

Revenue growth in not-for-profit organisations: The effects of interactive and diagnostic controls and organisational culture

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Abstract

Using survey and archival data for 180 not-for-profit aged care organisations, we find that interactive use of performance measurement systems positively affects the organisations' revenue growth, while the diagnostic use negatively affects revenue growth. We also find that organisational culture, specifically attention to detail, innovation and respect for people, moderates these effects. Our findings have implications for the literature in terms of understanding the combinatorial effects of formal management control and culture on organisational performance. The findings also have practical implications for designing performance measurement systems and developing organisational cultures, to create an internal environment effective in enabling revenue growth.

KEYWORDS

levers of control, not-for-profit, organisational culture, performance measurement systems, revenue growth

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1 | INTRODUCTION

The purpose of this study is to examine the effect of performance measurement systems (PMS) and organisational culture on revenue growth in not-for-profit organisations (NFPs) in the aged care sector in Australia. While several prior studies have examined the effect of PMS and the use of accountability mechanisms on NFPs' social performance (e.g., Harrison *et al.*, 2021; Jiao, 2021), none has examined the effect on financial performance.

Examining such an effect is important because, although NFPs exist to serve social purposes, they require financial/economic resources to do so (Henderson & Lambert, 2018; Hyndman & McKillop, 2018). The financial imperative, emphasising revenue growth and financial sustainability, has long been recognised by both scholars and practitioners as essential and critical for NFPs which must be financially viable and generate sustainable revenue streams in order to deliver their social services (e.g., Aschari-Lincoln & Jäger, 2016; Chenhall *et al.*, 2010, 2013, 2016; Denison *et al.*, 2019; Green & Dalton, 2016; Jaskyte, 2020; Jiao *et al.*, 2020; Kaine & Green, 2013; Weerawardena *et al.*, 2010; Weerawardena & Mort, 2006).

This is especially so in the current 'market' environment of NFPs, including those providing aged care services (Kaine & Green, 2013). Green and Dalton (2016, p. 299) claim that:

Australian not-for-profit community service organizations are now, more than ever, actively engaged in a variety of income-generating strategies to achieve and/or maintain economic sustainability. Central to these strategies is the need to meet the dual challenge of succeeding financially in a competitive environment and simultaneously serving mission.

Weerawardena *et al.* (2010, p. 351) argue that 'achieving social mission should be built on a strong economically viable organizational platform'. Weerawardena *et al.* (2010, p. 351) quote one practitioner participant in their study, from the NFP aged care sector, commenting that: 'There are very few not-for-profits now in the aged care area that haven't made the change from a cottage industry to being quite business-like in trying to generate a surplus so they have something to reinvest for the future'. Revenue generation is seen as 'a ubiquitous problem for nonprofits (which) is never far from the managers' top of mind' (Weerawardena *et al.*, 2010, p. 351).

Similarly, Denison *et al.* (2019, p. 56) claim that:

Revenue growth is often considered to be one of the primary goals when it comes to the financial management of nonprofit organizations. At a minimum, a nonprofit organization should have sufficient annual revenue growth to sustain current operations in future years. Revenue growth is also important for nonprofit organizations that seek to expand future service levels.

With respect to NFPs in the aged care sector in Australia, Egan (2016) notes the importance of organisations being able to generate sustainable revenue/income streams through, *inter alia*, the development of new or additional services, in order to survive and succeed in the market-driven environment that characterises the contemporary NFP aged care sector. Generation of a sustainable revenue stream is critical for NFP aged care providers as their operating environment becomes more competitive, and as government moves from block funding to the more market-based individualised funding model within which aged care clients, and their kin, can exercise agency in choosing their service provider (Subramaniam *et al.*, 2018).

Indeed, and in sum, recognition of the criticality of revenue growth for NFPs generally, and in the aged care sector as the context of this study, has generated significant ongoing scholarly and practitioner interest in NFPs' revenue raising strategies (e.g., Froelich, 1999; Hung & Hager, 2019; Mitchell & Calabrese, 2019).

This pressure to achieve financial viability through sustainable revenue streams, together with the New Public Management ideology applied in the sector, has seen NFPs adopting a range of for-profit business practices, such as the use of PMS, to address funders' expectations and to improve performance (Chenhall *et al.*, 2010, 2013; Hall, 2017; Hyndman & McKillop, 2018; Kraus *et al.*, 2017).

PMS have been argued as 'vital catalysts for performance improvement' (Verbeeten & Speklé, 2015, p. 954), through directing organisational learning and management attention (Bedford, 2015; Widener, 2007), coordinating and integrating knowledge, and motivating employees (Adler & Chen, 2011). In the NFP/NGO (non-government organisation) context, Kraus *et al.* (2017, p. 43) argue that prior research demonstrates that PMS, as part of a formal management control system (MCS), can 'manage the tensions between financial and social ideals ... (since) ... management control can help NGOs attract funding, while maintaining their identity'. Kim *et al.* (2018, p. 1008) also note that 'PMS can help nonprofit organizations avoid going bankrupt ... and serve to enhance their efficiency and accountability in the midst of turbulent internal and/or external environments'.

The contemporary challenge for managers in NFPs generally and in the aged care sector of this study is how can formal business-like practices, such as PMS, be used to stimulate growth and financial performance to survive in a market-driven, competitive environment, while operating within a context constrained by rules and standards induced by external regulatory forces driving towards better compliance. This managerial challenge is the research question we address in this study. Set within the Australian aged care sector, our study investigates the association between the use of PMS, as an important component of a formal MCS, and NFPs' financial performance, specifically revenue growth.

We also examine the combinatorial, or moderating, effect of the use of PMS and organisational culture on NFPs' revenue growth. Organisational culture plays a crucial role in shaping employee attitudes and behaviours, and consequently organisational performance (Baird & Harrison, 2017; Schneider *et al.*, 2013; Verbeeten & Speklé, 2015). With respect to the moderating effect of organisational culture on the use of PMS, Lebas and Weigenstein (1986, p. 270) note that 'organizational culture "conditions" the way a control system is used' and emphasise that 'the organizational culture within which the control system exists shapes the control experience'. Henri (2006b, p. 79) argues that organisational culture 'is operationalized as the shared values (what is important) that interact with an organization's structures and control systems to produce behavioural norms (the way we do things around here)'. Similarly, Kim *et al.* (2018) posit that organisational culture may either 'facilitate' or 'dampen' the relation between PMS use in NFPs and employees' acceptance of PMS.

We examine the two dimensions of use of PMS from Simons's (1995) levers of control, specifically the interactive and diagnostic use of PMS; and three dimensions of organisational culture from O'Reilly *et al.*'s (1991) Organisational Culture Profile, specifically attention to detail, innovation, and respect for people. As discussed in the next section of the paper, we focus on the interactive and diagnostic use of PMS because of their theoretical ability to affect organisational outcomes and performance, and on the three dimensions of organisational culture because of their theoretical relevance to the contemporary aged care setting.

Our study makes several contributions. First, it responds directly to Hall's (2017) call for research examining the benefits of using business-like practices in NFPs, including specifically the impact of those practices on NFPs' financial performance. Second, the study contributes to the literature and our understanding of the important interaction between formal management control and organisational culture, and the effects of this interaction on organisational performance. While Berry *et al.* (2009) called for research into the combination of control and culture as that combination affects organisational performance, prior research (e.g., Heinicke *et al.*, 2016; Verbeeten & Speklé, 2015) has tended to focus on the association between the two, including the extent and direction of causality. Our study, therefore, serves as an extension

to this recent and important body of work, and directly addresses Berry *et al.*'s (2009) call by examining the combinatorial effect of the organisational culture dimensions of attention to detail, innovation and respect for people and the interactive and diagnostic uses of PMS on NFPs' revenue growth.

2 | LITERATURE REVIEW AND HYPOTHESES FORMULATION

We formulate eight hypotheses. The first two hypothesise associations between the interactive and diagnostic use of performance measurement systems and revenue growth; the remaining six hypothesises moderating effects of the three dimensions of organisational culture (attention to detail, innovation, and respect for people) on those associations. All hypotheses are written in associational form, consistent with the correlational, cross-sectional nature of this research, and based on literature and evidence-based theory and theoretical reasoning.

2.1 | Use of performance measurement systems (PMS)

NFP performance measurement has been a key concern for researchers and practitioners (Ebrahim & Rangan, 2014; Hyndman & McKillop, 2018), and a topic of substantial debate in recent decades. Largely driven by the infusion of new public management practices into the sector and by funders' accountability requirements, NFPs have increasingly adopted formal PMS to demonstrate accountability and trustworthiness, and to improve performance (Chenhall *et al.*, 2010, 2013, 2017; Ebrahim & Rangan, 2014; Hall, 2017; Kim *et al.*, 2018). Ebrahim and Rangan (2014, p. 130) argue that PMS not only play a critical role in enhancing NFPs' performance but also a political role 'in mediating the relationship between operating organizations and their funders'.

