Performance Measurement Systems and Culture:  
An Integrative Literature Review

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Abstract

Due to increased requirements for small-to-medium enterprise organizations (SMEs) worldwide to manage and use vast amounts of data and information, an organization must be able to improve in the design of its performance measurement system. Research in the field of performance measurement systems among SMEs has slowly emerged, but very little is known about how the design of performance measurement systems among these SMEs relates to, impacts, or is impacted by the culture in which the system is situated. This article examines the literature describing attributes of effectively designed performance measurement systems in public service organizations, non-profit organizations, SME organizations, and educational institutions. This article also examines the impact of the design of these systems on organizational culture. The results from this review, as well as implications for both organizational practitioners and academic researchers of all sectors, are provided.

Keywords: Performance measurement system design; small-to-medium enterprise organizations; culture; evidence-based decision making
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Introduction
The current climate of economic constraints, coupled with constant shifts in market and regulatory conditions, has brought with it a greater need for evidence-based decision making among organizations worldwide to inform both strategic and day-to-day improvements. As organizations need to manage and use vast amounts of data and information; there also exists an opportunity to improve in the implementation and design of its overall performance measurement systems. Because of regulatory shifts like the U.S.’s Government Performance and Results Act of 1993 and the No Child Left Behind Act of 2001, a body of knowledge of best practices in the design of performance measurement systems (PMSs) among public service and nonprofit organizations has begun to emerge, but few empirical studies other than case studies exist in the literature at this time (Kendrick, 2011; Melkers & Willoughby, 2005).

Purpose of Article and Research Questions
The purpose of this integrative literature review is to determine key attributes of effectively designed performance measurement systems (PMSs) among small-to-medium enterprise (SME) organizations, particularly among public service organizations (PSOs), nonprofit organizations (NPOs), and K-12 and higher learning educational institutions. The secondary purpose of this review is to examine the effect of these attributes on organizational culture in order to extract meaning to inform the design and improvement of PMSs for organizations of all types. For this investigation an SME was defined as any small-to-medium organization with approximately 500 or less employees (small), approximately 1,000 or less employees (medium), or any other organization with characteristics similar to that of these organizations, such as the tendency to be governed by regulatory requirements, locally defined expectations, and fewer available resources for agile development or growth. Many PSOs, NPOs, and educational institutions fit these criteria, so understanding efforts of implementing PMSs among these groups is necessary.

The following research questions served as the basis for investigation for this review of the literature:
1) What are the key attributes of effective performance measurement systems (PMSs) among small-to-medium enterprise organizations (SMEs)?
2) What is the impact of or relationship between PMS design or implementation and an organization’s culture?

Methodology
The key methods used for this investigation into the nature of PMSs and its relationship with organizational culture included a comprehensive review and analysis of the related literature. The literature search and review took place in four stages.
First, a search of the key terms of performance measurement systems AND culture was conducted among key databases in the business, educational, and psychological industries, which included ABI Inform, Eric via EBSCOhost, and PsychInfo via EBSCOhost, for all empirical, peer reviewed journals published since January of 2000, as this date reflects changes in policies concerning data-informed decision making among both public service and educational entities. This search yielded a total of 121 results in the English language. Each of the abstracts of the results was reviewed to determine which articles may be considered relevant to the current study. Only ten of the results related to the investigation.
Next, an additional broad search technique was used for the same key words to obtain a greater number of relevant articles by browsing multiple databases in the fields of business and economics, education, information and library science, political science, and psychology. This
search produced another 262 results in the English language. Using the same scanning method as described above, 23 peer-reviewed articles, theoretical articles, and literature reviews were deemed relevant for review.

The third stage of this search involved a query of the aforementioned databases in the field of education and educational evaluation. Zero results were returned when the terms PMS and culture were searched, so a separate search using the related terms of evidence-based decision making and data-driven decision making was conducted in order to capture information from this industry, which produced seven additional relevant results.

Finally, each of the final 40 articles was read in its entirety and evaluated using the following two criteria: 1) description of attributes of PMSs in the SME companies; and 2) an analysis of the impact of PMSs on culture. A total of 19 articles (Table 1) were included as key material to review to address the two research questions. Of these 19 articles, only four studies described impacts on or relationships between PMS design and culture (Eker & Eker, 2007; Goddard & Manion, 2004; Gimzauskiene & Kloviene, 2007; and Gregory, 2007).

