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On the Interplay between Strategic Performance and Managerial Accounting
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ON THE INTERPLAY BETWEEN STRATEGIC PERFORMANCE AND MANAGERIAL ACCOUNTING

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ABSTRACT

Purpose – *This study investigates the interplay between strategic performance measurement and management accounting to gain a deeper understanding of how strategic measures of performance evolve with the managerial accounting practices.*

Design/Methodology/Approach – *The study explored the performance measures used at a bank focused on the development and sustainability initiatives in Africa. Thirty-two semistructured interviews were conducted with directors, managers, and analysts from nine different categories of job families.*

Findings – *Analysis shows that managers assimilate a comprehensive, multifaceted measurement system to understand the creation and delivery of sustainable value. The results show that the managerial accounting practices adapt to incorporate an integrated set of performance measures that afford sustainable value to the stakeholders. The findings provide*

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rich insights into how the managers adapt their information assimilation practices to the changing demands of the different stakeholders and adopt practices which innovate measures of performance that are aligned to the strategic goals. Finally, the findings illustrate that the interplay between strategic performance and managerial accounting practices has the potential to improve or inhibit sustainable development.

Originality/Value – *Little is known about how performance measures evolve, and how they interplay with the managerial accounting practices within organizations. This study reveals that the interplay of strategic performance measurement and managerial accounting can only be understood in the confluence of organizational change and sustainability. While acknowledging the need to embrace change and sustainability simultaneously, the study offers insights into the dynamics of change – the duality of emergent managerial accounting practices and the evolution of strategic performance measurement systems.*

Keywords: Strategic performance measurement; managerial accounting practices; organizational change; strategic management accounting; sustainable development; key performance indicators

INTRODUCTION

The role of managerial accountants as organizational actors in the creation and dissemination of information for the long-term, strategic planning is widely acknowledged in research and practice. While information generated from the recording of financial transactions are primarily used for reporting financial information to the stakeholders and regulators, data gathered from an organization's operations, processes, and activities are compiled in the creation of analytical information for operational and process effectiveness. Growing use of such analytical information for planning and control in organizations led to the adoption of strategic cost management information for strategic performance management (Brands & Holtzblatt, 2015; Shank & Govindarajan, 1993). Despite the growing popularity of analytical data for strategic performance management in organizations, widespread adoption of a comprehensive performance management framework remains tentative.

The interplay between strategic performance measurement and managerial accounting has been evolving not only with the managerial accounting practices but also with the dynamic organizational contexts within which

these practices are situated (Greenley, 1994). Researchers have long argued that the use of managerial accounting information for the strategic management of performance is influenced by a combination of organizational, contextual, political, and environmental variables (Dent, 1991; Ezzamel, Lilley, & Willmott, 1997; Zenita, Sari, Anugerah, & Said, 2015). Some studies (e.g., Aranda & Arellano, 2010) claim that financial systems impede strategic performance that they do not provide information to improve competitiveness of firms in a globally connected world. However, Johnson (1989) argued that in order for a firm to understand profitability, it must understand the sources of its sustainable competitive advantage, such as quality, reliability, and flexibility. In essence, researchers conclude that more the alignment between management accounting practices adopted by an organization and its strategic objectives, the greater the organization's business performance (e.g., Abdel Al & McLellan, 2013).

As most measures of strategic performance are traditionally outside the domain of accounting practice, Shank (2006) argued that strategic management accounting (SMA) practices had to evolve in conjunction with the strategic priorities of an organization for sustainable competitive advantage. To further understand how the management accounting practices adapt in this strategic context, this study explores how strategic measures of performance evolve with the practices of managerial accounting within organizations.