Nevertheless, PMS do not automatically lead to improved organisational outcomes and performance (Ebrahim & Rangan, 2014; Hall, 2017; Laitinen *et al.*, 2016; Mundy, 2010). Rather, it is the *use* of PMS that is more important than the design of the system itself (Chenhall *et al.*, 2010; Grafton *et al.*, 2010; Guenther & Heinicke, 2019; Otley, 2016; Speklé *et al.*, 2017). Therefore, we examine the *use* of PMS, and do so drawing on Simons' (1995) levers of control (LOC) framework, within which the use of PMS is a critical component (Guenther & Heinicke, 2019; Marginson *et al.*, 2014; Strauß & Zecher, 2013).

Simons' (1995) framework identifies four levers of beliefs, boundary, and interactive and diagnostic controls. The LOC has been widely acknowledged as meaningful and useful (Ferreira & Otley, 2009; Otley, 2016), and is the most commonly used MCS framework in the accounting literature (Strauß & Zecher, 2013). Because of the interactive and diagnostic levers of control, Simons's framework is seen as unique in that it captures differences in styles of use of MCS. Interactive and diagnostic controls are distinguished from beliefs and boundary controls as they refer specifically to how control systems, such as PMS, are used (Guenther & Heinicke, 2019; Pilonato & Monfardini, 2020; Tessier & Otley, 2012). We first hypothesise the effects of the interactive and diagnostic uses of PMS on revenue growth in NFPs.

2.2 | Interactive use of PMS and NFPs' revenue growth

In the interactive use of PMS, managers regularly and personally engage in subordinates' decision-making activities, creating an open forum in which 'employees are bound together in frequent face-to-face meetings and develop a unified concern ... (which) ... facilitates debate and dialogue on threats and opportunities' (Heinicke *et al.*, 2016, p. 28).

Interactive use of PMS stimulates new initiatives that contribute to strategic change (Arjaliès & Mundy, 2013). This is because interactive use of PMS facilitates continuous information exchange and double-loop learning, enabling the organisation to manage strategic uncertainties (Ahrens, 2018; Arjaliès & Mundy, 2013; Marginson *et al.*, 2014; Pilonato & Monfardini, 2020; Speklé *et al.*, 2017). The open debate of the interactive use of PMS encourages innovative ideas that ‘guide the bottom-up emergence of strategies’ (Marginson *et al.*, 2010, p. 357). Interactive control enables flexibility and creativity (Chenhall *et al.*, 2011; Dunk, 2011; Laitinen *et al.*, 2016; Speklé *et al.*, 2017), since it ‘challenges the thinking and action plans of subordinates’ (Simons, 2000, p. 216) and emphasises motivation rather than sanction (Laitinen *et al.*, 2016; Widener, 2007).

With respect to aged care providers, the interactive use of PMS facilitates information exchange between managers and employees and allows for the identification of the changing needs of clients, and, accordingly, identification of the threats or opportunities for changes to programs and activities. Given the sector's increasing emphasis on client-centred and individualised service design and delivery, the understanding of clients’ changing needs, facilitated through the continuous learning and improvement inherent in the interactive use of PMS, stimulates service and service delivery innovations. These innovations allow the organisation to differentiate itself from other providers and gain competitive advantage in the market (Dunk, 2011; Laitinen *et al.*, 2016) and serve as ‘a source of increased financial performance’ (Jaskyte, 2020, p. 42). Service differentiation and enhanced competitive advantage provide the platform for both new client growth and the preparedness of existing clients to pay higher fees for new and innovative services or forms of service delivery, both of which yield revenue growth. Hence, we hypothesise:

H1: The extent of interactive use of PMS is positively associated with NFPs’ revenue growth.

2.3 | Diagnostic use of PMS and NFPs’ revenue growth

Diagnostic use of PMS is concerned with monitoring of performance, that is, control focuses on comparing actual performance against targets and identifying deviations, thus entailing single-loop feedback (Simons, 1995). Diagnostic control is described as a stringent control, involving highly structured vertical communication and information flows. Grafton *et al.* (2010) see the diagnostic use of control as a feedback mechanism that focuses on organisations’ existing capabilities, contrasting with the interactive use of control which they see as a feed-forward mechanism focusing on new capabilities.

Some research has posited a positive relation between the diagnostic use of PMS and organisational performance. Bisbe and Malagueño (2009), for example, argue that diagnostic use of PMS leads to improved organisational performance because ‘what gets measured gets attention’. Similarly, Guenther and Heinicke (2019, p. 5) argue that ‘emphasis on the diagnostic use of a PMS helps a firm to implement its intended strategy, design desirable behaviour and monitor whether the targets for critical performance variables are achieved using a cyclical approach of checks and balances’.

In contrast, other researchers equate the diagnostic use of PMS with the ‘cybernetic’ approach to control, and highlight its negative effects such as pseudo-control, defensive routines, and dysfunctional behaviour (e.g., Dunk, 2011). Diagnostic control represents ‘automatic processes and control-at-a-distance’ and emphasises ‘maintaining the status quo’ (Marginson *et al.*, 2010, p. 357). Underlying a management by exception approach, diagnostic control focuses managers’ attention on deviations from pre-set performance targets/standards, that is, attention is only focussed on negative variances and mistakes (Deschamps, 2019; Henri, 2006b;

Marginson *et al.*, 2010, 2014). Hence, Henri (2006b, p. 83) argues that diagnostic control is ‘most justified for routine process ... (focusing) ... on learning that may be mere repetition of past behaviors’, and that it produces only low-level learning ‘that reflects the importance of conformity and rigidity associated with control values’.

We hypothesise a negative association between the diagnostic use of PMS and revenue growth. We do so on the premise that the monitoring and feedback processes based on a stringent set of performance metrics can be perceived as behavioural constraints, which then impede employee creativity (Bisbe & Otley, 2004; Dunk, 2011; Kim *et al.*, 2018). This lack of creativity in delivering aged care services inhibits organisational capabilities in attracting new clients and developing innovative services for either new or existing clients, and therefore hinders revenue growth.

H2: The extent of diagnostic use of PMS is negatively associated with NFPs’ revenue growth.

2.4 | Moderating effects of organisational culture

As noted in the introduction, organisational culture plays a crucial role in shaping employee attitudes and behaviours, and consequently organisational performance (Baird & Harrison, 2017; Schneider *et al.*, 2013; Verbeeten & Speklé, 2015). Comprising values, beliefs and assumptions shared by organisational members, organisational culture ‘deeply affects how organisational members interpret social objects and practices, what goals members develop, and what strategies members enact to link the objects and practices to the goals’ (Love & Cebon, 2008, p. 243).

A major framework of organisational culture is O’Reilly *et al.*’s (1991) Organisational Culture Profile (OCP). The OCP has ‘a long history of precedent and robustness of use across both private and public sector contexts and across countries’ (Baird & Harrison, 2017, p. 317), and has also been applied in the NFP setting (e.g., Chen *et al.*, 2019; Jaskyte, 2011).

O’Reilly *et al.* (2014, p. 603) note that ‘organizational culture is multidimensional and has been measured in a myriad of ways ... (and that) ... a given facet of culture may be relevant in some circumstances and irrelevant in others’. We focus on three dimensions that are theoretically relevant to the aged care sector. Attention to detail is relevant because organisations in the sector require a high level of compliance and attention to detail to ensure safety and quality care for clients. Innovation is relevant because the market-driven and increasingly competitive environment in the sector requires innovation in services and service delivery to be successful in meeting the expectations of an increasingly affluent client cohort. Respect for people is relevant because respect for the rights of the individual and social responsibility are critical to the successful provision of quality aged care services for clients increasingly needing and expecting personalized services.

2.4.1 | Attention to detail

A culture of attention to detail emphasises values of precision, carefulness, and accuracy (O’Reilly *et al.*, 1991), and is often characterized as emphasising rules and procedures. It has been seen as involving extensive flows of information and placing value on information as it informs operational and strategic decisions and enhances decision-making accuracy (Bhuiyan *et al.*, 2020). We hypothesise that the combination of the interactive use of PMS and a culture of attention to detail enhances performance outcomes such as revenue growth. We base this hypothesis on the following reasoning.