Table 1

<table>
<thead>
<tr>
<th>Type of source</th>
<th>Sector</th>
<th>Total number of sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Empirical</td>
<td>Education</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Nonprofit</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Private</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Public service organization</td>
<td>5</td>
</tr>
<tr>
<td>Literature review</td>
<td>Private</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Public service organization</td>
<td>3</td>
</tr>
</tbody>
</table>

Performance Measurement Systems Defined

As organizations attempt to engage in management practices that deliver value to intended stakeholders through key products or services, these organizations must be able to address some key considerations about its performance on an ongoing basis. Some of these considerations may involve how well the organization operates, the extent to which it is creating intended or unintended impacts, how equitably it is distributing its resources, or its level of productivity (Holzer & Kloby, 2005). The Criteria for Performance Excellence (2011), published by the Baldrige Performance Excellence Program in the United States, is one of the most highly regarded authorities in supporting performance excellence in all sectors and has been replicated worldwide. The Criteria describe performance measurement as a critical tool used for “fact-based decision making for setting and aligning organizational directions and resource use at the work unit, key process, departmental, and organizational levels” (p.16). The fourth category of The Criteria, titled Measurement, Analysis, and Knowledge Management, prompts organizations to reflect upon the extent to which some of the key characteristics of its management processes are in place:

- the selection of key performance measures that are integrated with strategic objectives;
- the use and review of performance data to ensure rapid knowledge management, opportunities for improvement, and innovation;
- the ensuring of data availability, timeliness, and reliability for key stakeholder use; and
- the inclusion of measures in all critical performance areas, such as product, customer-focused, operational, financial/marketplace, and organizational learning measures into the measurement system.

For the purposes of this investigation, organizations that were described as seeking to answer questions about their impact and productivity, and support those inquiries with approaches to address the above considerations, demonstrated evidence of utilizing a type of a PMS.
Background of Performance Measurement Models Among SMEs

The utilization of formalized performance measurement models as a key means to address the *Criteria for Performance Excellence* is certainly not a new concept for the fields of business, manufacturing, health care, and service-oriented industries. However, in *Measuring Performance in Public and Nonprofit Organizations*, Poister, T.H. (2003) describes the recent history of performance measurement and performance monitoring for public and nonprofit organizations, and argues for the importance of clearly cataloguing and aligning performance results along multiple dimensions of performance to support strategic planning and ensure success in programmatic outcomes. However, shifts in accountability requirements, a need for continuous improvement, and the emerging technological environment have prompted SMEs like these to consider PMSs as key mechanisms for managing complexity and variation in performance (Garengo, Biazzo, & Bititci, 2005). Through an analysis of the varying models and theories of PMSs currently used, as well as an understanding of the conditions upon which these models have been deemed successful, SME leaders and practitioners of all fields may be better able to evaluate, select, and successfully implement critical attributes of effective PMSs.

A vast repertoire of both academic and professional literature exists that details the characteristics and uses of leading PMS models. Considering the reality that few organizations thrive through a singular focus on financial success factors, most models have been adapted to reflect a “balanced approach,” such as the Balanced Scorecard (BSC), the Performance Measurement Matrix, the Performance Pyramid System, the Integrated Performance Measurement System, the Performance Prism, and Organizational Performance Management (Bititci, Carrie, & McDevitt, 1997; Garengo et al., 2005; Kaplan & Norton, 1996; Neely, Adams, & Kennerley, 2002; Neely, Mills, Platts, Richards, Gregory, Bourne, & Kennerley, 2000). Of these approaches, the BSC, developed in the 1980s by Kaplan and Norton, has been by far the most frequently used and implemented among organizations of all types throughout the world, and has influenced the theory and practice of performance measurement in such a way that it is now affectionately known as the “traditional PMS” (Garengo et al., 2005). The BSC captures organizational performance across multiple perspectives – financial, customer, internal processes, and innovation and learning – and encompasses both leading and lagging performance indicators as measures of organizational health and maturity (Kaplan & Norton, 1996; Kaplan, Norton, Dorf, & Raitanen, 1996).

Attributes of Effective Performance Measurement Systems in SMEs

As the BSC and its derivatives have surfaced in SMEs, which include public service, nonprofit organizations, and educational institutions, many authors have begun to investigate how these models support the unique needs of these organizations challenged by efforts to balance the values and requirements of multiple stakeholder groups (Carman, 2007; Garengo et al., 2005; Gimzauskiene & Kloviene, 2007; Goddard & Mannion, 2004; Holzer & Kloby, 2005; Hudson, Smart, & Bourne, 2001; Kendrick, 2011; Kennerly, Neely, & Adams, 2003; Rantanen, Kulmala, Lonqvist, & Kuhansivu, 2007; and Wohlstetter, Datnow, & Park, 2008). Findings from multiple case and cross-sectional studies have confirmed the importance of key elements of the *Baldrige Criteria for Performance Excellence* framework by illustrating examples of how certain static attributes of PMSs have been implemented, many of which have positively contributed to other areas of organizational success. Some of these key attributes are as follows:

1) *what is measured* – the type of measures or data incorporated into the PMS (Carman, 2007; Hudson, Smart, and Bourne, 2001; Garengo et al., 2005; Gimzauskiene & Kloviene, 2007; Goddard & Mannion, 2004; Holzer & Kloby, 2005; Hudson, Smart, & Bourne, 2001; Kendrick, 2011; Kennerly et al., 2003; and Rantanen et al., 2007).

