

# **The Use and Effectiveness of Management Innovation**

by

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A thesis submitted in fulfilment of the requirement for the degree of Doctor of Philosophy

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# STATEMENT

I hereby certify that this thesis is the result of my own research to fulfill the requirement for the degree of Doctor of Philosophy in Accounting and Corporate Governance at Macquarie University. This work has not, nor has any part of it, been submitted for a degree at any other university or institution. To the best of my knowledge and belief, this thesis contains no published or unpublished materials written by another person, except where due reference is cited in this thesis. This thesis has received ethics approval from the Ethics Review Committee (Human Research) at Macquarie University (Reference number: 5201835814837).

Salha M. Alshumrani

August 2021

# DEDICATION

This thesis is dedicated to the memory of the most powerful woman in my life, who was my best friend, my inspired ideal and my greatest mentor:

My Mother

Hamsa

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# LIST OF ABBREVIATIONS

ABM	Activity-Based Management
AGFI	Adjusted Goodness-of-Fit Index
AMOS	Analysis of Moment Structures
AT&T	American Telephone and Telegraph Company
AVE	Average variance extracted
BSC	Balanced Scorecard
CFA	Confirmatory factor analysis
CFI	Comparative Fit Index
CI	Confidence interval
CMIN/DF	Minimum discrepancy per degree of freedom
CR	Composite reliability
CRM	Customer relationship management
DCF	Discounted cash flow
EFA	Exploratory factor analysis
EMA	Environmental Management Accounting
ERP	Enterprises resource planning
EVA	Economic value added
GE	General Electric
GFI	Goodness-of-Fit Index
GM	General Motors
ISO	International Organisation for Standardisation

JIT	Just-in-time
LB	Lower bounds
P&G	Procter & Gamble
R&D	Research and development
RBV	Resource-based view
RMSEA	Root mean square error of approximation
SBU	Strategic Business Unit
SD	Standard deviation
SE	Standard error
SEM	Structure equation modelling
TDM	Tailored design method
TPS	Toyota production system
TQM	Total Quality Management
UB	Upper bounds
US	United States
VCA	Value Chain Analysis

# ABSTRACT

The objective of this thesis is to examine the antecedents and outcomes of the use of management innovation. Specifically, this thesis examines the contingency factors influencing the use of management innovation, including the role of employees (employee empowerment, organisational identification and employee organisational commitment) and institutional pressures (coercive, mimetic and normative). Further, the thesis examines the outcomes of management innovation by examining the impact of the use of management innovation on organisational performance and competitive advantage. In addition, this thesis examines the mediating role of organisational dynamic capabilities (strategic flexibility and research and development (R&D) competence) in the association between management innovation and organisational performance.

Data were collected using mail and online surveys distributed to middle-level managers in Australian organisations across different industries and was analysed using structural equation modelling.

The thesis follows the “*Thesis by publication*” format to present three academic papers. The aim of Paper One is to investigate the role of employees in driving the use of management innovation. Specifically, Paper One examines the influence of employee empowerment on the use of management innovation and the mediating role of organisational identification and employee organisational commitment in the relationship between employee empowerment and management innovation. The findings extend the management innovation literature and the contingency-based literature by providing an empirical insight into the influence of contingency factors on the use of management innovation. Specifically, the results reveal that employee empowerment is positively associated with both the practice and techniques



dimensions of management innovation. In addition, the findings indicate that organisational identification partially mediates the relationship between employee empowerment and management innovation techniques, while employee organisational commitment (involvement) partially mediates the association between employee empowerment and management innovation practices. The findings of this paper contribute to the management innovation literature and contingency-based literature examining the antecedents of management innovation by providing an empirical insight into the vital role of employee empowerment, organisational identification and employee organisational commitment in driving the use of management innovation.

Paper Two is grounded on DiMaggio and Powell's perspective of institutional theory, examining the influence of institutional pressures (coercive, mimetic and normative) on the use of management innovation and the impact of management innovation on competitive advantage. The findings extend the management innovation literature and the contingency-based literature by examining the role of institutional pressures as contingency factors influencing the use of management innovation. Furthermore, the findings add to the body of literature examining the effectiveness of management innovation and extend the strategic management research by providing empirical evidence on the role of management innovation as a source of competitive advantage. The results reveal that the extent of use of management innovation is influenced by internal coercive and normative pressures. Specifically, internal coercive pressures in the form of directions from senior management, board of directors and the office head, as well as directions regarding the initiation of a new vision or mission and the implementation of new strategic plans, increase the extent of use of management innovation. Moreover, normative pressures exerted through compliance with standards and the recommendations of professional bodies regarding financial reporting or corporate governance

mechanisms, are found to increase the extent of use of management innovation in organisations. Further, the results indicate that the extent of use of management innovation practices and techniques has a positive influence on competitive advantage. The empirical findings of this paper extend the literature examining the factors influencing management innovation by highlighting the effect of institutional pressures on the use of management innovation. Furthermore, the findings contribute to the strategic management literature and the literature focusing on the effectiveness of management innovation by providing empirical evidence of the impact of management innovation on competitive advantage.