The interactive use of PMS is described by Simons (1995) as stimulating two key, and related, organisational consequences of learning and innovation. As noted in the development of HI, the interactive use of PMS facilitates continuous information exchange among managers and employees, and serves to provide double-loop learning which fosters flexibility and enables organisational innovation and change (Chenhall *et al.*, 2011; Henri, 2006a; Laitinen *et al.*, 2016; Speklé *et al.*, 2017). De Harlez and Malagueño (2016, p. 5) describe the interactive use of PMS as a ‘learning machine’ that allows organisational members ‘to explore problems, ask questions, explicate presumptions, analyse the analysable and finally resort to judgment’. Budianto and Yuliansyah (2014) note that the interactive use of PMS can ‘leverage learning’; providing the dialogue and debate among members of the organisation that stimulate innovation and improvement in organisational strategies and operations. Zhang and Yu (2020) cite Widener (2007) and Koufteros *et al.* (2014) to argue that the interactive use of PMS fosters participation and communication and stimulates the development of new ideas and initiatives and/or changes to existing practices and processes.

The effect of the interactive use of PMS on revenue growth is likely to be affected by, and enhanced in, an organisational culture of attention to detail for three reasons. First, it is acknowledged that interactive controls become (more) effective with the underlying support structure at the organisation level (Chenhall & Morris, 1995). This is because in order to achieve learning from interactive controls, organisations have to be oriented to learning (Hult, 1998; Widener, 2007), which requires ‘a culture amenable to learning’ (Galer & Van Der Heijden, 1992, p. 11). Therefore, an attention to detail culture, emphasising details, precision, carefulness and accuracy, provides the support structure for organisations to facilitate the learning process and maximise the benefits of interactive controls.

Second, as O’Reilly *et al.* (2014, p. 617) argue, ‘when people in an organization share consistent expectations about the importance of being detail oriented ... the (organization) is more likely to successfully implement their plans’. Similarly, Khazanchi *et al.* (2007) argue that organisations that are more detail oriented are more likely to perform well in their execution of strategic and operational imperatives and initiatives than those that are not detail oriented. That is, while interactive use of PMS provides the conduit for the identification of strategic or operational initiatives through the double-loop, participative approach to learning, the culture of attention to detail ensures that those initiatives are executed and implemented carefully and precisely such that they match the emergent service expectations and needs of clients, which is crucial to aged care organisations. The combination of the interactive use of PMS and a culture of attention to detail allows the identification and careful implementation of initiatives for service differentiation and competitive advantage that are likely to lead to revenue growth, either, as noted previously, by the attraction of new clients or the preparedness of existing clients to pay higher fees for services.

Expressed another way, the interactive use of PMS provides what Henri (2006b) calls an attention-focusing function (i.e., focusing attention on strategic and operational initiatives), through which managers clarify organisational goals for employees and the rules and standards that circumscribe those goals. The culture of attention to detail may be argued to serve a sense-making function for employees, allowing and stimulating them to appreciate the importance of the initiatives (strategic or operational) to the organisation, the achievement of its goals within the rules and standards, and to implement the initiatives carefully, precisely and, as O’Reilly *et al.* (2014) and Khazanchi *et al.* (2007) argue, more successfully than organisations that do not have such a culture, again potentially leading to enhanced financial performance.

Third, managers’ involvement in, and their interpretation of the ‘rules’ as part of, the interactive use of PMS, create the psychological safety within which employees are more likely and more willing to challenge assumptions and the *status quo* (Pilonato & Monfardini, 2020). The combination of the interactive use of PMS and a culture of attention to detail may be seen to overcome the potential tension between compliance with rules and regulations for quality of

client care on the one hand and revenue growth on the other. The tension may be overcome by the identification and implementation of those innovations that provide added value for clients within the boundaries of the compliance rules and regulations and, hence, either attract new clients or induce existing clients to pay higher fees for the ‘value-adding’ services, both of which lead to revenue growth. Hence, we hypothesise:

H3: The interactive use of PMS in a culture of attention to detail is positively associated with NFPs’ revenue growth.

By contrast, we hypothesise that a combination of a culture of attention to detail and the diagnostic use of PMS is negatively associated with revenue growth. This is because both a detail orientation culture and diagnostic use of PMS entail rigidity, and structured and extensive information flows (Ahrens, 2018; Baird & Harrison, 2017; Guenther & Heinicke, 2019). Emphasising the diagnostic use of PMS in a culture that values rules and standards, and which involves frequent, highly detailed and structured compliance and monitoring, may lead to an excessive perception of bureaucratic control and accountability at the micro-detail level, which may lead to negative consequences. For example, a rigid focus on meeting pre-set goals can stifle innovation and learning (Dunk, 2011; Löfstål & Jontoft, 2017), and lead to employee resistance (Kim *et al.*, 2018) or to employees ‘gaming’ the control system, giving rise to short-termism and myopia (Hyndman & McKillop, 2018; Marginson *et al.*, 2010). Müller-Stewens *et al.* (2020) note that prior studies have generally concluded the negative impact of detailed planning associated with diagnostic controls.

Similarly, Hall (2017, p. 12) noted a trend for NFPs to shift from ‘writing’ (describing activities) to ‘counting’ (quantifying their activities and impacts) in performance measurement, as a result of which performance measures are more ‘precise’, but that ‘taking this process too far can be counterproductive’, with excessive demands for metric accuracy in performance and reporting potentially diverting employee resources and motivation away from initiating organisational changes and building capabilities in service delivery, subsequently hampering revenue growth (Kraus *et al.*, 2017). Hence, we hypothesise:

H4: The diagnostic use of PMS in a culture of attention to detail is negatively associated with revenue growth.

2.4.2 | Innovation

A culture of innovation entails a willingness to experiment, being quick to take advantage of opportunities, not being constrained by many rules, and risk taking (Harrison & Baird, 2015; O’Reilly *et al.*, 1991). Innovation is generally accepted in the literature as essential for organisational survival, competitive advantage, performance and growth in changing and challenging external environments (Chen *et al.*, 2019; Henri, 2006a).

Similar to the situation described in the previous discussion of the cultural dimension of attention to detail, the combination of a culture of innovation with formal control (the interactive and diagnostic use of PMS) may allow aged care organisations to respond to the pressures arising from their market-driven and compliance environments, and to leverage those pressures to yield revenue growth.

Interactive use of PMS, with its emphasis on regular and personal engagement between managers and employees, enables a common view of the organisation, and allows interactions between managers and employees to discuss and debate the factors that are key to the organisation’s success. Interactive control also emphasises adaptability, enterprise, and the identification of new initiatives and developments in organisational processes (Henri, 2006a; Mundy, 2010; Pavlov & Bourne, 2011). Hence, interactive control supports an innovation culture in

that it promotes and stimulates employees toward finding new ideas and solutions, while, at the same time, ensuring those innovations are focused on those factors that are critical to the organisation's success (Chenhall *et al.*, 2011). That is, the interactive use of PMS in conjunction with a culture of innovation frames the institutional context that facilitates and stimulates open dialogue/debate and accelerates the identification of new organisational opportunities and renewal strategies consistent with the organisations' goals and objectives, thus leading to improved organisational performance (Mundy, 2010).

An innovation culture complements and brings out the feed-forward function of interactive controls (Pavlov & Bourne, 2011; Schreyögg & Steinmann, 1987), with the two, PMS and culture, working together to help aged care organisations gain competitive advantage by serving clients with initiatives focused on the needs and demands of those clients and consistent with the goals and objectives of the organisation. As such, it is expected that the interactive use of PMS in an innovation culture leads to higher revenue growth through either attracting new clients and/or through the preparedness of existing clients to pay higher fees for new and innovative services.

The diagnostic use of PMS is an *ex post* control through tracking and monitoring progress and results and comparing outcomes to expectations (Mundy, 2010; Strauß & Zecher, 2013). As such, diagnostic use of PMS may be argued as limited in its capacity to improve organisational performance, in comparison with the interactive use of PMS. This potential limitation may explain the mixed views in the literature in terms of the effect of diagnostic use of PMS on organisational performance, as discussed previously in the arguments leading to H2. However, Norman (2001) and Mundy (2010) argue that the diagnostic use of PMS can help organisations achieve higher performance goals through novel approaches. Similarly, Henri (2006a) argues that diagnostic use of PMS is not an end itself, but, if exercised appropriately, a means of identifying achievable performance goals and motivating employees. Based on Norman (2001), Henri (2006a) and Mundy (2010), it is expected that the diagnostic use of PMS, in an innovation culture, can lead to enhanced future organisational performance. This is because such a culture of innovation motivates employees to see negative variances arising from diagnostic control not as mistakes, but as feedback, providing critical information to stimulate prompt action and experimentation directed towards new ways to address issues or concerns affecting client services (Chenhall *et al.*, 2011).

In sum, a culture of innovation requires the formal control of either interactive or diagnostic use of PMS to produce new solutions and innovations seen by clients/residents as valuable, and consistent with their expectations, resulting, again, in positive effects of attracting new clients and/or the preparedness of existing clients to pay higher fees for new and innovative services, and, in turn, revenue growth.