2) *who determines what is measured* – the methods used and participants involved to determine which performance measures should be included in the system (Carman, 2007;
3) **how data are presented** – the ease with which data are available for use and interpretation (Garengo et al., 2005; Holzer & Kloby, 2005; Kendrick, 2011; Rantanen et al., 2007; Turbide & Laurin, 2009); and

4) **how analysis is supported** – the extent to which support services are in place to build analytical capacity or technical services for relevant stakeholders (Carman, 2007; Garengo et al., 2005; Rantanen et al., 2007; and Wohlstetter et al., 2008).

**What is measured.** In empirical studies that report what SMEs, particularly PSOs measure, researchers tend to classify the set of measures either by the **type of data** selected or the **scope of measurement**. For example, to determine what data type are typically collected by community based organizations, Carman (2007) conducted interviews and surveys of 178 organizations and found that these organizations frequently collect and use information in the areas of program expenditures, counts of people, demographic information, activities/outputs, customer satisfaction, outcomes/results, narrative/anecdotal, best practices and benchmarks, and control/comparison data. Surprisingly, these types of measures do not vary much from those used by small corporations. In a similar study among private SME organizations, Hudson et al. (2001) found that small companies typically measure performance along the following “dimensions of performance”: quality, time, flexibility, finance, customer satisfaction, and human resources.

Other studies among public service and local government entities have reported that the type of organization plays a key role in the scope of the data collected and used. For example, in their research conducted among multiple public sectors (health care, schools, universities, local governments, police, social and community care services, etc.), Goddard and Mannion (2004) asked respondents to classify their respective organizations as either a “vertical” or “horizontal” organization. Organizations that were noted as “vertical” used measures that were central to the sector’s core business, reflect a national perspective using national comparisons, and use indicators that were amenable to quantification. Organizations with a more “horizontal” structure reported use of measures that were more in alignment with customer or client needs, emphasized issues of local relevance, and sought to incorporate a qualitative perspective into the determination of success. Kendrick (2011) and Rantanen et al. (2007) also corroborated this finding by reporting that many U.S. and international government organizations have ensured a proper scope of measurement by incorporating a balanced view to both external and internal focuses, national and local requirements, and quantitative and qualitative analyses.

**Who determines what is measured.** Among SME organizations there may be multiple stakeholder groups who have a vested interest in the success of a program or service, such as funders (for PSOs), local citizens, internal or external end-users, employees, regulatory agencies, or simply the manager of the responsible department or unit. Therefore, for these industries it may be difficult to determine what to measure, and who should be involved in the selection and improvement process (Rantanen et al., 2007). For example, results of multiple empirical studies conducted among PSOs indicated that there are two main groups who usually determined what was measured in the PMS – program funders (Carman, 2007; Turbide & Laurin, 2009; Gregory, 2007) and the users of the program results, specifically unit managers, budget officers, or executives (Hudson, Smart, & Bourne, 2001; Kendrick, 2011; Kennerly et al., 2003; Melkers & Willoughby, 2005). As these organizations continue to seek to meet the needs of varying stakeholders, additional practices of measurement-setting have been found in the research, such as the use of external benchmarking entities for national or international comparison (Goddard & Mannion, 2004), the use of locally determined measures that reflect the values of internal stakeholders (Gregory, 2007; Goddard & Mannion, 2004; Hudson et al., 2001; Rantanen et al., 2007), and a multitude of citizen involvement efforts (Holzer & Kloby, 2005; Melkers & Willoughby, 2005).
While the literature demonstrates that PSOs have attempted to involve the users of performance results in the selection of key performance indicators, the few studies found on the development of measurement systems in the educational industry indicate that this practice has not yet begun. For example, in an investigation of four high-performing K-12 school districts considered to have thriving performance measurement systems in place, Wohlstetter et al. (2008), found that although internal stakeholders such as principals and teachers were empowered to use data to inform site-based decisions, these personnel were not involved in the selection of critical measures of performance. A key implication from this finding is that “to diminish information asymmetry, systems need to solicit information from school-level educators on their needs, strengths, and weaknesses” (p. 255).