The purpose of Paper Three is to examine the effectiveness of management innovation by examining the mediating role of two organisational dynamic capabilities, strategic flexibility and R&D competence, in the association between management innovation and organisational performance. The findings contribute to the literature examining the effectiveness of management innovation by highlighting the impact of management innovation on organisational performance. Further, the findings contribute to the strategic management literature by providing an empirical insight into the mediating role of strategic flexibility and R&D competence in the association between management innovation and organisational performance. The results indicate that management practices and management techniques exert a positive influence on strategic flexibility and R&D competence. Furthermore, strategic flexibility is positively related to both financial and non-financial performance, while R&D competence is positively related to non-financial performance. Hence, strategic flexibility is found to mediate the association between management innovation (practices and techniques) with organisational performance (financial and non-financial), and R&D competence is found to mediate the association between management innovation (practices and techniques) with non-financial performance. These empirical findings contribute to the management innovation

literature examining the effectiveness of management innovation, and the strategic management literature emphasising the importance of organisational dynamic capabilities in enhancing organisational performance.

# CHAPTER 1

## INTRODUCTION

### 1.1 Background

Over the past few decades, organisations across multiple industries have experienced business-related challenges, such as the globalisation of business operations and services, the growth of markets, the increase in organisational complexity and competitiveness, changes in customer needs, resource scarcity and advances in technology and information systems (Xiu et al., 2017; Yu et al., 2015; Johnson et al., 2003; John et al., 2001; Dent, 1996; Volberda, 1996). Consequently, organisations and scholars alike have predominantly focused on technological innovation as a means of responding to these challenges and coping with emerging internal or external changes (Walker et al., 2015; Crossan & Apaydin, 2010; Damanpour et al., 2009; Birkinshaw et al., 2008). However recently, researchers have argued that the key to long-term organisational success lies in how organisations are managed, activities are coordinated, plans are setting, resources are allocated, and efforts are motivated (Damanpour & Aravind, 2012; Walker et al., 2011; Mol & Birkinshaw, 2008; Hamel, 2006). Accordingly, the concept of management innovation has emerged as a critical aspect of modern management, with numerous management innovations introduced over the last two decades (Birkinshaw et al., 2008; Mol & Birkinshaw, 2006, 2008; Hamel & Breen, 2007; Hamel, 2006; Birkinshaw & Mol, 2006). Although this concept has been defined in various ways by academics (see Table 1), it centres around the discovery of new and creative ways to manage organisations so as to increase their chances of survival and the sustainability of their market position (Volberda et al., 2013; Wu, 2010; Hamel, 2006; Barney, 1991). Specifically, management innovation involves the intentional implementation and use of innovative practices, processes, and

structures to achieve organisational objectives (Damanpour & Aravind, 2012; Mol & Birkinshaw, 2009; Birkinshaw et al., 2008; Hamel, 2006).

**Table 1.1 Definitions of management innovation**

Study	Definition
Hamel (2006, p. 75)	“A marked departure from traditional management principles, processes, and practices or a departure from customary organisational forms that significantly alters the way the work of management is performed”.
Birkinshaw et al. (2008, p. 825)	“The invention and implementation of a management practice, process, structure, or technique that is new to the state of the art and is intended to further organisational goals”.
Mol and Birkinshaw (2009, p. 1269)	“The introduction of management practices new to the firm and intended to enhance firm performance”.
Damanpour and Aravind (2012, p. 429-432)	“New approaches in knowledge for performing the work of management and new processes that produce changes in the organisation’s strategy, structure, administrative procedures, and systems”.
Volberda et al. (2013, p. 1)	“Management innovation consists of changing a firm’s organisational form, practices and processes in a way that is new to the firm and/or industry, and results in leveraging the firm’s technological knowledge base and its performance in terms of innovation, productivity and competitiveness”.

This study uses the integrative framework developed by Volberda et al. (2013) to conceptualise management innovation. In this framework, management innovation is conceived on the basis of four dimensions: new management practices, new management processes, new management structures and new management techniques<sup>1</sup>. Innovation in *management practices* involves

<sup>1</sup> This framework was conceptualised on the grounds of the Birkinshaw et al. (2008, p. 825) definition of management innovation.

implementing changes to day-to-day management work, such as setting new objectives and plans. Innovation in *management processes* entails using new routines and procedures to govern the management of work and activities, such as performance assessment, project management and strategic planning. Innovation in *management structures* includes redesigning and restructuring organisational communication systems, as is the case with the adoption of divisional and matrix structures. These three dimensions are measured in the current research using the Vaccaro et al. (2012) six-item instrument. Innovation in *management techniques* involves using tools, approaches, or methods to accomplish a specific task or objective. This dimension is measured using an instrument adapted from Baird et al. (2019) and Su and Baird (2018) and is based on the extent to which six contemporary innovative management initiatives are employed, namely, total quality management (TQM), the balanced scorecard (BSC), activity-based management (ABM), benchmarking, environmental management accounting (EMA) and value chain analysis (VCA).