H5: The interactive use of PMS in a culture of innovation is positively associated with revenue growth.

H6: The diagnostic use of PMS in a culture of innovation is positively associated with revenue growth.

2.4.3 | Respect for people

A culture of respect for people emphasises the values of fairness, respect for the rights of the individual, and social responsibility (Baird & Harrison, 2017; O'Reilly *et al.*, 1991). As Chenhall *et al.* (2010) suggest, the values of fairness and respect encourage a client-centric approach to the provision of social services by NFPs, including aged care services, which then leads to better attainment of NFPs' social objectives. A client-centric approach to aged care services is

operationalised through tailoring services to the holistic care needs of the individual and enhancing both the level and quality of individualised services (van der Borg *et al.*, 2017). Indeed, respect for people has been articulated by many aged care providers as an essential element of their value system. For example, St Louis Aged Care emphasises the criticality of respect for clients as part of their core values, which is translated into action that delivers personalized high-quality care for clients and leads to the organisation's positive relationship building with clients and client satisfaction.

However, tailoring aged care services to the individual and enhancing those individualised services have financial implications (De Bellis, 2010). For example, individual clients with different disabilities or other aged-related illnesses and conditions require additional and more advanced, and more costly, care involving extensive use of general and specialised care labour and equipment, which also warrants additional costs of staff education and training.

The way in which the additional costs of individualised care services is perceived is likely to be affected by how employees and managers frame those costs within the circumstance of the internal MCS, particularly the use of PMS. The interactive use of PMS emphasises interactions between managers and employees such that both the additional and individualised services and their consequential costs are better articulated and understood. Interactive use of PMS promotes forward-looking initiatives and enhancing an organisation's new capabilities and encourages both managers and employees in NFPs to pursue collective organisational interests including both social and financial interests.

Supporting and strengthening this argument is that respect for people entails respect for both external stakeholders of clients and internal stakeholders of employees. With respect to the latter, a culture of respect for people provides an internal environment that enables interactive control to be exercised effectively in a facilitative, non-invasive manner (Mundy, 2010). When employees, especially frontline care providers, feel respected, they will be more willing to engage with management in the processes of communication, debate and information sharing; thus, effecting interactive use of PMS. This willingness will be reflected in employees' greater acceptance of the strategic priorities of their organisation, and in their greater preparedness to share ideas and provide information and insights that are crucial to management's decisions and strategy formulation and implementation (Chenhall *et al.*, 2011). As such, not only will employees exert additional efforts to achieve higher performance goals themselves, they will also be more motivated to propose initiatives in care service provision that are value-adding for clients.

Given the increasing reliance on fees for service by NFPs in the aged care sector (Lee & Clerkin, 2017) and the increasing affluence of their client cohorts, additional services and initiatives, when tailored to the specific needs of the individual, are likely to be financed through higher fees by clients who are financially capable, or otherwise funded by taxpayers through government via a national disability insurance scheme, for example. In either case, the organisation is likely to generate revenue growth. Hence, we hypothesise:

H7: The interactive use of PMS in a culture of respect for people is positively associated with revenue growth.

By contrast, the diagnostic use of PMS in a respect for people culture is likely to be negatively associated with NFPs' revenue growth. As discussed earlier, the diagnostic use of PMS emphasises performance monitoring and focuses on deviations from pre-set targets and on an organisation's existing capabilities. As such, its bureaucratic nature is inconsistent with the respect for people culture, which emphasises equal rights and the client-centric approach to services. Continuing the example of clients with different disabilities, illnesses or conditions, the diagnostic use of PMS may frame the additional services provided to these clients in terms of added costs, rather than added value, and in terms of negative deviations from pre-set budgetary targets. Additionally,

without the proactive managerial support for employees provided by an interactive use of PMS, employees are less likely to bring forward suggestions for improvements and innovations in existing care services. The diagnostic use of PMS is likely, therefore, to place emphasis on maintaining the organisation's existing capabilities and service levels, resulting in failure to meet the increasing and differentiated needs of clients, which, in turn, is likely to lead to loss of client revenue. Hence, we hypothesise:

H8: The diagnostic use of PMS in a culture of respect for people is negatively associated with revenue growth.

3 | METHOD

Our data comprise 180 aged care organisations in Australia with not-for-profit status. Initially, 500 organisations were randomly selected from the ACNC (Australian Charities and Not-for-profits Commission) database. We selected large organisations (annual revenue of \$A1 million or more) as they are more likely to have implemented comprehensive PMS. Our focus on large organisations is consistent with past research (e.g., Bedford *et al.*, 2016; Grafton *et al.*, 2010; Henri, 2006b).

3.1 | Data collection

To guard against the possibility of common method bias, we employed a mixed-method, two-step approach to data collection. In the first step, data on the independent variables of organisational culture and the interactive and diagnostic uses of PMS were obtained by survey questionnaires, given the unavailability of objective data on these variables. We pre-numbered each survey to allow identification of respondents for the second step, in which survey responses were matched with the organisations' Annual Information Statements (AIS) lodged with the ACNC to obtain data for the dependent variable of revenue growth and control variables.

To increase the response rate and data quality, a mail-based survey was conducted. We followed Dillman *et al.*'s (2009) tailored design method in survey design and administration, including hand-addressing outgoing envelopes and salutations on cover letters, using purchased stamps on outgoing envelopes, and providing postage-paid return envelopes. Respondents were provided with assurance of confidentiality. Before survey administration, a research assistant was employed to validate the top management details and addresses of the targeted organisations. The questionnaire was pretested with academic colleagues and NFP practitioners to ensure appropriate wording and understandability.

The questionnaire was sent to the top managers (CEOs, general managers) of the 500 organisations in the second half of 2017. Simons' LOC framework focuses on top managers' perspective, and prior survey-based MCS studies argue that top managers have comprehensive understanding of their organisations' PMS practices and organisational culture (Bedford *et al.*, 2016; Henri, 2006b; Widener, 2007). As an incentive for participation, we offered an executive summary of the findings of the study (Widener, 2007). Of the 500 organisations, 236 responded for a response rate of 47.2 percent. We were able to match 180 responding organisations with their AISs, resulting in a final sample of 180.

To test for non-response bias, we compared responses of the early and late responses (proxying for non-respondents) (Laitinen *et al.*, 2016). The results indicate no significant differences for organisational demographics and variables of interest between the two groups, suggesting that non-response bias is not likely to be an issue (Bedford *et al.*, 2016).

3.2 | Measurement

3.2.1 | The use of PMS and organisational culture

We measured the interactive and diagnostic uses of PMS in line with Henri (2006b), Bedford *et al.* (2016), and Heinicke *et al.* (2016). Interactive use of PMS was measured using seven items and diagnostic use was measured using four items. The items are shown in Table 1. Respondents were asked to indicate the extent to which each item was used in their organisations on a seven-point scale anchored at '1 = To no extent' and '7 = To a great extent'. Exploratory factor analysis confirmed the construct reliability of the two factors with Cronbach alpha scores of 0.935 and 0.942, respectively (well above the threshold of 0.70).

Consistent with prior research, the organisational culture dimensions were measured using items from the Organisational Culture Profile (OCP) of O'Reilly *et al.* (1991), as adapted by Windsor and Ashkanasy (1996). The measure has been extensively used and validated

TABLE 1 Variable measures, Cronbach's α , and average variance extracted (AVE)

Variable measures	Cronbach's α	AVE
<i>Interactive use of PMS</i>	0.935	0.674
Tie the organisation together		
Enable the organisation to focus on common issues		
Enable the organisation to focus on critical success factors		
Develop a common vocabulary in the organisation		
Provide a common view of the organisation		
Enable discussion in meetings of superiors, subordinates and peers		
Enable continual challenge and debate underlying results, assumptions and action plans		
<i>Diagnostic use of PMS</i>	0.942	0.802
Track progress towards goals		
Review key measures		
Monitor results		
Compare outcomes to expectation		
<i>Attention to detail culture</i>	0.810	0.598
Being careful		
Paying attention to detail		
Being precise		
<i>Innovation culture</i>	0.843	0.480
A willingness to experiment		
Not being constrained by many rules		
Quick to take advantage of opportunities		
Being innovative		
Risk taking		
<i>Respect for people culture</i>	0.841	0.502
Fairness		
Respect for the rights of the individual		
Tolerance		
Being socially responsible		

TABLE 2 Means, standard deviations (SD), correlation matrix and discriminant validity

	Mean	SD	1	2	3	4	5	6	7	8
1. Attention to detail	5.68	0.97	0.77							
1. Innovation	6.32	0.63	0.13	0.69						
1. Respect for people	4.92	1.02	0.35***	0.46***	0.71					
1. Interactive	5.30	0.98	0.19*	0.44***	0.43***	0.82				
1. Diagnostic	5.57	1.06	0.03	0.33***	0.31***	0.75***	0.90			
1. Revenue growth	-0.07	1.30	0.06	0.02	-0.06	0.04	-0.07			
1. Age	1.54	0.34	-0.14	0.03	0.01	0.05	0.12	-0.03		
1. Size	4.16	1.41	-0.15*	0.00	-0.14	-0.02	0.04	0.30***	0.21**	
1. Asset growth	-0.002	1.07	0.15*	-0.02	-0.01	0.04	-0.04	0.89***	-0.02	0.22**
1. Leverage	0.49	0.21	-0.02	-0.10	0.00	-0.08	-0.01	0.03	0.02	0.37***
1. Funding diversity	4.37	0.91	0.04	0.01	0.03	0.02	0.06	-0.02	0.02	-0.05
										0.08

Notes: Significance levels (two-tailed): * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

The square roots of the average variance extracted (AVE) are shown on the diagonal and correlations are shown off-diagonal. The square roots of AVE are significantly larger than the correlations, indicating discriminant validity among the key constructs.