Measuring Performance and Performance Measures

Recent research (e.g., Chenhall, 2005; Chenhall & Langfield-Smith, 2007; Chenhall & Moers, 2015) suggests that to improve and sustain performance, organizations must align their performance measurement system to their strategic priorities. Researchers argue that strategic planning and effective implementation of strategies are largely dependent on the dimensions of performance measures (Ittner, Larcker, & Randall, 2003, Van der Stede, Chow, & Lin, 2006) and attributes of such measures (Malina & Selto, 2004). Prior research also suggests that different forms of information on organizational performance influence the development and implementation of strategic priorities of the firm (Govindarajan & Gupta, 1985; Lord, 1996; Wu, Straub, & Liang, 2015). In this respect, some scholars have also argued that SMA information provides financial and nonfinancial information for the different dimensions of organizational performance (Chenhall, 1997; Ittner & Larcker, 1997; Theriou, 2015). Simmonds (1982), for instance, had shown that SMA not only provides analytical information on costs and activities but also offers

insights into a firm's competitive positioning and pricing strategies. Thus, the changing managerial accounting practices, through developments such as SMA and the emerging tools and technologies for measuring performance, can provide in-depth and integrated perspectives on the performance of an organization.

Anderson (2007) argues that a comprehensive performance management framework facilitates the integration of drivers of performance concerned with strategic priorities and a unified set of measures of performance that enable the communication of strategic priorities of a firm. Such a framework can also ensure the allocation of resources necessary to achieve the strategic priorities. In addition, linkages between a firm's strategic priorities, drivers of performance, target measures, and benchmarks elucidate the cause and effect relationships between strategic priorities and the core strategic activities of the firm (Ittner et al., 2003; Simons, 2000). In this regard, Melnyk, Bititci, Platts, Tobias, and Andersen (2014) show that in order to be effective, a firm's strategy must be well aligned with any revisions of its performance measures. As such, managerial accounting practices, such as SMA, help to elicit measures of performance that impact strategic and operational effectiveness of a firm and the demands placed on the firm by the external entities such as competitors, customers, and suppliers. Further, Palmer (1992) asserted that managerial accounting information can help identify an organization's strategic competencies, and the integration of associated performance measures, can improve competitive positioning of the firm. Thus, managerial accounting practices are vital to the understanding of the strategic performance management of a firm.

Recent research studies also highlight the importance of integrating nonfinancial performance measures, with financial performance measures (Silvi, Bartolini, Raffoni, & Visani, 2015). As mentioned earlier, nonfinancial performance measures that address multiple dimensions of a firm's competencies (referred in this study as multidimensional performance measures), can supplement financial performance measures to more comprehensively capture the overall performance characteristics of a firm. For example, researchers Turcu and Turturea (2015) and Kennerly and Neely (2003) argue that financial performance measures alone are insufficient for organizations to compete in contemporary settings, where sustainable competitive advantage is essential for firms to succeed. Ittner et al. (2003) also argued that a multidimensional performance measurement practice has evolved to capture key strategic performance dimensions, such as the customer and employee perspectives discussed in the balanced scorecard (BSC) (Kaplan & Norton, 1992). While the proponents of structured performance management systems

such as the BSC stress the importance of multiple performance dimensions (Fahy, 2001), management scholars (e.g., Davis, Dibrell, & Janz, 2002) claim that information technology can also provide another dimension in the relationship between an organization's performance measures and its strategies for sustainable competitive advantage. However, it is important to note that Jakobsen (2017), along with Shank (1989), and Miller and Friesen (1982) argue that the role of specific nonfinancial performance measures is still unclear about how they supplement financial performance measures for a firm to be effective in competing and sustaining its competitive advantage.

Performance Measures and Management Accounting Practices

As the foregoing review shows, the value of management accounting information for strategic performance measurement has been acknowledged extensively (e.g., Artz, Homburg, & Rajab, 2012; Kennerly & Neely, 2003; Nanni, Dixon, & Vollman, 1992; Wu et al., 2015). However, scholars have argued that management accounting information is often focused on profitability and therefore also focused on the products and services of a firm (e.g., Eccles, 1991). On the other hand, Kennerly and Neely (2003), along with Nanni et al. (1992), argue that in order to provide sustainable competitive advantage to organizations, their strategic performance measures must focus on the linkages between the various processes that are essential in the development and implementation of strategies. In this way, they assert that managerial accounting information would help integrate processes focused on a firm's strategic priorities for sustaining organizational change. Further, Bhimani and Langfield-Smith (2007) suggest that the interplay between a firm's accounting practices and strategic actions for sustainability needs to be understood in the context of the complexity of the firm's uncertainties and its social processes. However, several studies (Abernethy, Horne, Lillis, Malina, & Selto, 2005; Adams, 2004; Barter & Bebbington, 2009; Epstein & Widener, 2011; Thomas, 2016) have shown that despite the use of multidimensional performance management systems of accounting to measure performance, measurement remains a complex task due to the uncertainties inherent in the outcomes that are measured. Thus, the interplay between managerial accounting practices and strategic performance measurement remains unclear.

