the implementation; culture that reduces fear of measurement.
De Waal (2003)	Literature review	Concerns about change related to staff workload or fear of failure; lack of coordination and collaboration; lack of trust in the PMMS and lack of timely feedback on performance to staff; lack of engagement and communication.
Pongatichat and Johnston (2008)	Interviews	Incentives are misaligned and employees are not sufficiently motivated.
Elzinga et al. (2009)	Case study	Resistant to change; inadequate feedback and knowledge transfer; inadequate training and support; insufficient trust and employee participation.
Davenport et al. (2010) Nudurapati et al. (2011)	Book / systematic literature review	Lack of commitment from top management to the implementation of the PMMS; problems with change management, such as resistance from people who often do not understand the objectives and potential benefits; management tends to use the PMMS as a control and attribution mechanism.
Kruis and Widener (2014)	Case study	Strong emphasis on financial indicators (to the detriment of non-financial ones); ability of managers to manipulate performance measures to achieve their own objectives and possible resistance to the introduction of PMMS (threat to managerial power).

Van Camp and Breat (2016)	Conceptual study	Governance – lack of leadership commitment, linkage to strategy, reward system, formal governance, IT support, user involvement, participation in decision making.
Pavlov et al. (2017)	Survey	Mismatch between PMMS and HR strategies; lack of communication between managers and employees about goals and performance measures; limited employee participation in the process, resulting in a lack of engagement and commitment to performance goals.
Ramberg (2017)	Case study	Individual focus on short-term goals and immediate results; lack of communication and coordination between stakeholders; difficulty in changing organizational culture and practices within the company; reluctance to adopt new practices.
Skoczylas and Waśniewski (2017)	Literature review	Achieving goals that differ from overall company goals; suboptimal decision-making and actions; manipulation of PMS-related data; information overload; short-term focus; employee resistance to change.
Smith and Bititci (2017)	Action research	Lack of integration with other practises; the limited involvement of employees in company processes (lack of employee engagement and inability to use the full potential of employees).
Striteska and Jelinkova (2018)	Conceptual study	Employee reluctance to implement new PMMS, bias, and subjectivity; overemphasis on short-term performance; lack of alignment with corporate strategy; lack of communication between employees and management.
Hassan a kol. (2020)	Quantitative study	Stakeholder engagement; leadership and quality management practices have a significant positive impact on the PMS.
Murphy (2020)	Conceptual study	Possible bias; focus on individual performance (rather than team performance); use of performance appraisals as a tool for punishment rather than development - possible fear and mistrust, lack of employee motivation and commitment.
Uddin et al. (2021)	Case study	Incentivisation to achieve individual employee goals; overemphasis on and reliance on financial indicators; employee resistance to change; lack of alignment of key performance indicators with the organisation's strategic objectives.

The Table 3 reveals that purpose, structure, culture play a significant role in the success or failure of PMMS in terms of behavioural aspects. The purpose-related results show that PMMS should primarily be used for continuous improvement, learning and knowledge sharing, not for control and command. In this context, employee engagement in the design, implementation, and use of PMMS can play a key role in spreading knowledge and creating a performance-orientated corporate culture (Kotkova and Zapletal, 2020). Management should actively support employee development and learning and create a culture in which KM is seen as an important part of corporate strategy (Pellegrini et al., 2020). Similarly, our findings correspond with research studies that consider top management commitment and a proper leadership style essential for the effectiveness of PMMS use (Razzoli, 2017; Bourne et al., 2013).

As stated by Okwir et al. (2018), well-defined roles and responsibilities, trust, knowledge sharing and transfer, and regular training are essential components in ensuring effective functioning of PMMS. Adler (2011) adds task clarity and effectiveness, along with positive relationships and minimal conflicts within the company, as crucial factors for successful PMMS. All these factors help to build a performance-driven culture that supports the right purpose of PMMS and is considered a major predictor of a company's ability to respond to the external conditions of the current dynamic environment (Dubey et al., 2017). This is another important finding that our research study outlines. Similarly, Melnyk et al. (2014) revealed that current PMMSs are often inflexible and resistant to change in today's business environment. According to Kolehmainem (2010), a balance between alignment and empowerment is necessary for the use of flexible and adaptive PMMS. Furthermore, the ability of PMMS to address KM issues and the challenges of information, flows of information and interaction mechanisms (Jordão and Novas, 2017) plays a role in greater flexibility and adaptability.

5. Conclusion

The results of the research study showed that several shortcomings related to the design, implementation, and use of PMMS have been identified in the past. A very interesting finding is that connections can be found

between them. If the PMMS is not balanced, i.e., it does not sufficiently measure nonfinancial aspects, it cannot make the necessary changes in corporate strategy, culture and KM that contribute to continuous learning and improvement. At the same time, how the company can effectively respond to changes in the surrounding environment is determined by culture, strategy, and KM (Melnyk et al., 2014). It is therefore clear that if we want to avoid PMMS shortcomings, it is first necessary to change the way we look at the company culture and, style of leadership and KM.

This study also has limitations as it includes studies selected by us in the time range 2000-2021 and there may be studies not included in the paper that would differ from our results. Articles were filtered based on the appropriateness of the selection criteria, while there may be limitations in the aspects we selected. The choice of other aspects provides an opportunity for future research. To sum up, findings of our research study support Beer a Micheli (2018) statement that future research must encourage a shift away from the technical aspects of measurement mechanisms that seek to obtain valid and reliable performance information in an objectified and standardised manner, to knowledge-based approaches that generate human-centred measurement practises and positive experiences. Furthermore, our results point to the importance of considering behavioural aspects in the performance measurement and management process, both at the level of the performance measures themselves and at the level of compliance with the organisational environment. Future research should also explore how PMMS may support and facilitate KM development.

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