Age is the log-transformed number of years of operation; Size is the log-transformed number of full-time employees; Asset growth is the log difference between the total assets reported in 2017 and 2018; Leverage is the ratio between total liabilities and total assets; Funding diversity is the number of revenue sources.

by various researchers (e.g., Chen *et al.*, 2019; Harrison & Baird, 2015; Sarros *et al.*, 2005; Subramaniam & Ashkanasy, 2001), and has demonstrated strong psychometric properties of validity and reliability.

Attention to detail culture was measured using three items, innovation culture using five items, and respect for people culture using four items. The items are also shown in Table 1. Respondents were asked to indicate the extent to which each of the items was valued in their organisations on a seven-point scale anchored at '1 = Not valued at all' and '7 = Valued to a very great extent'. Exploratory factor analysis supported the cultural dimensions of the OCP, including the three dimensions in focus. As reported in Table 1, reliability of the measure of each dimension is supported by Cronbach alpha scores of 0.810, 0.843, and 0.841 for attention to detail, innovation and respect for people cultures, respectively.

3.2.2 | Revenue growth

Our objective financial performance data (for the dependent variable) addresses the concerns associated with the use of subjective assessment of organisational performance, as argued in both MCS studies (e.g., Grafton *et al.*, 2010) and culture-performance studies (e.g., O'Reilly *et al.*, 2014). Using the reported data in the organisations' AIS, revenue growth was measured as the log difference between total revenue for the year of 2018 relative to 2017, which coincides with the time of our survey.

With respect to the control variables, organisational age and size, measured as the log-transformed number of years of operation and full-time employees, respectively, were controlled because older (i.e., more experienced) and larger organisations may have higher revenue growth than younger and smaller organisations (Zhai *et al.*, 2017). Total asset growth, measured as the log difference between total assets reported in 2017 and 2018, was controlled consistent with past research because asset growth tends to be accompanied by revenue growth (Shea & Wang, 2016). We controlled for the potential of leverage to induce revenue growth (Jermias, 2008), with leverage measured as the ratio of total liabilities to total assets. Funding diversity, measured as the number of funding sources, was controlled because the greater the number of funding sources, the greater the ability of the organisation to attract revenue (Zhai *et al.*, 2017).

4 | RESULTS

Table 2 presents the descriptive statistics for all variables, the correlation matrix, and a discriminant validity check for the focal variables. We observed a high correlation between the interactive and diagnostic use of PMS. This is consistent with prior studies (e.g., Bedford, 2015; Bedford *et al.*, 2016; Guenther & Heinicke, 2019; Heinicke *et al.*, 2016; Henri, 2006b; Widener, 2007). Nonetheless, to lend assurance that multicollinearity is not a concern for our study, the variance inflation factors (VIF) were calculated in all models. The results showed that the highest VIF score is 3.54, well below the suggested threshold of 10 (Bedford *et al.*, 2016; Guenther & Heinicke, 2019; Heinicke *et al.*, 2016). Table 2 also shows that for interactive and diagnostic uses of PMS and the cultural dimensions, the square roots of the AVEs were greater than the correlations, suggesting the constructs are discriminant to each other.

Following Marginson *et al.* (2010) and Bedford *et al.* (2016), multivariate hierarchical regression analyses were conducted to examine the main effects of the interactive and diagnostic uses of PMS, preceding examination of the moderating effects of the organisational cultures of attention to detail, innovation, and respect for people. Table 3 reports the results for three

models, with Model 1 having the control variables only and Models 2 and 3 adding the main effects and the interaction effects, respectively.

As illustrated by Model 1, the effects of organisational size and total asset growth are positively associated with the organisation's revenue growth ($\beta_{\text{Size}} = 0.12, p < 0.01$, and $\beta_{\text{Asset growth}} = 0.69, p < 0.05$, respectively). Contrary to the suggestion of prior studies, organisational age and funding diversity are not significantly associated with revenue growth.

Model 2 results show that the interactive use of PMS is positively associated with organisations' revenue growth ($\beta_{\text{Interactive}} = 0.13, p < 0.10$), supporting H1, and the diagnostic use of PMS is negatively associated with revenue growth ($\beta_{\text{Diagnostic}} = -0.15, p < 0.05$), supporting H2. With respect to the combinatorial effects of culture and use of PMS, Model 3 results show that the interactive (diagnostic) use of PMS in a culture of attention to detail is positively (negatively) associated with revenue growth ($\beta_{\text{Interactive} \times \text{Attention to detail}} = 0.12, p < 0.05$; $\beta_{\text{Diagnostic} \times \text{Attention to detail}} = -0.15, p < 0.05$), supporting both H3 and H4. The diagnostic use of PMS in a culture of innovation is positively associated with revenue growth ($\beta_{\text{Diagnostic} \times \text{Innovation}} = 0.17, p < 0.05$), supporting H6, but the combinatorial effect of the interactive use of PMS and a culture of innovation is not significant and contrary to the expectation in H5. The interactive (diagnostic) use of PMS in a culture of respect for people is positively (negatively) associated with revenue growth ($\beta_{\text{Interactive} \times \text{Respect for people}} = 0.15, p < 0.10$; $\beta_{\text{Diagnostic} \times \text{Respect for people}} = -0.20, p < 0.05$), supporting both H7 and H8.

TABLE 3 Results of hierarchical regression analyses

	Revenue growth		
	Model 1	Model 2	Model 3
Size	0.12***	0.10***	0.10***
Age	-0.19	-0.17	-0.16
Asset growth	0.69**	0.80**	0.82***
Leverage	-0.19	-0.08	-0.10
Funding diversity	0.03	0.04	0.02
Interactive		0.13*	0.16**
Diagnostic		-0.15**	-0.19**
Attention to detail culture		-0.08**	-0.07*
Innovation culture		0.08	0.08
Respect for people culture		-0.06	-0.05
Interactive \times attention to detail			0.12**
Diagnostic \times attention to detail			-0.15**
Interactive \times innovation			-0.10
Diagnostic \times innovation			0.17**
Interactive \times respect for people			0.15*
Diagnostic \times respect for people			-0.20**
R^2	0.10	0.15	0.22
Adjusted R^2	0.07	0.10	0.15
F Statistic	3.76***	3.02***	2.95***

Notes: Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Age is the log-transformed number of years of operation; Size is the log-transformed number of full-time employees; Asset growth is the log difference between the total assets reported in 2017 and 2018; Leverage is the ratio between total liabilities and total assets; Funding diversity is the number of revenue sources.

5 | DISCUSSION

As discussed in the Introduction, managers in NFP aged care organisations face the challenge of generating sustainable revenue streams through, *inter alia*, the development of new or additional services, in order to survive and succeed in a market-driven, competitive environment, while operating within a compliance context constrained by rules and standards. The results of our study into the direct relations between the interactive and diagnostic uses of PMS and NFPs' revenue growth, and the combinatorial effects of the uses of PMS and organisational culture on revenue growth, provide insight into addressing this managerial challenge.

First, we found empirical evidence that interactive use of PMS enhances an organisation's performance in revenue growth. The positive association between the interactive use of PMS and revenue growth indicates that it is beneficial for NFPs to practise PMS in an interactive fashion. That is, it is important for NFP top management to engage with all levels of employees, through the use of open dialogue, debates, and meetings, to facilitate information exchange and continuous learning in the search for new opportunities in services and service delivery, which, in turn, will help generate more revenue to sustain their operations.