Despite the research focus and the recent research evidence to explain the role of managerial accounting in the creation and dissemination of information for strategic planning and strategic performance measurement, little is known about how the measures of performance for performance

management evolve, and how they relate to the managerial accounting practices within organizations. This study investigates how the strategic measures of performance evolve with the practices of managerial accounting for sustainable development. In the context of sustainable development, the study addresses two specific research questions: how do the measures of performance evolve and how do they relate to the managerial accounting practices of an organization?

RESEARCH METHOD

To gain an in-depth understanding of how the measures of performance evolve, and how such performance measures relate to the managerial accounting practices, the research study had to be carried out in the field so that individual user experiences can be properly understood. Interpretive approach (Walsham, 1995) was chosen to conceptualize and explain such an understanding, as interpretivists view the world as subjective and that exists only through human action. An interpretive study will also illuminate subjective experience of individuals within the firm who use the performance measures in a sustainable development context.

The study explored the performance measures used at a development bank focused on the development and sustainability initiatives in Africa. Development Bank, Africa (DBA) is a unique organization, which has been working to improve the livelihood and development of communities in the African continent for over 40 years. The research setting therefore allowed for an in-depth understanding of the key initiatives of DBA, and their outcomes. Thirty-two (32) semistructured interviews lasting 30 minutes each were conducted with employees (directors, managers, and analysts) responsible for managerial accounting, performance measurement and strategic planning functions of the organization.

Interviews were held with employees from nine different categories of job families, from programming and budgets (managerial accounting), performance management and strategic planning divisions, as shown in Table 1. Although these employees were in various roles and performed different functions, they worked toward the same development goals and initiatives. As such they recalled and commented on a range of issues such as working in DBA's strategic planning processes and using managerial accounting information such as budgets, dashboards, and key performance indicators for performance measurement.

Table 1. DBA Interviewees and Their Roles.

DBA		
Number of Interviewees	Unique Position Held	Responsibility
1	Director	Programming and budgets
2	Regional integration manager	Regional integration
5	Portfolio analyst	Delivery and performance management
4	Integration economist	Regional integration
5	Policy economist	Regional development
4	Policy officer	Safeguarding regional projects
3	Policy analyst	COO's office
6	Program analyst	Corporate strategy and policy
2	Program officer	Corporate strategy and policy

As the interviews were semistructured, all interviewees with the similar or different roles were asked the same set of questions initially so as to guide the discussion and responses. As the interviewees had different roles and job functions, it was important to steer the discussion to focus on the research issues to gain deeper understanding of how the performance measures evolved at DBA and how they relate to the managerial accounting practices.

In addition to the semistructured interviews, documents on performance measures, performance management tools, and systems such as scorecards and the strategic planning processes adopted by DBA, including changes due to reorganizations and restructuring were reviewed. These documents were read and re-read to detect patterns that verify information gathered from the interviews, and the transcripts of which were considered as "thick descriptions" (Geerts, 1973) that render more in-depth meaning and insights.

Data Analysis

To make sense of the data, an initial set of codes was developed to categorize interview data, and let further codes emerge progressively during the interviews (Miles & Huberman, 1994). This approach ensured that the data are not only sensitized but also rooted empirically in the development of a theoretical interpretation of the interplay between strategic performance measurement and managerial accounting practices for sustainable development. Based on theoretical concepts identified during this analysis, a qualitative data analysis tool, N-Vivo, was used to verify and confirm pre-established patterns and themes emerging from the data. Qualitative data analysis of interview notes

and transcripts was performed to identify specific themes and to look for patterns (Miles & Huberman, 1994).