**How measures/data are presented.** Emerging capabilities of technology, information systems, and business intelligence have recently enhanced the possibilities for how data are collected, presented, and used by organizations of all types and sizes. However, Garengo et al. (2005) noted that because SMEs often lack the resources for the development of easy-to-use business intelligence tools for data visualization, most reporting is organized using informal means and is presented using tables and charts instead of graphs of trended results, leading to “the PMS not being used to achieve strategic objectives” (p.29). Kendrick (2011) asserted that as many ready-to-use, real-time, integrative tools are readily available for use, PSOs could better leverage their current analytical capabilities toward improved implementation of strategic initiatives.

While belief exists for the utilization of enterprise-wide tools, only one empirical study (Carman, 2007) was found where an analysis of the utilization of these systems was performed. In a study to determine the evaluation practices among community based programs in PSOs, Carman (2007) found that “the vast majority of community-based organizations still relied on written-data collection tools, which included intake forms, minutes from meetings, activity logs” (p.68), and other methods. More research may be needed to evaluate the extent to which the use of these tools increases the capacity of users of PMSs or the culture of improvement.

**How analysis is supported.** Beyond an immediate access to data and meaningful visualizations, multiple authors have described the importance of both technical support for analysis, as well as opportunities for capacity building among relevant participants (Carman, 2007; Gregory, 2007; Garengo et al., 2005; Rantanen et al., 2007; and Wohlstetter et al., 2008). However, best practices for how to ensure a proper level of technical support and capacity building have not yet surfaced as these authors have found both strengths and drawbacks to the various approaches used to date. Table 2 summarizes the key findings from three empirical works that evaluated the impact of an organization’s assigned level of responsibility for data collection, access, and analysis on the success of the performance measurement initiative. These findings demonstrate that both types of responsibility for data collection and interpretation – program/unit level and the use of internal specialists – have their drawbacks that inhibit successful use. Based upon these findings, theories have emerged for how to best build capacity to lessen the impact of these inhibitors on performance (see **Recommendation for Capacity Building** in Table 2).
Table 2
Summary of Findings for Analysis Support

<table>
<thead>
<tr>
<th>Study</th>
<th>Sector</th>
<th>Responsibility for Analysis</th>
<th>Strength or Drawback?</th>
<th>Impact on Success of PMS</th>
<th>Recommendations for Capacity Building</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carman, 2007</td>
<td>PSO</td>
<td>Program/unit level</td>
<td>Drawback</td>
<td>Over-reliance on experts leads to measures that are irrelevant, difficult to understand, or not user-friendly</td>
<td>Build evaluation capacity beyond common management practices</td>
</tr>
<tr>
<td>Rantanen et al., 2007</td>
<td>PSO</td>
<td>Internal specialists</td>
<td>Drawback</td>
<td>Use of technical specialists instead of sector specialists; Lack of personal ownership in data usage</td>
<td>Need for measurement expertise among all levels of workforce so participants are informed when offered opportunities for input</td>
</tr>
<tr>
<td>Wohlstetter, Datnow, &amp; Park, 2008</td>
<td>Edu. Program/unit level</td>
<td>Drawback, but challenges were addressed</td>
<td>Perception of overload among teachers; Lack of buy-in among staff with limited understanding of data usage</td>
<td>Provide direct access to data for all relevant personnel; Training in data management and use</td>
<td></td>
</tr>
</tbody>
</table>

The Relationship Between PMS Design and Culture

In addition to the attributes described above, a few studies have examined the impacts on and relationship between the design or implementation of the PMS and culture. While the definition of “culture” may have varied among these studies, one overarching theme emerged that demonstrated how an organization’s culture is related to the design of the PMS – that aggregate constructs of organizational typology are less critical to the successful implementation of a PMS (Eker & Eker, 2007; Gimzauskiene & Kloviene, 2007; Goddard & Manion, 2004; Gregory, 2007) than individual factors of perception of the use of the system. A brief discussion of each prong of this key theme is presented below.

The relationship between culture typology on uses of PMSs.

Very few authors have designed and conducted empirical studies that have specifically inquired about the relationship between an organization’s culture type and perception or successful use of its PMS. However, one literature review and three empirical studies were found that investigated the relationship between cultural classification and performance measurement use (Eker & Eker, 2007; Goddard & Manion, 2004; Gimzauskiene & Kloviene, 2007; and Gregory, 2007), but each of the empirical studies produced inconclusive results.

First, reflecting on the nature of organizations, Gregory’s (2007) review of the literature classified PSOs as reflecting either a “reductionist thinking” or “systems thinking” culture. The author described “reductionist thinking” as breaking a system down into small parts and then tightly controlling measurement using linear target setting approaches, and “systems thinking” as a focus on operation within a clearly-defined boundary of expectation for the parts of the system. Drawing expertise from these perspectives, Gregory (2007) described multiple adverse impacts of a reductionist culture on the success of performance measurement initiatives, which included the following:

1) a greater willingness to name and blame individuals for poor performance;
2) a greater use of rewards and punishments applied in an inequitable manner;
3) a demoralization and disengagement among key workers of these systems; and
4) a mistrust of leadership.