Second, our results show that the diagnostic use of PMS is negatively associated with NFP aged care organisations' revenue growth. Although diagnostic control gives rise to learning, such learning is restricted to maintaining current capabilities instead of developing new capabilities (Ferreira & Otley, 2009; Henri, 2006b; Simons, 2000; Widener, 2007), meaning that 'current performance is built on existing strengths that can decay or erode over time due to mismanagement of activities, (or) changes in the environment' (Grafton *et al.*, 2010, p. 694, citing Simons, 2000). Our finding suggests that emphasis on the diagnostic use of PMS may lead to a narrow focus on meeting pre-set performance targets, instead of stimulating employees to develop new organisational capabilities of service and service delivery, hence hindering revenue growth (Deschamps, 2019; Dunk, 2011; Henri, 2006b; Marginson *et al.*, 2014).

Third, the associations found between the combinations of the interactive and diagnostic uses of PMS and organisational cultures of attention to detail, innovation, and respect for people highlight the importance of using and matching both formal (PMS) and informal (culture) controls in order to achieve revenue growth in the particular environment of the NFP aged care context.

We found a positive effect on revenue growth of the interactive use of PMS in an organisational culture of attention to detail. This result indicates that, through managerial involvement, the interactive use of PMS facilitates attention-focusing on organisational objectives and offers psychological safety to employees in voicing gaps in care provision, and acting on emerging opportunities to improve client welfare outcomes. In this way, employees are more likely to perceive that rules, procedures and standards, emphasised in a culture of attention to detail, are necessary as they help maintain a required level of service delivery quality, but malleable when changes and innovations are required to enhance the overall service quality, and subsequently revenue growth.

Interactive use of PMS in a culture of attention to detail also enhances organisational learning and allows the combination of creativity and detail to interact in the identification and exploration of opportunities that may not be overtly visible. For example, The Willochra Home, an Anglican retirement home in South Australia, identified and implemented the innovation of the Sunshine Garden, a sensory garden for clients with dementia. Although just one, small, example of a service innovation in aged care, the combination of creativity and detail, facilitated by discussion involving managers and employees at the home, produced an award-winning facility of a restraint-free, nurturing and sustaining environment for dementia sufferers based on the careful selection of the most appropriate types of scented flowers and herbs.

We also found that the combination of the diagnostic use of PMS and a culture of attention to detail is negatively associated with revenue growth. This finding suggests that

a combination of a culture, focusing on details and compliance, and the diagnostic use of PMS, emphasising detecting and rectifying deviations, may engender and reinforce employees' perceptions that the use of PMS is part of bureaucratic control, therefore potentially leading to employees' resistance, de-motivation or dysfunctional behaviour, which will negatively affect innovation in the enhancement of services, leading to client attrition and revenue shrinkage.

Further, we found a positive effect on revenue growth of the diagnostic use of PMS in a culture of innovation. This result indicates that, in the market-driven and compliance environment of aged care, the diagnostic use of PMS provides control mechanisms (reviewing key measures for organisational goals and objectives, and monitoring and comparing outcomes against those goals and objectives) that serve to focus on innovations that are consistent with pre-set goals and objectives. Hence, similar to the ability of the combination of the interactive use of PMS and a culture of attention to detail to achieve simultaneity of creativity and care level compliance, a culture of innovation would appear to require the formal control of diagnostic use of PMS to achieve the same simultaneous balance between innovation (creativity) and the maintenance of standards (compliance). This balance, together with the ability of the combination of an innovation culture and the diagnostic use of PMS to allow the exploration and experimentation with solutions by learning from mistakes, yields innovations that are value-adding for existing clients who are likely to be prepared to pay higher fees for the new and innovative services and for attracting new clients, with, in turn, a positive effect on revenue growth.

While this finding for the combinatorial effect of the diagnostic use of PMS and a culture of innovation was consistent with the hypothesis, the finding of a non-significant effect for the combination with the interactive use was contrary to that hypothesised. It may be that where an organisational culture of innovation is prevalent, the presence of formally documented and structured controls inherent in the diagnostic use of PMS is more important in directing innovations that lead to revenue growth than the less structured and more ambiguous controls in the interactive use (Müller-Stewens *et al.*, 2020; Zirger & Maidique, 1990). However, this is speculative and further research will be important to further examine the combination of an innovation culture and the interactive use of PMS generally and in the aged care context specifically.

Finally, we found a positive effect on revenue growth of the combination of the interactive use of PMS and a culture of respect for people, and a negative effect of the combination of diagnostic use of PMS and this culture. The former result is consistent with our hypothesis and expectation that the interactive use of PMS provides an ongoing forum of exchange between managers and care employees that stimulates and promotes innovations in individualised, client-centric care, and that frames the additional costs of those innovations as value-adding. Our results show that this combination of control and culture generates two outcomes. One is the stimulus for managers to seek creative solutions for financing those innovations through higher fees for service for financially capable clients or through lobbying for government to finance the innovations. The other, related, outcome is the provision of enhanced, individualised care services that are valued by clients, leading to revenue growth through the attraction of new clients and the preparedness to pay higher fees for new or innovative services by existing clients.

The latter result, the finding of a negative effect on revenue growth of the combination of the diagnostic use of PMS and a culture of respect for people, is also consistent with our hypothesis and expectation. This result supports the premise that this combination of control and culture frames potential enhancements to, and innovations in, care services as added costs, resulting in deviations from pre-set budgetary targets and, hence, producing focus on the maintenance of an organisation's existing capabilities and service levels. The consequence is a loss of competitiveness in the market, resulting in a loss of revenue.

6 | CONCLUSION

This study examined the effect of performance measurement systems (PMS) and organisational culture on revenue growth in not-for-profit organisations (NFPs) in the aged care sector in Australia. The study was motivated by the fact that, while several studies have examined the effect of PMS on NFPs' social mission performance, no prior study has examined the combinatorial effect of both formal control (PMS) and informal control (organisational culture) on NFPs' financial performance (revenue growth).

The study used both survey and archival data to provide evidence that the interactive use of PMS is positively associated with the performance outcome of revenue growth for NFPs in the aged care sector in Australia, but that the diagnostic use of PMS is negatively associated with revenue growth. The study also provides evidence that revenue growth may be positively or negatively affected for NFPs in this sector by different relative emphases on the interactive and diagnostic use of PMS in organisational cultures differentially characterised by attention to detail, innovation, and respect for people.

The study has important implications for the literature in terms of understanding the combinatorial effects of formal control and organisational culture on organisational performance generally, and in the NFP aged care sector specifically. The study also has implications for management of NFPs, again both generally and in the aged care sector specifically, with respect to designing PMS that accord with, and complement, those organisations' cultures to enhance financial performance through the fostering of innovation in services and service delivery while ensuring that those innovations are consistent with the quality-of-care objectives and focus of the aged care sector.

Our findings suggest that, in an organisational culture of innovation, relative emphasis should be placed on the diagnostic use of the PMS, while in a culture of attention to detail or one of respect for people, emphasis should be placed on the interactive use of PMS. Our results show that these combinations yield enhanced revenue growth, theorised as arising from the ability of these combinations to provide the internal organisational environment to yield value-adding changes and innovations that either attract new clients and/or generate higher fees from existing clients.

Organisational cultures are not immutable or impermeable. They can be created, moulded and embedded throughout an organisation by top management through a number of culture-embedding mechanisms (see, for example, Schneider *et al.*, 2013) with the objective of using organisational culture as a powerful tool to shape employee attitudes and behaviours to accord with top management's perspective of the needs of their organisations.

In the NFP aged care context, and depending on their circumstance and environment, top management may see it as important to emphasise innovation (or attention to detail or respect for people) to a greater or lesser degree relative to other cultural dimensions. Our findings suggest that once a determination of the preferred organisational culture(s) has been made, top management can then design or implement their MCS to accord with their preferred organisational culture to effect innovation, financial viability, and revenue growth.

The study is subject to several limitations giving rise to opportunities for future research. One is the reliance on cross-sectional data. We sourced data on the independent variables from survey questionnaires, and on the dependent variable from objective archival sources. While the use of objective sources of data overcame the problem of common method bias, as with all cross-sectional studies generally, and in management control and organisational culture studies specifically, we can only conclude associations between the independent and dependent variables. In this respect, our research provides important evidence that, on average and among our sample NFPs, the differential uses of performance measurement systems are significantly associated with revenue growth, and these associations are also significantly moderated by organisational cultures. Given the nature of the cross-sectional analysis, future research can examine our findings using different samples and different time periods to test the robustness of those findings.

In addition, future research may pursue longitudinal studies of case organisations and/or a panel analysis, to investigate the relations between performance measurement systems and organisational culture and revenue growth. Based on our research, future longitudinal studies of case organisations may also focus on aged care providers in the NFP sector, and explore pertinent research questions, such as over time how the changes in PMS and organisational cultures influence revenue growth. While the focus on how changes affect organisational outcomes is an entirely different research question, it will nonetheless provide overall support to our assertions that cultures and control systems are important elements that can be used to stimulate organisational growth. What would be even better is the possibility to conduct these change analyses on a large scale over time to further understand the dynamic relations between cultures, controls and organisational outcomes. However, research of this nature will be challenging. In particular, changes in cultures are considered to be a lot slower than changes in the formal control systems. Therefore, it is advisable to accumulate data over a longer time frame (e.g., five to ten years) to understand how the evolutions of control systems manifest within the evolution of organisational cultures, and then how changes in controls and cultures affect organisational performance.