The importance of management innovation for organisational success is rooted in its novelty as an intangible factor with a systemic nature, rendering it a firm-specific resource that is more difficult to imitate or replicate than other types of innovation (Camisón & Villar-López, 2014; Birkinshaw et al., 2008; Teece, 2007; Barney, 1991). Management innovation has also been identified as a key driver of competitive advantage (Volberda et al., 2013; Mol & Birkinshaw, 2009; Birkinshaw et al., 2008; Hamel, 2006). For instance, practical evidence shows that the use of management innovation has driven the success of numerous leading organisations in multiple industries. Specifically, enterprises have created and developed new management practices and techniques that enable them to efficiently and effectively operate and perform their processes, functions, and activities (Volberda et al., 2013; Damanpour & Aravind, 2012; Mol & Birkinshaw, 2008, 2009; Birkinshaw et al., 2008; Hamel, 2006).

In particular, Japanese corporations, especially automakers such as Toyota and Honda, have relied on management innovation to outperform their Western competitors (Hamel, 2006; Mol & Birkinshaw, 2006; Fane et al., 2003; Stata, 1989). For example, Toyota introduced management innovation called '*Lean Production*'<sup>2</sup> to manage its manufacturing process, which initiated a new competition paradigm (Mol & Birkinshaw, 2008; Hamel, 2006; Fane et al., 2003; Lillrank, 1995). This enables Toyota to enhance the flexibility and efficiency of its production by producing low-cost high-quality products, reducing production waste, building trust-based supplier networks and creating multi-skilled product development teams (Mol & Birkinshaw, 2008; Hamel, 2006; Fane et al., 2003; Lillrank, 1995). The company also manages its inventory using '*Just-in-Time (JIT)*' inventory management and other techniques, such as '*Target Costing*' and '*Kanban*'<sup>3</sup>.

In the US, the Ford Motor company was able to increase its productivity and cope with the increasing demands of customers by introducing its process management innovation '*Moving Assembly Line*' (Mol & Birkinshaw, 2008, 2014; Hammer & Stanton, 1999; Williams et al., 1993). Further, Ford introduced '*Strategic Planning*' to create plans for how they can exploit existing opportunities in its environment and overcome any unexpected environmental changes (Mol & Birkinshaw, 2008; Heracleous, 1998; Harrison, 1995). Similarly, Analog Devices created the first BSC (Mol & Birkinshaw, 2008; Kaplan & Norton, 1992, 1996; Stata, 1989), which became one of the most frequently applied contemporary performance measurement systems, both in profit and non-profit organisations.

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<sup>2</sup> Also called lean production or Toyota production system (TPS)

<sup>3</sup> Kanban is "a subsystem of the TPS, which was created to control inventory levels, the production and supply of components, and in some cases, raw material" (Junior & Godinho Filho, 2010, p. 13).

General Motors (GM) created a competitive advantage by initiating structure management innovations called '*M-form organisation*' and '*Market Segmentation*' (Mol & Birkinshaw, 2006, 2008; Hamel, 2006). Other examples of management innovation include '*Brand Management*' at Procter & Gamble, the '*Six Sigma*' methodology of Motorola, '*Supply Chain Management*' at Philips, '*Strategic Business Units (SBUs)*' and '*Work-out Groups*' at General Electric (GE) and '*Benchmarking*' at Xerox. In addition, innovations in management techniques have substantially changed the accounting and finance functions with the introduction of '*Activity-Based Costing (ABC)*' at John Deere, '*Beyond Budgeting*' at Svenska Handelsbanken, and '*Discounted Cash Flow Analysis (DCF)*' at AT&T (Mol & Birkinshaw, 2008; Birkinshaw & Mol, 2006). Today, these management innovations are used by many organisations with such innovations continuing to be recognised as a vital resource for managing business challenges and achieving a sustainable competitive advantage (Volberda et al., 2013; Walker et al., 2011; Damanpour et al., 2009; Birkinshaw et al., 2008; Mol & Birkinshaw, 2008; Hamel, 2006; Birkinshaw & Mol, 2006).

Given that management innovation is important for organisational survival and success, there has been a recent call to increase research focusing on this innovation. The studies on management innovation have been grouped into four main categories (Khosravi et al., 2019; Mol & Birkinshaw, 2009, 2014). The first revolves around the diffusion and transfer of specific management innovations such as the divisional management structure (Kogut & Parkinson, 1998; Teece, 1980), the BSC (Ax & Greve, 2017; Cooper et al., 2017; Ax & Bjørnenak, 2005), the quality control circle (Lillrank, 1995), TQM (Westphal et al., 1997), the ABC system (Malmi, 1999), ISO 9000 quality certification (Guler et al., 2002), and/or economic value added (EVA) as a performance management system (Chiwamit et al., 2017). This research also addresses how variations in the use of management innovation emerge as they diffuse across



organisations, industries and countries (Ansari et al., 2010, 2014; Gondo & Amis, 2013). The second category involves the market for new management innovations and the emergence of management trends and fads (Wright et al., 2012; Clark, 2004; Benders & Van Veen, 2001; Abrahamson, 1991, 1996). The third category deals primarily with the internal and external antecedents that influence an organisation's decisions and ability to use new management innovations with previous studies focusing on the antecedent role of leadership (Su & Baird, 2018; Vaccaro et al., 2012), the exchange of internal knowledge (Černe et al., 2013), competition intensity (Hecker & Ganter, 2013), employee's knowledge and skills (Nieves & Segarra-Ciprés, 2015), management control systems (Baird et al., 2019), and dynamic capabilities (Lin et al., 2016). The fourth category centres on the effectiveness of management innovation in influencing various organisational outcomes (Baird et al., 2019; Magnier-Watanabe & Benton, 2017; Nieves, 2016; Gebauer, 2011; Walker et al., 2011; Mol & Birkinshaw, 2009).