However, some of the theorized positive effects of a culture characterized by a systems model included the following:

1) a shift in perception that data serve a purpose for feedback over coercion;
2) a better understanding of causation, logic modeling, and system viability; and
3) a greater number of participants involved in the determination of key performance indicators, leading to increased engagement (Gregory, 2007).

While Gregory’s (2007) literature review theorized that a “systems thinking” culture leads to improvements in the perception and uses of PMSs among employees, the three empirical studies yielded inconclusive results.

First, as was stated before, Goddard and Manion’s (2004) classifications of horizontal, vertical, or a combination of both, were analyzed, and noted that vertical systems involve a tightly-controlled, top-down approach to management, and horizontal systems focus on improvement and engagement across the system. Investigating a mixture of PSOs in the United Kingdom, the authors discovered that most PSOs adopt measurement practices that reflect a blend of both models, regardless of the true nature of the organization involved, which in turn produced both positive and negative consequences in employee engagement with the PMS. Also, Gimzauskiene and Kloviene (2007) classified organizations according to four types – a human relations model, an open systems model, an internal process model, or the rational goal model. These authors found that an organization’s values/model did correlate to organizational interactivity around the PMS, but that “[implementation] of the performance measurement system depend[ed] on [the] organization’s ability to use the system and to incorporate generated information to the decision making process” (p. 32) – a factor which was not necessarily related to the cultural typology.

Finally, Eker and Eker (2007) evaluated Turkish manufacturing SMEs to determine the impact of two culture types – control values versus flexibility values – on four uses of a PMS, (monitoring, attention-focusing, strategic-decision making, and legitimizing). Based upon the results of this study, Eker and Eker (2007) concluded that “it is not possible to obtain the same results in all organizations in terms of using the aims and measures of PMSs,” and that “managers have to define organizational culture and design a convenient [system] to existing organizational culture, because if there is an incompatibility between the system and organizational culture, a designed system can never reach any success for business” (p. 69-70). Conclusions from each of these studies seemed to indicate that unique variation in organizational culture typology should also result in variation in the likelihood of successful implementation of the corresponding measurement system.

Factors of Perception of Successful Performance Measurement Systems

While empirical evidence that links an aggregate organizational typology with successful uses of a PMS is limited, findings from other studies (Carman, 2007; Holzer & Kloby, 2005; Garengo et al., 2005; Sanger, 2008; Turbide & Laurin, 2009; Eker & Eker, 2007; Hudson et al., 2001; Wohlstetter et al., 2008; Sanger, 2008; Sutherland, 2004), have noted how particular perceptual factors among individual employees related to effective use and implementation of the system, as well as other desirable outcomes. Of these key factors, the following three emerged with the strongest impact on successful implementation of the measurement system and other desirable outcomes (Carman, 2007; Holzer & Kloby, 2005): 1) perception of intended audience; 2) perception of policy design; and 3) perception of leadership engagement.

**Perception of intended audience.** Findings from multiple works demonstrated that the perception of the intended audience (i.e. the parties who the users of the PMS perceived would analyze the results of their performance), impacted whether or not employees were engaged with the PMS. Also, perception of the audience related to whether or not employees would actively support the overall values of the organization or would maintain high levels of productivity or quality of services. Table 3 reports the types of audiences noted by study, and the impact on the perception of those audiences on use of the PMS or other outcomes. A summary level analysis of these particular results indicated that negative associations or impacts were related to a perception of the presence of regulators (Carman, 2007; Holzer & Kloby, 2005), bureaucratic needs (Garengo et al., 2005; Sanger, 2008), and funders (Turbide &
Laurin, 2009), as the key audience members of the performance results. However, multiple positive impacts were noted when participants perceived that the ultimate audience of their performance was for bureaucracy when related to strategic decision making (Eker & Eker, 2007), one’s self for performance feedback (Holzer & Kloby, 2005; Hudson et al., 2001), the customer of the service (Turbide & Laurin, 2009), immediate supervisors (Wohlstetter et al., 2008), or measures that were balanced or locally defined (Sanger, 2008; Sutherland, 2004). Therefore, by embedding processes that facilitate attention toward strategic decision making, personal performance feedback, the customer’s needs, and the use of balanced or locally defined measures, an organization may be better able to increase employee engagement with its PMS.