As this research explored interplay between strategic performance measurement and managerial accounting practices, the study draws on the organizational change perspective advanced by Sturdy and Grey (2003) which is based on the notion that "it is imperative that today's managers embrace stability and learn to manage continuity if they want to survive" (p. 651), where the authors argue that change and continuity coexist and that they are subjective social constructions. To guide our analysis of the interview data, we use change and continuity as conceptual lenses (Walsham, 1995) as these link the core concepts of the study to the data. The approach prescribed by Miles and Huberman (1994) is then used to assign *Descriptive, Interpretive, and Pattern Codes* to the categorized interview data. *Descriptive Codes* were used to assign one of either change or continuity (classes of phenomena) to a passage of text. Descriptive codes were then assigned, which simply describe the interviewees' conceptualizations and interpretations of their intersubjective experiences. *Interpretive Codes* were then assigned to interpret segments of text based on the understanding of interviewees' experiences. Once the descriptive and interpretive codes were assigned, *Pattern Codes* were used to infer and explain segments of text. It is important to note that some segments of texts were assigned to one or more of the descriptive codes, interpretive codes, and pattern codes, as they revealed more meaning than others.

Data Display

Data display is a process of assembling codes, looking for relationships between them and displaying data in tables and diagrams to enable verification of the interrelationships and themes emerging from the data (Miles & Huberman, 1994). The process of data display follows data reduction to provide an organized, compressed assembly of information that permits conclusion drawing. A display is essentially a new way of arranging and thinking about textual data, and these can include graphs, charts, networks, and matrices. Data displays in the context of this research study involved thinking about the interrelationships between the codes and categories of interview data. This then meant bringing together two or more categories of codes to examine their interrelationships. This process allowed us to discern systematic interrelationships and patterns to look for higher-order themes. Therefore, the process of data display allowed for the discovery of systematic patterns that emerged from the data beyond the initial process of data reduction.

Table 2. Concept Coding Matrix.

	Strategic Performance Measures	Managerial Accounting Practices
Change	62	47
Continuity	88	129

In addition to discerning the interrelationships between categories of codes, some two-dimensional matrices were examined to look for themes. A matrix representation below shows the number of matrix coding references for *change* and *continuity* along with *strategic performance measures* and *managerial accounting practices* as higher-order concepts in a two dimensional matrix.

Table 2 shows a two by two (2×2) node matrix, which is used to cross-tabulate how strategic performance measures and managerial accounting practices are related to change and continuity. Each cell in the matrix represents a node containing the content coded (transcribed interview text using the qualitative data analysis tool, N-Vivo) at the intersection of the row and the column. For example, Change is associated more with the strategic performance measures (62 coding references) than with the management accounting practices (47 coding references), and continuity is associated more with management accounting practices (129 coding references) than with the strategic performance measures (88 coding references).

This conceptual matrix contains the number of coding references for each of the categories chosen. The cells then display the correlations between the identified concepts, allowing for verifications with the literature, and for drawing conclusions from the analysis. This conceptual matrix suggests that in times of organizational change, measures of strategic performance enable changes in managerial accounting practices; in addition, correlations with "continuity" implies that certain measures of performance become used in the ongoing managerial accounting practices.

CASE DESCRIPTION AND ANALYSIS

Widely regarded and respected by all African nations, DBA is engaged in promoting economic development and social progress across all regions of the African continent. DBA's mission is to combat poverty and achieve sustainable economic growth of its regional member countries by investing in

private and public capital projects. DBA, therefore, finances development projects in education, health, transport, telecommunications, and other public utility such as the renewable and solar energy programs across the region. The organization presently employs 1,500 people in its 57 divisions, which are managed within 30 departments under 6 major organizational units of DBA. Sustainable development is at the heart of every project that DBA is engaged in, as the principal objective is to enhance the living conditions of the millions of Africans across the region. For example, Africa's solar energy potential is virtually untapped; however, only 4% of sub-Saharan Africa's cropland is irrigated as management of water resources is critical. To address this issue, DBA makes targeted investments in sustainable development projects such as solar-powered drip irrigation systems to access and conserve the scant water resources in the sub-Saharan Africa (Burney, Woltering, Burke, Naylor, & Pasternak, 2010). For the purposes of this study, we interviewed participants on DBA's African Development Effectiveness Review (ADER) with respect to their results measurement framework (RMF).