However, the literature lacks a comprehensive empirical analysis of the antecedents and contributions of management innovation (Khosravi et al., 2019; Walker et al., 2015; Volberda et al., 2013; Damanpour & Aravind, 2012; Vaccaro et al., 2012). Accordingly, this study aims to address this research problem by providing an empirical insight into the influence of organisational and institutional factors on the use of management innovation and evaluates the effectiveness of management innovation in influencing organisational outcomes. Specifically, this study analyses the influence of organisational factors (employee empowerment, organisational identification, and employee organisational commitment) and institutional factors (coercive, mimetic, and normative pressures) on management innovation. In addition, the study examines the effects of management innovation on organisational dynamic

capabilities (strategic flexibility and research and development (R&D) competence), organisational performance, and competitive advantage.

Previous research on the contingency factors influencing the use of management innovation has focused on specific factors, such as competition intensity (Hecker & Ganter, 2013); internal knowledge exchange (Černe et al., 2013); external involvement (Mol & Birkinshaw, 2014); employees' knowledge, skills, and relationships with external agents (Nieves & Segarra-Ciprés, 2015); top and middle management characteristics (Heyden et al., 2018); leadership behaviour (Vaccaro et al., 2012); leadership styles (Su & Baird, 2018); and management control systems (Baird et al., 2019). However, with the exception of Nieves and Segarra-Ciprés (2015), who analysed the role of human capital in introducing management innovation, such studies have neglected the role of employees as internal change agents and drivers of management innovation.

Nieves and Segarra-Ciprés (2015) found that employees with higher levels of knowledge and skill play a crucial role in the introduction of new management innovation. Similarly, this study argues that employees can act as key drivers of management innovation in their organisation (Nieves & Segarra-Ciprés, 2015; Volberda et al., 2013; Vaccaro et al., 2012; Birkinshaw et al., 2008). Accordingly, it is imperative to involve employees in the implementation and use of management innovation with employee empowerment representing a key management strategy for achieving this objective. Employee empowerment involves delegating power, control and decision-making to lower-level employees (Arneson & Ekberg, 2006; Menon, 2001; Spreitzer 1995), thereby increasing the flexibility and effectiveness of the organisational structure and decision-making processes within it (Bowen & Lawler III, 2006; Kirkman & Rosen, 1999). Employee empowerment enables employees to develop and implement innovative management practices and techniques to perform their assigned organisational functions and

activities. Accordingly, this study examines the influence of employee empowerment on the use of management innovation.

As employees are integral to management innovation, it is also important to examine the psychological relationship between employees and their organisation. A strong relationship between employees and their organisation, characterised by high levels of organisational identification and commitment, is expected to motivate employees to perform their job in new and creative ways (Tsai & Yen, 2018; Liu et al., 2016; He & Brown, 2013; Xerri & Brunetto, 2013; Michaelis et al., 2009). Hence, this study argues that empowering employees will likely increase employees' psychological attachment to their organisation and, subsequently, encourage them to employ management innovation. Accordingly, this study examines the mediating role of organisational identification and employee organisational commitment in the association between employee empowerment and management innovation. Therefore, given that empirical research on employees as drivers of the use of management innovation is scant, the **first objective of this thesis** is to contribute to the contingency-based literature and management innovation literature by examining the association between employee empowerment and management innovation and the mediating role of organisational identification and employee organisational commitment in this association.

The literature on the antecedents of management innovation has also highlighted the role of institutional theory in explaining organisations' motivation to adopt and use innovation in general and in particular, management innovation (Volberda et al., 2014; Walker et al., 2011; Birkinshaw et al., 2008; DiMaggio & Powell, 1983). The institutional theory perspective holds that there are various institutional pressures that influence the way in which organisations interpret their business environment and, therefore, influence their decision to use management

innovation (Birkinshaw et al., 2008; Ketokivi & Schroeder, 2004; Teo et al., 2003; John et al., 2001; Palmer et al., 1993; DiMaggio & Powell, 1983; Tolbert & Zucker, 1983).

DiMaggio and Powell (1983) proposed three primary types of institutional pressure to explain the use of management practices in organisations: coercive, mimetic, and normative. Coercive pressure is imposed by regulatory bodies (e.g., governments and industry agencies) or by suppliers on which organisations are dependent. Mimetic pressure occurs when organisations respond to the uncertainties associated with changes in the business environment by adopting the same practices or similar practices to other organisations. Normative pressures arise due to the demands to conform to the professional standards and expectations placed on organisations by professional bodies (e.g., accounting and reporting standards). As empirical studies on the influence of these pressures on management innovation are limited, **the second objective of this thesis** is to contribute to the contingency-based literature and management innovation literature by providing an empirical insight into the effect of institutional pressures on management innovation.