Furthermore, while we chose the outcome variable of revenue growth deliberately for several reasons, one of which was the importance of such a financial measure in its own right for NFPs in the aged care sector, future research may well address other important outcome variables. These may include social performance, service quality and compliance with regulations. As noted in the Introduction, studies have already examined the relation between the use of PMS and NFPs' social and client performance. However, there are clearly opportunities for further research into these important areas of NFPs generally and NFPs in the aged care sector specifically.

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DATA AVAILABILITY STATEMENT

The data collected for this study include both: (i) survey-based data; and (ii) archival data (which provides an objective measure of revenue growth). The survey-based data are bounded by confidentiality for survey respondents and their answers, in accordance with Macquarie University's human ethics requirements. The archival data, provided by the Australian Charities and Not-for-profits Commission (the regulator of charitable and not-for-profit organisations in Australia), are publicly available through the Australian Government data provision website at <https://data.gov.au/>

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REFERENCES

- Adler, P.S. & Chen, C.X. (2011) Combining creativity and control: understanding individual motivation in large-scale collaborative creativity. *Accounting, Organizations and Society*, 36(2), 63–85.
- Ahrens, T. (2018) Management controls that anchor other organizational practices. *Contemporary Accounting Research*, 35(1), 58–86.
- Arjaliès, D.L. & Mundy, J. (2013) The use of management control systems to manage CSR strategy: a levers of control perspective. *Management Accounting Research*, 24(4), 284–330.
- Aschari-Lincoln, J. & Jäger, U.P. (2016) Analysis of determinants of revenue sources for international NGOs: influence of beneficiaries and organizational characteristics. *Nonprofit and Voluntary Sector Quarterly*, 45(3), 612–629.
- Baird, K.M. & Harrison, G.L. (2017) The association between organizational culture and the use of management initiatives in the public sector. *Financial Accountability and Management*, 33(3), 311–329.
- Bedford, D.S. (2015) Management control systems across different modes of innovation: implications for firm performance. *Management Accounting Research*, 28, 12–30.

- Bedford, D.S., Malmi, T. & Sandelin, M. (2016) Management control effectiveness and strategy: an empirical analysis of packages and systems. *Accounting, Organizations and Society*, 51, 12–28.
- Berry, A.J., Coad, A.F., Harris, E.P., Otley, D.T. & Stringer, C. (2009) Emerging themes in management control: a review of recent literature. *The British Accounting Review*, 41(1), 2–20.
- Bhuiyan, F., Baird, K. & Munir, R. (2020) The association between organisational culture, CSR practices and organisational performance in an emerging economy. *Meditari Accountancy Research*, 28(6), 977–1011.
- Bisbe, J. & Malagueño, R. (2009) The choice of interactive control systems under different innovation management modes. *European Accounting Review*, 18(2), 371–405.
- Bisbe, J. & Otley, D. (2004) The effects of the interactive use of management control systems on product innovation. *Accounting, Organizations and Society*, 29(8), 709–737.
- Budianto, R. & Yuliansyah, X. (2014) An empirical assessment of interactive use of performance measurement system, organizational learning and firm performance. *Journal of Business Review*, 3(2), 44–53.
- Chen, J., Jiao, L. & Harrison, G. (2019) Organisational culture and enterprise risk management: the Australian not-for-profit context. *Australian Journal of Public Administration*, 78(3), 432–448.
- Chenhall, R.H., Hall, M. & Smith, D. (2010) Social capital and management control systems: a study of a non-government organization. *Accounting, Organizations and Society*, 35(8), 737–756.
- Chenhall, R.H., Hall, M. & Smith, D. (2013) Performance measurement, modes of evaluation and the development of compromising accounts. *Accounting, Organizations and Society*, 38(4), 268–287.
- Chenhall, R.H., Hall, M. & Smith, D. (2016) Managing identity conflicts in organizations: a case study of one welfare nonprofit organization. *Nonprofit and Voluntary Sector Quarterly*, 45(4), 669–687.
- Chenhall, R.H., Hall, M. & Smith, D. (2017) The expressive role of performance measurement systems: a field study of a mental health development project. *Accounting, Organizations and Society*, 63, 60–75.
- Chenhall, R.H., Kallunki, J.P. & Silvola, H. (2011) Exploring the relationships between strategy, innovation, and management control systems: the roles of social networking, organic innovative culture, and formal controls. *Journal of Management Accounting Research*, 23(1), 99–128.
- Chenhall, R.H. & Morris, D. (1995) Organic decision and communication processes and management accounting systems in entrepreneurial and conservative business organizations. *Omega*, 23(5), 485–497.
- De Bellis, A. (2010) Opinion piece: Australian residential aged care and the quality of nursing care provision. *Contemporary Nurse*, 35(1), 100–113.
- De Harlez, Y. & Malagueño, R. (2016) Examining the joint effects of strategic priorities, use of management control systems, and personal background on hospital performance. *Management Accounting Research*, 30, 2–17.
- Denison, D.V., Yan, W. & Butler, J.S. (2019) Managing risk and growth of nonprofit revenue. *Journal of Public and Nonprofit Affairs*, 5(1), 56–73.
- Deschamps, C. (2019) Stages of management control in a large public organization: from top to frontline managers. *Journal of Management Control*, 30(2), 153–184.
- Dillman, D.A., Smyth, J.D. & Christian, L.M. (2009) *Internet, mail, and mixed-mode surveys: The tailored design method*. Hoboken, NJ: John Wiley and Sons Inc.
- Dunk, A. (2011) Product innovation, budgetary control, and the financial performance of firms. *The British Accounting Review*, 43(2), 102–111.
- Ebrahim, A. & Rangan, V.K. (2014) What impact? A framework for measuring the scale and scope of social performance. *California Management Review*, 56(3), 118–141.
- Egan, N. (2016) *Aged care organisations could look within for new income streams*. Available at: <https://www.austrianageingagenda.com.au/executive/aged-care-organisations-could-look-within-for-new-income-streams/>
- Ferreira, A. & Otley, D. (2009) The design and use of performance management systems: an extended framework for analysis. *Management Accounting Research*, 20(4), 263–282.
- Froelich, K.A. (1999) Diversification of revenue strategies: evolving resource dependence in nonprofit organizations. *Nonprofit and Voluntary Sector Quarterly*, 28(3), 246–268.
- Galer, G. & Van Der Heijden, K. (1992) The learning organization: how planners create organizational learning. *Marketing Intelligence & Planning*, 10, 5–12.
- Grafton, J., Lillis, A.M. & Widener, S.K. (2010) The role of performance measurement and evaluation in building organizational capabilities and performance. *Accounting, Organizations and Society*, 35(7), 689–706.
- Green, J. & Dalton, B. (2016) Out of the shadows: using value pluralism to make explicit economic values in not-for-profit business strategies. *Journal of Business Ethics*, 139(2), 299–312.
- Guenther, T.W. & Heinicke, A. (2019) Relationships among types of use, levels of sophistication, and organizational outcomes of performance measurement systems: the crucial role of design choices. *Management Accounting Research*, 42, 1–25.
- Hall, M. (2017) Do business practices help or hinder the management of non-profits? *Third Sector Review*, 23(2), 5–24.
- Harrison, G.L. & Baird, K.M. (2015) The organizational culture of public sector organizations in Australia. *Australian Journal of Management*, 40(4), 613–629.
- Harrison, G., Jiao, L. & Chen, J. (2021) Performance measurement systems and client performance in fee-generating not-for-profit human service organizations. *Accounting and Finance*, <https://doi.org/10.1111/acfi.12814>