Context for the Study

DBA measures and tracks performance on its development initiatives through a program known as the ADER which provides the context for this study and opportunities for further analysis. ADER enables DBA to continuously improve upon its operations on its sustainable development projects and programs. ADER constitutes a variety of management tools and systems, within which the RMF is designed to integrate around 100 performance measures that monitor DBA's efficiency and effectiveness in delivering sustainable development initiatives.

We reviewed RMF for the period 2013–2016 comprehensively and identified that it consists of four distinct, yet interconnected levels on which performance is measured:

Level 1: Development progress in Africa.
Level 2: DBA's contribution to development in Africa.
Level 3: DBA's operational performance.
Level 4: DBA's organizational efficiency.

DBA measures its efficiency and effectiveness not by the number of projects that it completes or by how much it spends on these development projects. The focus is rather on the sustainable differences the programs make

along the core dimensions of success such as the outcomes achieved based on their strategies. DBA recognizes that while economic growth is essential, effective development means empowering people through better education, health, and access to essential public resources. As such, the performance measurement framework had to take account of the complex, and changing nature of development across the region.

The changing development landscape coupled with the need to continually improve operations drive DBA to review and revisit its RMF every year. In addition, DBA has implemented quality standards throughout the operations and processes associated with its projects to ensure effectiveness in operations, and compliance with DBA's policies. We interviewed policy and program analysts, as well as officers who were involved in the development and implementation of strategic development initiatives for DBA to get their insights into the processes around the continuous improvement of the RMF. We also interviewed economists, directors, and analysts to gain an in-depth understanding of the measures of performance and how they related to the process of change in the managerial accounting practices within the Programming and Budgets and Delivery and Performance Management units of DBA.

Case Analysis

First, our analysis focused on the interviewees' experiences with and perceptions of the inherent complexities of the RMF and then on the ways in which the measures of performance evolved over the course of time. It was important to gain a deeper understanding of the linkages between the levels on which the measures of performance were constructed as when those linkages changed, the performance measure had to be revised, or changed. For instance, Table 3 shows the initial state structure of the RMF as described in the strategy documents of DBA.

The structure of RMF shows that there is an outward focus from Level 4 to Level 1, where Level 4 and Level 3 measures focus on DBA's internal competencies, whereas Level 2 measures focus on outbound, external competencies to measure Level 1 overall impact. Level 4 and Level 3 measure the strength of the foundation to deliver outcomes at Levels 2 and 1.

Even though the goals within the RMF cannot be measured exclusively by a set of measures, as there are numerous contributing factors, DBA tracks progress on each goal using a set of performance indicators. For example, Level 1 tracks development progress on two of DBA's strategic goals;

Table 3. Structure of the RMF.

LEVEL 1: WHAT DEVELOPMENT PROGRESS IS AFRICA MAKING?
1.1 Inclusive growth
1.2 Transitioning to green growth
LEVEL 2: HOW WELL IS DBA CONTRIBUTING TO DEVELOPMENT IN AFRICA?
2.1 Infrastructure development
2.2 Regional integration
2.3 Private sector development
2.4 Skills and technology
2.5 Governance and accountability
LEVEL 3: IS DBA MANAGING ITS OPERATIONS EFFECTIVELY?
3.1 Strengthening results at country level
3.2 Delivering effective and timely operations
3.3 Designing gender- and climate-informed operations
LEVEL 4: IS DBA MANAGING ITSELF EFFICIENTLY?
4.1 Decentralization: Moving closer to our clients
4.2 Human resources: Engaging and mobilizing staff
4.3 Value for money: Improving cost-efficiency

inclusive growth and the transition toward green growth using a set of 32 performance indicators. For instance, inclusive growth is measured using its dimensions such as economic inclusion, spatial inclusion, social inclusion, and political inclusion as performance indicators. Similarly, Level 2 measures of DBA's contribution to advancing sustainable development using a set of 36 indicators along the dimensions such as infrastructure, regional integration, private sector development, skills and technology, and governance and accountability.