The study further contributes to the sparse literature on the effectiveness of management innovation by examining the impact of management innovation on organisational dynamic capabilities, organisational performance, and competitive advantage. First, in respect to competitive advantage, management innovation engenders a long-lasting competitive advantage (Damanpour & Aravind, 2012; Ganter & Hecker, 2013; Mol & Birkinshaw, 2006, 2009; Birkinshaw et al., 2008; Hamel, 2006). Further, from a resource-based view (RBV) perspective, management innovation is a rare and valuable resource that is difficult to imitate, making it a key source of competitive advantage (Camisón & Villar-López, 2014; Birkinshaw et al., 2008; Teece, 2007; Barney, 1991). However, despite this claim in the literature, there is a lack of empirical studies on the association between the use of management innovation and

competitive advantage. Therefore, **the third objective of this thesis** is to provide an empirical insight into the association between management innovation and competitive advantage.

Secondly, prior research on management innovation refers to the lack of insight into the empirical association between management innovation and organisational performance (Khosravi et al., 2019; Mol & Birkinshaw, 2009), with researchers calling for additional investigations into this issue (Nieves, 2016; Walker et al., 2015; Wong, 2013). The innovation literature here indicates that organisations use management innovation to reduce or eliminate performance gaps. Further, from a practical perspective, there are various examples of organisations that improve their performance, both financial and non-financial, through management innovation. Hence, **the fourth objective of this study** is to contribute to the management innovation literature by providing empirical evidence on the impact of management innovation use on organisational performance.

Finally, this study is also motivated to investigate the indirect impact of management innovation on organisational performance. In particular, while many studies have examined the direct association between management innovation and organisational performance (Baird et al., 2019; Magnier-Watanabe & Benton, 2017; Nieves, 2016; Walker et al., 2011; Mol & Birkinshaw, 2009), it is argued that the unique and complex nature of management innovation warrants an analysis of its indirect impact on organisational performance. Specifically, it is claimed that the effect of management innovation on organisational performance is influenced by other internal organisational factors (Khosravi et al., 2019; Walker et al., 2011; Jansen et al., 2006; Birkinshaw & Mol, 2006), with evidence that the association between management innovation and organisational performance is mediated by performance management (Walker et al., 2011), product innovation (Nieves, 2016), and knowledge management (Magnier-Watanabe & Benton, 2017). In similar way, this study argues that the relationship between

management innovation and organisational performance is influenced by two organisational dynamic capabilities: strategic flexibility and R&D competence. The study focuses on these two capabilities due to their relevance to organisational performance and their crucial role for the adaption to changes in the business environment (Danneels, 2012; Celuch et al., 2007; Nadkarni & Narayanan, 2007). In particular, both strategic flexibility, which enables organisations to anticipate and respond to the emergent opportunities and threats in the business environment (Celuch & Murphy, 2010; Nadkarni & Narayanan, 2007; Sanchez, 1995), and R&D competence, which enables organisations to continually explore and identify new technologies (Danneels, 2002, 2008, 2016), are important for organisational survival (Danneels, 2016; Hitt et al., 1998; Johnson et al., 2003). Therefore, **the fifth objective of this thesis** is to contribute to the management innovation and strategic management literature by examining the mediating role of two organisational dynamic capabilities, strategic flexibility and R&D competence, in the relationship between management innovation and organisational performance.

In summary, this thesis pursues the following objectives:

1. To contribute to the contingency-based literature examining the factors influencing the use of management innovation by examining the influence of employee empowerment, organisational identification, employee organisational commitment, and institutional pressures, on the use of management innovation.
2. To derive empirical evidence on the effectiveness of and the outcomes of management innovation by examining the impact of the use of management innovation on organisational performance and competitive advantage.

3. To examine the mediating role of organisational dynamic capabilities in the association between management innovation and organisational performance.

The remainder of this chapter is structured as follows. The next section outlines the research motivations of the thesis, followed by section 1.3 which briefly discusses the overall conceptual framework of the thesis. Section 1.4 then discusses the research method. The contributions of the findings of the study are then discussed in section 1.5, while section 1.6 provides an overview of the structure of the thesis.

## **1.2 Motivations of the study**

This study is motivated to: (1) examine the role of employee empowerment in influencing the use of management innovation; (2) examine the use of management innovation from an institutional perspective, and; (3) provide an empirical insight into the effectiveness of management innovation. These motivations are discussed in detail in the following sub-sections.

### **1.2.1 To examine the influence of employee empowerment on the use of management innovation**

The management innovation literature emphasises the critical role of employees as internal change agents in the creation and development of new management practices, structures, processes, and techniques (Su & Baird, 2018; Volberda et al., 2013; Vaccaro et al., 2012; Birkinshaw et al., 2008), which makes them an important resource in facilitating management innovation. In particular, their role is considered vital for exploring and identifying new management trends and initiatives that support organisational change (Nieves & Segarra-Ciprés, 2015; Vaccaro et al., 2012). Therefore, ensuring that employees play a role in creating and applying management innovation is important.