Table 3  
Summary of Findings Demonstrating Impact of Perceived Audience

<table>
<thead>
<tr>
<th>Study</th>
<th>Sector</th>
<th>Perceived Audience</th>
<th>Impact(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carman, 2007</td>
<td>PSO</td>
<td>Regulators - compliance</td>
<td>Negative – Lack of engagement</td>
</tr>
<tr>
<td>Eker &amp; Eker, 2007</td>
<td>Bus.</td>
<td>Bureaucracy - strategic decision making or legitimate/prove</td>
<td>Positive – Strategic related to flexible type organization and legitimate related to control type organization</td>
</tr>
<tr>
<td>Garengo, Biazzo, &amp; Bititci, 2005</td>
<td>SME</td>
<td>Bureaucracy – too many measures</td>
<td>Negative – Obstacles to flexibility; Difficult to manage and demotivating</td>
</tr>
<tr>
<td>Gimzauskiene &amp; Klovienne, 2007</td>
<td>Bus.</td>
<td>Supervisors - organizational</td>
<td>Negative – Values incongruent with local perspectives altered priorities in decision making and resource allocation</td>
</tr>
<tr>
<td>Holzer &amp; Kloby, 2005</td>
<td>PSO</td>
<td>Regulators - accountability</td>
<td>Negative – Difficult when goals were too broadly defined</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Self - performance feedback</td>
<td>Positive – Increased productivity and capacity</td>
</tr>
<tr>
<td>Hudson, Smart, &amp; Bourne, 2001</td>
<td>SME</td>
<td>Self - performance feedback</td>
<td>Positive – Increased quality of services</td>
</tr>
<tr>
<td>Kendrick, 2011</td>
<td>PSO</td>
<td>Self - performance feedback</td>
<td>Positive – Sound management practices</td>
</tr>
<tr>
<td>Sanger, 2008</td>
<td>PSO</td>
<td>Bureaucracy - easily accessed measures</td>
<td>Negative – Increase in cost to report so much; Viewed as obstacles to avoid</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Comprehensive/balanced</td>
<td>Positive – Seen as meaningful; Increased commitment</td>
</tr>
<tr>
<td>Sutherland, 2004</td>
<td>Edu.</td>
<td>Self - locally defined measures</td>
<td>Positive – Shared purpose; Collaborative culture; Sense of urgency; Intrinsic motivation</td>
</tr>
<tr>
<td>Turbide &amp; Laurin, 2009</td>
<td>PSO</td>
<td>Customers - outcomes/customer focus</td>
<td>Positive – Increased perception of necessity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Funder - financials</td>
<td>Negative – Decreased perception of necessity</td>
</tr>
<tr>
<td>Wohlstetter, Datnow, &amp; Park, 2008</td>
<td>Edu.</td>
<td>Immediate supervisors - organizational</td>
<td>Positive – Increased “thirst” for data and involvement</td>
</tr>
</tbody>
</table>

Perception of policy design. Acting on the belief that the attributes of the PMS themselves play a less critical role in the success of the system than the perception of how the policies are designed to support the system, some authors have investigated specifically how the perception of the policies, or aspects of the design plan, impact the culture in which the system operates (Rantanen et al., 2007; Wohlstetter et al., 2008). Rantanen et al. (2007), based upon their evaluation of performance measurement among three different types of Finnish PSOs, found multiple issues that existed among these three organizations in the design of their respective PMS rollout plans. These issues led to the perception of overlapping projects, a resistance to change, frustration about a misalignment of standard units used in measures across organizational departments or functions, and in one case a manipulation of results. Some of the attributes of the poorly designed policies included the following:

1) a failure to clearly communicate the aims of the development of new measures;
2) a failure to communicate about persons responsible for the development of the measurement system; and
3) a failure to consider and account for possible adverse reactions to the system development process.

Wohlstetter et al. (2008), in their study of the four high performing school districts, reported results similar to those of Rantanen et al. (2007), but also reported three particular practices among properly designed PMS policies that led to desirable outcomes:
1. involving unit-specific employees in the process of establishing the policies surrounding the performance management system to decrease the likelihood of the creation of “divergent objectives” (p. 24-25);
2. soliciting needs for capacity building and information management systems from individuals from all levels of the organization; and
3. considering first participant willingness and capacity instead of forced use or required implementation; tailoring the rollout process to first include those participants from units with a greater level of willingness or competency for successful use.

Corroborating this finding in an educational setting, Sutherland’s (2004) results from a qualitative investigation of the Edison School Project confirmed the presence of institutional structures and supporting policies as critical mediating factors in efforts to develop a successful culture of improvement and evaluation practices. Data obtained from interviews revealed that multiple structures had been put in place prior to the implementation of the PMS, which included the use of a systematic data collection process, frequent training and opportunities for learning, weekly meetings for the discussion of issues that drive results for each team/unit, a public display of the results of individual teams or units, and opportunities for peer observation, reflection, and feedback among team members.