Director of Programming and budgeting noted:

> It is hard to attribute overall development results to the Bank's work, as development progress depends on a number of factors which combine various decisions made by governments, other development organizations and households.

The Director of Programming and Budgets further explained:

> We had a lot of discussion when choosing the indicators for the RMF; we chose the ones that better reflect the Bank's strategic priorities, and that look at our sustainable development priorities from different dimensions, and of course the ones that provide a good picture of our ability to deliver value for money.

This comment shows that the process of determining which measures to track is very much dependent on the strategic planning priorities. Moreover, the choice of measures also depends on the lucidity and efficacy of data available to DBA. It was critical for DBA to keep ahead with changes in

accounting practices as better management accounting strengthened linkages between resources deployed and impact made. A portfolio analyst with the delivery and performance management unit of DBA noted:

> We continue to streamline our strategic, operational and budgetary processes to ensure that we deliver value, weighing time and resource costs…and we track costs related to sustainable development projects to look for cost-efficiencies, while maintaining the standards of quality for the output.

This comment shows that the DBA's measures on economy, efficiency, and effectiveness in their operations evolve with the management accounting practices stemming from the organizational changes taking place. The review of the documentations supporting RMF also provided further evidence of the practices in management accounting with regards to the strategic planning which will be completed from 2013 to 2022.

Interview with the portfolio analyst shows that as more initiatives are undertaken by DBA toward achieving the goals set within the RMF, naturally there are more changes necessary to systems and practices. She explained:

> As strategic performance measures related to new initiatives are tracked – for example, for greater cost-efficiency in delivering outputs and outcomes etc., DBA is committed to streamlining its operational and budgetary processes – better cost accounting strengthens the links between resources and results

This comment clearly shows the interplay between strategic performance measurement and managerial accounting practices, as performance measures for new initiatives relates to changes to managerial cost accounting practices.

Comprised of over 100 performance measures, RMF was seen as a performance management tool which enables DBA to meet its sustainable development goals, as RMF when continually reviewed and updated, provides evidence of DBA's core competencies and areas for improvements across the regions of Africa.

Regional Integration Manager commented on RMF and how the measures evolved:

> Of course strategies drive our direction, but measuring our performance on meeting development goals is such a complex undertaking – this tool full of measures at interconnected levels, allows us to chart a course of action that helps with the most efficient and effective implementation of strategy.

The comment not only reveals the value of RMF in terms of how it evolves along with strategies but also shows how performance is measured at the different levels of the chain showing value for money.

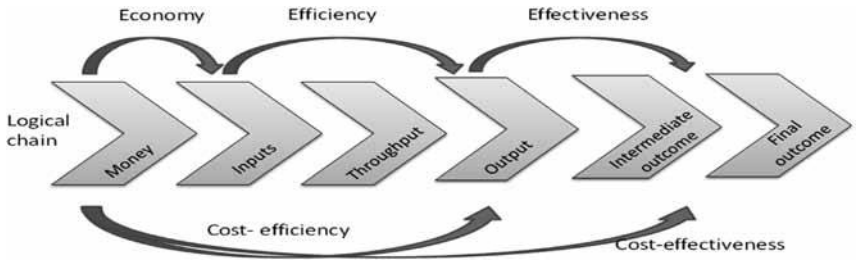

Fig. 1. Performance Measured at Different levels of the Value for Money Chain.

Fig. 1 (conceptualized from Boardman, Greenberg, Vining, & Weimer, 2011) is used here to show that following DBA's strategic focus and priorities at Level 1 and Level 2, Level 3 and Level 4 focus on operational performance and organizational efficiency. In this way, DBA's strategic performance measurement system focuses on the economy, efficiency and effectiveness as the primary dimensions of performance. In addition, DBA's management and cost accounting practices concern with measures on cost-efficiencies and effectiveness, where there is more focus on outcomes rather than on outputs. Such an intricate interplay between the strategic performance measurement system and management accounting practices is evident from our analysis.