However, only a few studies have examined the role of employees in supporting the use of management innovation. For instance, Su and Baird (2018) and Vaccaro et al. (2012) examined the influence of leadership behaviour and leadership styles on introducing management innovation. Further, Heyden et al. (2018) studied the influence of the combination of top and middle management characteristics, while Nieves and Segarra-Ciprés (2015) analysed the effects of employees' knowledge and skill levels on management innovation. This study aims to extend this literature by emphasising the role of employees, specifically the influence of implementing employee empowerment practices, on management innovation.

The recent increase in business complexities has promoted the implementation of employee empowerment practices to enhance the effectiveness of decentralised decision-making (Damanpour et al., 2018; Gebauer, 2011; Jansen et al., 2006). Empowering employees involves giving them the opportunity to contribute to the achievement of organisational goals through delegating controls to them, and authorising them to make decisions (Kruja et al., 2016; Jiang & Liu, 2015; Arneson & Ekberg, 2006; Bowen & Lawler III, 2006; Menon, 2001). Accordingly, employees can access important information and resources, thus enabling them to observe existing problems and needs (Dewettinck & van Ameijde, 2011; Welch, 2011) and explore new ways to solve these problems and fulfill these needs through management innovation (Fernandez & Moldogaziev, 2013; Fernandez & Pitts, 2011; Seibert et al., 2011; de Jong & Den Hartog, 2007).

Furthermore, to encourage behaviour which leads to management innovation, it is important to consider the psychological relationship between an organisation and its employees. In particular, the literature shows that organisational identification and employee organisational commitment positively influence employees' motivation to be innovative and creative in performing their job (Tsai & Yen, 2018; Liu et al., 2016; He & Brown, 2013; Xerri & Brunetto,



2013; Michaelis et al., 2009). Specifically, employees with a higher degree of identification and/or a higher level of commitment to an organisation are more likely to work towards the achievement of the organisation's goals (Lee et al., 2015; Men, 2011; Babakus et al., 2003; van Knippenberg, 2000; Kirkman & Rosen, 1999; Iverson, 1996; Dutton et al., 1994), and hence, they will be more likely to employ management innovation to a greater extent than other employees. Therefore, this study contributes to the management innovation literature and contingency-based literature by examining the influence of employee empowerment on management innovation and the mediating effect of organisational identification and employee organisational commitment on this relationship.

### **1.2.2 To examine the use of management innovation from an institutional perspective**

Management innovation represents a means of creating management change and organisational adaptive behaviour for the purpose of ensuring the improvement and maintenance of organisational performance (Damanpour et al., 2009; Damanpour & Schneider, 2006). Organisations typically engage in management innovation due to managerial choice or in response to the pressures that the external business environment imposes on them (Damanpour et al., 2009; Damanpour & Schneider, 2006). For example, a specific management innovation, such as a new structure, a new reward system or a new management technique, may be implemented as a result of a managerial decision to eliminate a performance gap that results from internal inefficiencies (Damanpour et al., 2009, 2018; Mol & Birkinshaw, 2009; Birkinshaw et al., 2008; Damanpour & Schneider, 2006). Alternatively, organisations may face environmental change, including competition, scarcity of resources, technological change, deregulation and/or changes in suppliers' and customers' demands, which place pressure on organisations to adapt (Damanpour et al., 2009; Damanpour & Schneider, 2006; DiMaggio & Powell, 1983).

Previous research argues that the extent of use of new management practices, processes, structures or techniques is influenced by pressure from various parties and forces, such as uncertainties, governmental and industrial policies and regulations, market competition, powerful companies, professional networks, educational groups, and the standards and guidelines of professional institutions (Fikru, 2014; Liu et al., 2010; Liang et al., 2007; Benders et al., 2006; Paauwe & Boselie, 2005; Frumkin & Galaskiewicz, 2004; Teo et al., 2003; John et al., 2001; Ang & Cummings, 1997; Abrahamson, 1996; DiMaggio & Powell, 1983; Tolbert & Zucker, 1983). For example, Hopper and Major (2007) conclude that pressure from regulatory bodies, capital markets and parent corporations influence an organisation's decision to use management techniques, such as an ABC system. Similarly, Slack and Hinings (1994) note that governmental mandates and attending professional seminars and conferences exert coercive and mimetic pressure on organisations to adopt specific management structures. Further, it was found that normative pressures coming from consultancy organisations (dos Santos et al., 2020) and professional networks (Damanpour & Aravind, 2012) influence the extent of use of management innovation. Therefore, it is important to examine the institutional factors that influence an organisation's decision to use management innovation (Walker et al., 2015; Volberda et al., 2014; Birkinshaw et al., 2008; Sturdy, 2004; Kostova & Roth, 2002; DiMaggio & Powell, 1983)

However, despite the importance of an institutional perspective in explaining the motivations behind an organisation's decision to employ management innovation, there is a dearth of empirical studies on the influence of institutional pressures on the extent to which management innovation is used. Accordingly, this study examines the influence of DiMaggio and Powell's (1983) institutional pressures (coercive, mimetic, and normative pressure) on the use of management innovation.