Understanding that the development of policies and procedures surrounding a PMS is an evolutionary process, and that measurement systems have a tendency to change over time, Kennerly et al., (2003) developed an evaluative framework, called the “Evolutionary Capabilities Maturity Model,” which can be used by organizations as a self-assessment of its people, processes, and culture in its ability to reflect, modify, and deploy a PMS. After conducting an in-depth case study of a small corporation utilizing this capability model, the authors concluded that “if new measurement systems fail to change or evolve as the organization’s circumstances and strategies change, these new measurement systems will become as inappropriate as the entirely financially focused traditional measurement systems are currently considered,” and that “it is essential that the necessary capabilities are developed to enable evolution and incremental change over time” (p. 43). Therefore, by conducting a full assessment of an organization’s standing policies, capabilities, communication mechanisms, and employee engagement and inclusion, an organization may be better able to implement and sustain quality measurement system practices over time.

**Perception of leadership engagement.** Surveys and case studies conducted to identify the critical factors of a positive performance measurement culture have affirmed the impact of the organizational or unit level leader on the success of measurement systems. Multiple characteristics of leaders, both characteristics that are desirable and undesirable, have been identified among these studies, and are briefly summarized in Table 4. To facilitate further analysis, Table 4 reports the findings from these studies by the type of leader surveyed studied, which have been coded as either senior leaders (leaders who act as chief decision makers or executives of the organization) or as manager/unit/campus level leaders (those with leadership roles within a unit of the organization). The coincidental relationship between “desirable” and “undesirable” characteristics to leadership type notwithstanding, the findings indicated the importance of considering the following conditions to implementation success:

1) senior leaders must particularly attend to the design of the PMS, assume high levels of self-esteem in their choices, reward sound management practices in addition to positive
business results, and remain close to critical information to inform better planning (Eker & Eker, 2007; Janvier-James, 2011; Kendrick, 2011; Sutherland, 2004; and Wohlstetter et al., 2008); and

2) manager or unit level leaders must maintain the managerial capacity and willingness to support the PMS (Garengo et al., 2005; Melkers & Willoughby, 2005; and Rantanen et al., 2007).

Table 4
Leadership Characteristics by Leader Type and Sector

<table>
<thead>
<tr>
<th>Desirable Leadership Characteristics</th>
<th>Type*</th>
<th>Study (Sector**)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Properly designing the PMS to match the culture or critical business needs ensures successful implementation</td>
<td>SL</td>
<td>Eker &amp; Eker, 2007 (SME)</td>
</tr>
<tr>
<td>External locus of control and high self-esteem associated with a use of more diverse performance measures</td>
<td>SL</td>
<td>Janvier-James, 2011 (SME)</td>
</tr>
<tr>
<td>Willingness to reward individuals for not only results but for sound management practices led to less dishonest in data reporting</td>
<td>SL</td>
<td>Kendrick, 2011 (PSO)</td>
</tr>
<tr>
<td>Clearly defining the role of the leader in performance measurement and continual communication of information led to increased organizational learning</td>
<td>CL</td>
<td>Sutherland, 2004 (ED)</td>
</tr>
<tr>
<td>Use of “bottom-up” information collection to identify root causes of poor performance reduced “information asymmetry” and led to better planning</td>
<td>CL</td>
<td>Wohlstetter et al., 2008 (ED)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Undesirable Leadership Characteristics</th>
<th>Type*</th>
<th>Study (Sector**)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of managerial capacity in general identified as a key obstacle to the successful implementation and use of the PMS</td>
<td>UL</td>
<td>Garengo et al., 2005 (SME)</td>
</tr>
<tr>
<td>Lack of leadership support of the PMS related to lack of transparency (willingness to report information) and density (willingness to use multiple measures of performance)</td>
<td>UL</td>
<td>Melkers &amp; Willoughby, 2005 (PSO)</td>
</tr>
<tr>
<td>Managers chosen to lead due to technical expertise over management/ measurement capabilities led to lower employee competence, measuring of wrong processes, and poorly designed incentives</td>
<td>UL</td>
<td>Rantanen et al., 2007 (PSO)</td>
</tr>
</tbody>
</table>

*Type of Leader Key: SL – Senior leaders; UL – Manager/unit level leaders; CL – Campus leaders
**Sector Key: SME – Small-to-medium enterprises; PSO – Public service organizations; ED – Education

Other Cultural Issues that Inhibit Successful Use of PMSs

The attributes of effective PMSs and their relationships to culture presented above demonstrate characteristics of systems that are already established or are developing among PSOs, SMEs, and educational institutions. However, for many organizations which have not yet begun the journey toward the development of formalized, enterprise-wide measurement systems, little information has been obtained at this time. It may be necessary for some organizations to evaluate issues that are contributing to complete non-use. For example, to determine the possible causes for the phenomenon of non-use, Marc, Peljhan, Ponikvar, Sobota, & Tekavcic (2010) conducted a study among Slovenian firms of all sizes and sectors to examine the effect of company size, knowledge about management tools, market position, and business objectives on the utilization of integrated performance measurement systems (IPMSs). The results from this investigation were striking, and corroborated the findings from the other studies:

“Companies are more likely to use IPMS if they are larger, operate in foreign markets, use more management tools, and their main business objective is following the strategy; companies are less likely to use IPMS if they operate in public services and other industries” (p. 68);

“The problem faced by [public services and other] companies is mostly related to lack of knowledge about contemporary management tools and in particular about BSC: 17.4 percent of them are not familiar with any of the management tools, 49 percent do not use any of these tools, and 52 percent are not familiar with BSC, which are the highest shares among all industry groups” (p. 73).

Assuming generalizability to other countries and/or organizational types, these findings
Implications

While some major themes have surfaced from initial studies into the key attributes of effective PMSs among SMEs, further learning for both organizational practitioners and academic researchers is still necessary to deepen understanding of successful design of these systems and their connections to the culture in which the systems are situated.

**Implications for organizational leaders.** Both an attention toward the static attributes of a PMS (what is measured, who is involved in selecting measures, how data are presented, and how analysis is supported) and the shifting cultural factors that affect the success of the system initiative (perception of audience, perception of policy design, and perception of leadership engagement), may serve as relevant topics of discussion for organizational leaders seeking to develop and realize their measurement capabilities. Opportunities exist for leaders of all organizations to utilize the findings from the multiple empirical studies to begin internal conversations about readiness for PMSs, or the next steps in the deployment journey. Leaders may consider the challenges of the organizations described in the literature that are similar to their own, investigate the responses to these challenges as found in multiple case studies, and develop preventative approaches to prepare for them. Some key questions to support reflection may include the following:

1) How does the organization determine what measures will be included in the PMS? Who is involved in the selection of these key measures? How does the organization incorporate the voice of each of its relevant stakeholder groups in measurement selection, use, and evaluation?

2) How does the organization develop the capacity of its employees, specifically its leaders, in the current measurement models and tools, practices in the selection, use, and integration of key measures, and opportunities for engagement around the results of these measures?

3) How does the organization support positive cultural factors that affect or are affected by the use of the PMS? How does the organization facilitate attention toward the engagement of the audience of the performance results, positive perception of the design of policies of use of the PMS, and perception of committed leaders?

4) How does the organization determine its level of readiness and opportunities for improvement in the design of its PMS?

**Implications for future research in the areas of culture and PMSs.** A body of knowledge is beginning to emerge in best practices of PMSs among SME organizations, but few empirical studies other than case studies exist in the literature at this time (Kendrick, 2011; Melkers & Willoughby, 2005). Conclusions from the authors of multiple empirical studies conducted to date indicated that next steps in the research should involve some level of replication of previous research as a means to confirm the existence of the attributes of effective PMSs for other organizations or geographic locations (Bititci, Mendibil, Nudurupati, Garengo, & Turner, 2006; Eker & Eker, 2007; Holzer & Kloby, 2005; Marc, et al., 2010; Melkers & Willoughby, 2005; Sutherland, 2004), or about the specific cultural elements that impact the success of these systems (Garengo et al., 2005; Janvier-James, 2011; Marc, et al., 2010; Rantanen et al., 2007; Sanger, 2008; Turbite & Laurin, 2009). Findings from these studies may also be used to develop a more comprehensive framework of best practices for use (Sutherland, 2004).
Goddard and Mannion (2004) have noted that “those looking for a simple prescription for the design of performance measurement systems will be disappointed,” and that “a one-size-fits-all approach may not be optimal” (p. 92). This perspective may indicate that the condition or status of an organization’s PMS would be relative to existing conditions or cultural factors not found in the literature as determinants of successful implementation of these systems. Additionally, further research may be needed into the level of measurement maturity, such as what a replication of the work of Kennerly et al., (2003) would afford. Therefore, future research may also include an investigation into the constructs of data readiness, or the pre-requisites for the successful implementation and utilization of PMSs.

Conclusions
The purpose of this review of the literature was twofold – to determine the key attributes of effective PMSs among SMEs in order to glean lessons learned for effective PMS design and implementation, and to investigate the effect of these attributes on culture. Empirical studies revealed that the attributes most critical to the successful implementation of measurement systems involved an attention to what is measured, who determines what is measured, how data or measures are presented, and how analysis is supported. Multiple studies also indicated that regardless of the cultural typology used to classify an organization, specific cultural factors from among the organization’s individual employees play a major role in the success of any measurement initiative. Further research may be needed in the areas of the determinants of successful and non-successful implementations, as well as in the work of organizational maturity models for performance measurement and improvement.
References