DBA focuses on deploying resources in the most efficient and effective manner to ensure value for money internally and externally in each sustainable development project it is engaged in. To ensure internal, organizational efficiency, and effectiveness, DBA ensures that performance measures at Level 4 and Level 3 are focused on operational economies and efficiencies consistent with the value chain in Fig. 1. For instance, the Level 4 comprises of measures that track costs of operations which reflect a stronger emphasis on cost-effectiveness. At Level 3, DBA focuses on how results are achieved, rather than what results are achieved, by focusing on quality of operations. Measures at this level then track and reflect on the quality of operations, with specific emphasis on speed and quality consistent with DBA's strategies.

Our interviews with Policy Economists and Officers revealed the extent to which changes in managerial accounting systems and practices played a role in how performance measures evolved with the organizational changes. A Policy Economist noted:

> over the past year we've seen several changes..we have reduced time and cost of document processing with the use of technology solutions, and revised policies to increase our capacity to disburse loans through the use of systems that reduced unnecessary delays.

Our reviews of documentation on these changes revealed that DBA undertook a comprehensive review to revise policies, procedures, and practices to make sure they changed to accommodate the emerging needs of its borrowers. We also evidenced that the performance monitoring and measurement framework was adapted in response to the management team's reviews of the budget and work program from 2014 to 2016.

In our interviews with Integration Economists, we found that a more improved cost accounting system was also in order to clearly understand costs of DBA's programs, products, and services.

Our reviews of Level 2 and Level 1 measures of performance show that they are focused on outcomes, not outputs. The focus, therefore, was on the sustainability of the physical outputs such as the length of the roads built and how it benefitted communities over time. Inevitably, RMF also showed outcomes for prior period's strategic objectives, as such they provided both backward and forward-looking measures of performance.

DISCUSSION

The analysis indicates how the measures of performance evolved with DBA's 2013–2022 strategic planning, and how DBA responded with a framework such as RMF in order to better understand performance, and to evaluate and set appropriate directions to remain competitive. Our findings show that strategic performance measures were generated at the different levels of the chain, evaluating value for money along economy, efficiency, and effectiveness dimensions of performance. These findings are consistent with the assertion of Nanni et al. (1992) that performance measures must focus on the linkages between the various processes, which are essential in the implementation of a firm's strategies. Our analysis of the different levels (Table 3) of strategic thrusts for DBA show that both financial and nonfinancial performance measures were necessary (Chenhall, 1997; Ittner & Larcker, 1997) in understanding the value for money in terms of the economy, efficiency, and effectiveness of operations, outputs, and outcomes.

Drawing on Boardman et al. (2011), we simplify the uncertainties inherent in understanding outcome measures due to the complexities associated with a multidimensional performance system such as the RMF. In this way, we move toward offering a framework to address concerns raised in recent research studies in multidimensional performance measures (Adams, 2004; Barter & Bebbington, 2009; Epstein & Widener, 2011; Thomas, 2016). Our findings provide evidence that the measures of performance not only change with the

changing economic and social landscape of sustainable development, but also evolve with the managerial accounting systems and practices. This intricate interplay has rarely been evident in prior research studies (e.g. Albelda, 2011; Bhimani & Langfield-Smith, 2007).

Our findings also support the research views on multidimensional performance measurement systems and how they evolve over time. As in this study, it was clear that change and continuity were the cornerstones for the evolution of strategic performance measures and how they were impacted by changes in managerial accounting practices, which were necessitated by organizational change. In this way, we support Ittner et al.'s (2003) findings which argue that a multidimensional performance measurement practice evolves to capture key strategic performance dimensions.

As briefly reviewed in the data analysis and display, and further elaborated within the case analysis, certain patterns emerge in the interplay between strategic performance measures and managerial accounting practices in the context of organizational change at DBA. It was shown that as the sustainable development landscape becomes complex for DBA, continuous improvements in the budgetary mechanisms and business practices with or without the use of technology, etc., became a norm. Our findings suggest that managerial accounting practices change along with strategic performance measures and continuity ensues as certain measures of performance become sedimented in the ongoing managerial accounting practices.