### **1.2.3 To provide an insight into the effectiveness of management innovation**

In the extant literature, it is argued that management innovation is an important source of competitive advantage (Volberda et al., 2013; Mol & Birkinshaw, 2009; Birkinshaw et al., 2008; Hamel, 2006). For example, from the perspective of RBV, management innovation is a firm-specific resource that is rare, valuable, non-substitutable and non-replicable by other organisations, which makes management innovation a source of competitive advantage (Camisón & Villar-López, 2014; Birkinshaw et al., 2008; Teece, 2007; Barney, 1991). Furthermore, management innovation enhances the effectiveness of internal organisational processes (Volberda et al., 2013), improves organisational productivity (Mol & Birkinshaw, 2009) and reduces administration and transaction costs (Nieves, 2016), which in turn enhances competitive advantage. In addition, using management innovation by implementing new structures and work practices is found to enhance the effectiveness of job performance, thereby enhancing competitive advantage (Damanpour, 2014; Mol & Birkinshaw, 2008; OECD, 2005). However, very few empirical studies have examined the impact of management innovation on the achievement of competitive advantage, and therefore, this study is motivated to provide an empirical insight into the association between management innovation and competitive advantage.

In addition, prior research on management innovation has noted its critical contribution to organisational success, strategic development, organisational change and renewal, and competitiveness (Volberda et al., 2013; Damanpour & Aravind, 2012; Walker et al., 2011; Mol & Birkinshaw, 2009; Hamel, 2006; Birkinshaw & Mol, 2006). Further, management innovation enhances reputation and legitimacy, employee satisfaction, and the quality of work (Volberda et al., 2013; Martin et al., 2012; Sapprasert & Clausen, 2012; Mol & Birkinshaw, 2006). However, despite this, the limited empirical studies examining the impact of

management innovation on organisational performance have produced mixed findings (Baird et al., 2019; Khosravi et al., 2019; Walker et al., 2015; Damanpour & Aravind, 2012). In particular, while some studies have reported the direct positive impact of management innovation on organisational performance (Baird et al., 2019; Mol & Birkinshaw, 2009), others claim that this impact is contingent on internal organisational factors (Walker et al., 2011; Jansen et al., 2006; Birkinshaw & Mol, 2006). For instance, previous studies have found that the influence of management innovation on performance is mediated by performance management (Walker et al., 2011), product innovation (Nieves, 2016) and knowledge management initiatives (Magnier-Watanabe & Benton, 2017). Therefore, this study is motivated to examine both the direct and indirect impact of management innovation on organisational performance. Specifically, in addition to examining the direct association between management innovation and organisational performance, this study also aims to explore the mediating role of organisational dynamic capabilities on this association.

From the RBV perspective, acquiring valuable, difficult-to-replicate company resources and capabilities contributes to performance and achieving sustainable competitive advantage (Barney, 1991, 1996; Hart, 1995; Wernerfelt, 1984). Therefore, in order to enhance performance, it is important for organisations to develop capabilities that enable them to address existing problems and threats and identify new technological and competitive opportunities in the business environment (Teece, 2007, 2012; Easterby-Smith et al., 2009; Helfat et al., 2007; Eisenhardt & Martin, 2000).

A number of studies have incorporated organisational dynamic capabilities as mediators that enhance organisational performance (Nuhu et al., 2019; Ko & Liu, 2017; Chen et al., 2017; Akgün et al., 2014; Santos-Vijande et al., 2012; Shin & Aiken, 2012). However, despite the importance of developing organisational dynamic capabilities, “few studies [have] investigated