- Heinicke, A., Guenther, T.W. & Widener, S.K. (2016) An examination of the relationship between the extent of a flexible culture and the levers of control system: the key role of beliefs control. *Management Accounting Research*, 33, 25–41.
- Henderson, E. & Lambert, V. (2018) Negotiating for survival: balancing mission and money. *The British Accounting Review*, 50(2), 185–198.
- Henri, J.F. (2006a) Management control systems and strategy: a resource-based perspective. *Accounting, Organizations and Society*, 31(6), 529–558.
- Henri, J.-F. (2006b) Organizational culture and performance measurement systems. *Accounting, Organizations and Society*, 31, 77–103.
- Hult, G.T.M. (1998) Managing the international strategic sourcing process as a market-driven organizational learning system. *Decision Sciences*, 29(1), 193–216.
- Hung, C. & Hager, M.A. (2019) The impact of revenue diversification on nonprofit financial health: a meta-analysis. *Nonprofit and Voluntary Sector Quarterly*, 48(1), 5–27.
- Hyndman, N. & McKillop, D. (2018) Public services and charities: accounting, accountability and governance at a time of change. *The British Accounting Review*, 50(2), 143–148.
- Jaskyte, K. (2011) Predictors of administrative and technological innovations in nonprofit organizations. *Public Administration Review*, 71(1), 77–86.
- Jaskyte, K. (2020) Technological and organizational innovations and financial performance: evidence from nonprofit human service organizations. *VOLUNTAS: International Journal of Voluntary and Nonprofit Organizations*, 31(1), 42–152.
- Jermias, J. (2008) The relative influence of competitive intensity and business strategy on the relationship between financial leverage and performance. *The British Accounting Review*, 40(1), 71–86.
- Jiao, L. (2021) Multifaceted not-for-profit accountability: its measurement, cultural context, and impact on perceived social performance. *Financial Accountability & Management*, 37(3), 303–322.
- Jiao, L., Harrison, G. & Chen, J. (2020) Cultural transition and organizational performance: the non-profit context. *Public Money & Management*. <https://doi.org/10.1080/09540962.2020.1811510>
- Kaine, S. & Green, J. (2013) Outing the silent partner: espousing the economic values that operate in not-for-profit organizations. *Journal of Business Ethics*, 118(1), 215–225.
- Khazanchi, S., Lewis, M.W. & Boyer, K.K. (2007) Innovative-supportive culture: the impact of organizational values on process innovation. *Journal of Operations Management*, 25(4), 871–884.
- Kim, M.Y., Oh, H.G. & Park, S.M. (2018) How to encourage employees' acceptance of performance appraisal systems in Korean nonprofit organizations? An empirical exploration of the influence of performance monitoring systems and organizational culture. *Nonprofit and Voluntary Sector Quarterly*, 47(5), 1007–1030.
- Koufteros, X., Vergheze, A.J. & Lucianetti, L. (2014) The effect of performance measurement systems on firm performance: a cross-sectional and a longitudinal study. *Journal of Operations Management*, 32, 313–336.
- Kraus, K., Kennergren, C. & von Unge, A. (2017) The interplay between ideological control and formal management control systems – a case study of a non-governmental organisation. *Accounting, Organizations and Society*, 63, 42–59.
- Laitinen, E.K., Lämsiluoto, A. & Salonen, S. (2016) Interactive budgeting, product innovation, and firm performance: empirical evidence from Finnish firms. *Journal of Management Control*, 27(4), 293–322.
- Lebas, M. & Weigenstein, J. (1986) Management control: the roles of rules, markets and culture. *Journal of Management Studies*, 23(3), 259–272.
- Lee, C. & Clerkin, R.M. (2017) The adoption of outcome measurement in human service nonprofits. *Journal of Public and Nonprofit Affairs*, 3(2), 111–134.
- Love, E.G. & Cebon, P. (2008) Meanings on multiple levels: the influence of field-level and organizational-level meaning systems on diffusion. *Journal of Management Studies*, 45(2), 239–267.
- Lövstål, E. & Jontoft, A.M. (2017) Tensions at the intersection of management control and innovation: a literature review. *Journal of Management Control*, 28(1), 41–79.
- Marginson, D., McAulay, L., Roush, M. & Van Zijl, T. (2010) Performance measures and short-termism: an exploratory study. *Accounting and Business Research*, 40(4), 353–370.
- Marginson, D., McAulay, L., Roush, M. & van Zijl, T. (2014) Examining a positive psychological role for performance measures. *Management Accounting Research*, 25(1), 63–75.
- Mitchell, G.E. & Calabrese, T.D. (2019) Proverbs of nonprofit financial management. *The American Review of Public Administration*, 49(6), 649–661.
- Müller-Stewens, B., Widener, S.K., Möller, K. & Steinmann, J.C. (2020) The role of diagnostic and interactive control uses in innovation. *Accounting, Organizations and Society*, 80, 101078.
- Mundy, J. (2010) Creating dynamic tensions through a balanced use of management control systems. *Accounting, Organizations and Society*, 35, 499–523.
- Norman, R. (2001) Letting and making managers manage: the effect of control systems on management action in New Zealand's central government. *International Public Management Journal*, 4(1), 65–89.

- O'Reilly, C., Chatman, J. & Caldwell, D. (1991) People and organisational culture: a profile comparison approach to assessing person-organisation fit. *Academy of Management Journal*, 34, 487–516.
- O'Reilly, C.A. III, Caldwell, D.F., Chatman, J.A. & Doerr, B. (2014) The promise and problems of organizational culture: CEO personality, culture, and firm performance. *Group and Organization Management*, 39(6), 595–625.
- Otley, D. (2016) The contingency theory of management accounting and control: 1980–2014. *Management Accounting Research*, 31, 45–62.
- Pavlov, A. & Bourne, M. (2011) Explaining the effects of performance measurement on performance: an organizational routines perspective. *International Journal of Operations & Production Management*, 31(1), 101–122.
- Pilonato, S. & Monfardini, P. (2020) Performance measurement systems in higher education: how levers of control reveal the ambiguities of reforms. *The British Accounting Review*, 52(3), 100908. <https://doi.org/10.1016/j.bar.2020.100908>
- Sarros, J.C., Gray, J., Densten, I.L. & Cooper, B. (2005) The organizational culture profile revisited and revised: an Australian perspective. *Australian Journal of Management*, 30(1), 159–182.
- Schneider, B., Ehrhart, M.G. & Macey, W.H. (2013) Organizational climate and culture. *Annual Review of Psychology*, 64, 361–388.
- Schreyögg, G. & Steinmann, H. (1987) Strategic control: a new perspective. *Academy of Management Review*, 12(1), 91–103.
- Shea, J. & Wang, J.Q. (2016) Revenue diversification in housing nonprofits: impact of state funding environments. *Nonprofit and Voluntary Sector Quarterly*, 45(3), 548–567.
- Simons, R. (1995) *Levers of control*. Harvard Business School Press.
- Simons, R. (2000) *Performance measurement and control systems for implementing strategy*. Prentice Hall.
- Speklé, R.F., van Elten, H.J. & Widener, S.K. (2017) Creativity and control: a paradox - evidence from the levers of control framework. *Behavioral Research in Accounting*, 29(2), 73–96.
- Strauß, E. & Zecher, C. (2013) Management control systems: a review. *Journal of Management Control*, 23(4), 233–268.
- Subramaniam, N. & Ashkanasy, N.M. (2001) The effect of organisational culture perceptions on the relationship between budgetary participation and managerial job-related outcomes. *Australian Journal of Management*, 26(1), 35–54.
- Subramaniam, N., Lowe, A., Nama, Y., West, R., Subramaniam, R. & Mayne, K. (2018) *Mergers, amalgamations and acquisitions in the Australian not-for-profit human services sector*. RMIT University-GAL and CPA Australia.
- Tessier, S. & Otley, D. (2012) A conceptual development of Simons' levers of control framework. *Management Accounting Research*, 23(3), 171–185.
- van der Borg, W., Verdonk, P., Dauwerse, L. & Abma, T.A. (2017) Work-related change in residential elderly care: trust, space and connectedness. *Human Relations*, 70(7), 805–835.
- Verbeeten, F.H. & Speklé, R.F. (2015) Management control, results-oriented culture and public sector performance: empirical evidence on new public management. *Organization Studies*, 36(7), 953–978.
- Weerawardena, J., McDonald, R.E. & Mort, G.S. (2010) Sustainability of nonprofit organizations: an empirical investigation. *Journal of World Business*, 45(4), 346–356.
- Weerawardena, J. & Mort, G.S. (2006) Investigating social entrepreneurship: a multidimensional model. *Journal of World Business*, 41, 21–35.
- Widener, S.K. (2007) An empirical analysis of the levers of control framework. *Accounting, Organizations and Society*, 32(7–8), 757–788.
- Windsor, C. & Ashkanasy, N. (1996) Auditor independence decision making: the role of organizational culture perceptions. *Behavioral Research in Accounting*, 9(Suppl), 80–97.
- Zhai, R.L., Watson, J., Gilchrist, D. & Newby, R. (2017) Non-profit vulnerability: an exploratory study. *Financial Accountability and Management*, 33(4), 373–390.
- Zhang, L. & Yu, W. (2020) Effects of the interactive use of performance systems on job performance: mediation effect of organizational learning. *Frontiers in Psychology*, 10, 1–9.
- Zirger, B.J. & Maidique, M.A. (1990) A model of new product development: an empirical test. *Management Science*, 36(7), 867–883.

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