Toward a Conceptual Model for the Interplay between Strategic Performance Measures and Managerial Accounting Practices

Our analysis reveal that the managerial accounting practices for budgeting and process improvements, adapt to incorporate an integrated set of performance measures which may afford sustainable value to the stakeholders of the organization studied. Moreover, we glean that the evolution in strategic performance measurement and the related managerial accounting practices can only be understood in the confluence of organizational change and sustainability. In terms of the themes emerging from the analysis, the following theoretical interpretation can be drawn from the interplay between strategic performance measurement and managerial accounting practices for sustainable development.

We are acknowledging the need to embrace change and sustainability simultaneously, while attempting to provide some insights into the dynamics of such organizational change and how they impact upon sustainable

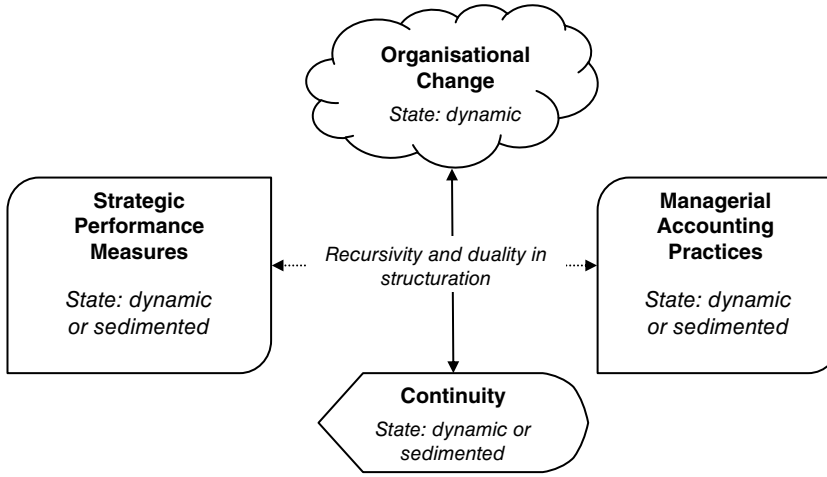

Fig. 2. Interplay between Performance Measures and Managerial Accounting Practices.

managerial accounting practices in the context of performance measurement. Fig. 2 draws upon these insights to propose that strategic performance measures continue to evolve in conjunction with, and in response to the managerial accounting practices, which are in turn influenced by organizational change and continuity. We use structuration (Giddens, 1984) as a meta-theoretical lens to understand the interplay as actions and practices as sustainable structures for ongoing managerial accounting practices and for ongoing performance management frameworks, based on practices that settle upon continuity.

Implications for Theory and Practice

Our analysis show that despite the vast array of tools and systems available to measure financial and nonfinancial aspects of performance, the development organization requires a comprehensive, multifaceted measurement system to understand creation and delivery of sustainable value. Our findings have implications to development organizations which are focused on creating sustainable value to their stakeholders. Our perspective on how change and continuity coexist in influencing a multidimensional performance management framework reinforces a discipline of a results orientated culture for organizations to succeed in the long run. Our perspective on the interplay between performance measurement and managerial accounting practices support

continuous improvement and organizational learning as they are essential to progress of any development organization in times of change. Moreover, we interpreted the RMF as a tool for managing organizational change. In this way, the strategic performance measures not only focus on measuring outcomes rather than outputs but also enable an understanding the impact of the firm's development initiatives.

CONCLUSION

This study investigated the ways in which strategic measures of performance evolve with the practices of managerial accounting for sustainable development. We find that in times of organizational change, the managerial accounting practices adapt to incorporate an integrated set of performance measures that afford sustainable value to the stakeholders of the organization. Moreover, we show that the evolution of strategic performance measures and the related managerial accounting practices can only be understood in the confluence of organizational change and sustainability.

The findings provide rich insights into how managers adapt their information assimilation practices to the changing demands of their different stakeholders and adopt practices that innovate measures of performance that are aligned to the strategic goals of the organization which produce sustainable value to the stakeholders. Finally, the findings illustrate that interplay between strategic performance measurement and managerial accounting practices has the potential to improve or inhibit sustainable development.

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