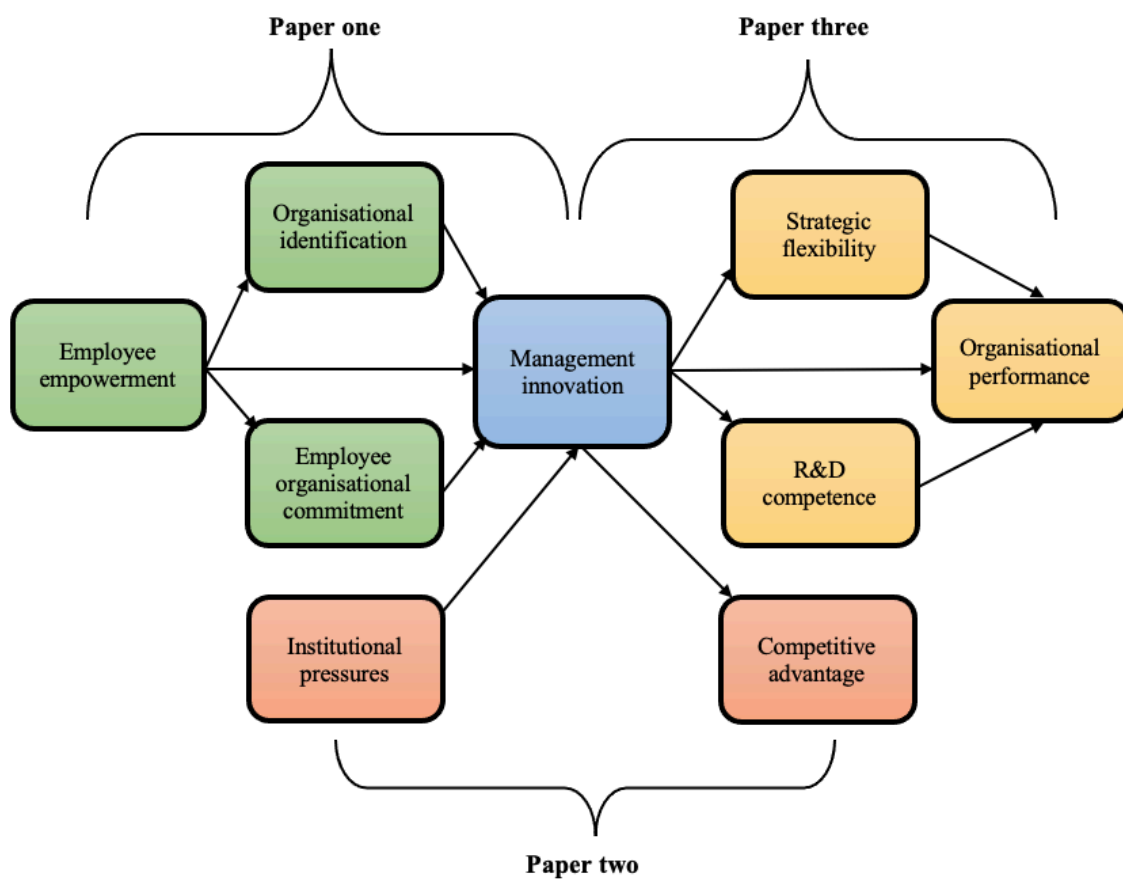
the potential impact of management innovation on organisations' dynamic capabilities" (Khosravi et al., 2019, pp. 701–702). Accordingly, this study examines the influence of the use of management innovation on the development of two organisational dynamic capabilities: (1) strategic flexibility, which enables organisations to identify critical changes in the business environment and effectively prepare appropriate actions to respond to them (Brozovic, 2018; Celuch & Murphy, 2010; Nadkarni & Narayanan, 2007; Shimizu & Hitt, 2004; Sanchez, 1995), and; (2) R&D competence, which enables organisations to explore and identify new technological opportunities (Danneels, 2008, 2012, 2016). These two organisational dynamic capabilities are in turn expected to enhance organisational performance. Hence, this study aims to provide an empirical insight into the mediating role of strategic flexibility and R&D competence in the association between management innovation and organisational performance.

### **1.3 Conceptual framework of the thesis**

The conceptual framework of the thesis was developed to provide empirical evidence on the antecedents (employee empowerment, organisational identification, employee organisational commitment, and institutional pressures) of and the outcomes (organisational dynamic capabilities, organisational performance, and competitive advantage) of management innovation. The antecedents and outcomes of management innovation are examined in three individual research papers, as shown in Figure 1. First, Paper One examines the influence of employee empowerment on management innovation and the mediating role of organisational identification and employee organisational commitment on the association between employee empowerment and management innovation. Second, Paper Two examines the influence of DiMaggio and Powell's (1983) institutional pressures (coercive, mimetic, and normative pressures) on management innovation and the subsequent impact on competitive advantage.

Finally, Paper Three examines the mediating role of two organisational dynamic capabilities (strategic flexibility and R&D competence) on the association between management innovation and organisational performance. The three papers are discussed in Chapters Two, Three and Four, respectively.

**Figure 1.1 Overview of the thesis**



## **1.4 Research method**

The thesis uses the survey method and involves the administration of both a mail and online survey with the data collected during December, 2018 to March, 2019. The mail survey method is a common approach for collecting data in the management accounting field (Van der Stede et al., 2005) and was used for several reasons. First, the mail survey is a self-administered questionnaire delivered to respondents by post, and it comprises close-ended questions to be answered without intervention from a researcher, thereby reducing research bias. Second, it covers a wide geographic area, thus enabling the collection of detailed information from a large population. Third, it is suitable for a large number of questions to be answered in an efficient and timely manner.

The mail survey questionnaire was designed and distributed using Dillman's (2007) Tailored Designed Method (TDM). The TDM aims to efficiently increase the response rate by providing structures for the style, format and procedures relevant to the design and distribution of questionnaires. The questionnaire was organised in a respondent-friendly style by composing questions with simple words and presenting them in colour. These features were employed to ensure that the questionnaire was attractive and would therefore motivate the participants to complete it. It was also designed to be as straightforward as possible and to be completed in no more than 15 minutes. Following the guidelines provided by the TDM, the questionnaire, an information letter printed on coloured and official university letterhead and signed by the researcher, a reply-paid postcard, and a reply-paid envelope were posted to each participant.

The targeted participants were middle-level managers working in operating departments across Australian organisations. Initially, a list of the contact details of 840 managers were randomly

identified using the OneSource database (D&B Hoovers)<sup>4</sup>. Several procedures were performed to confirm the obtained contact information, including their names, positions and addresses (e.g., telephone calls, checking an organisation's website, checking a manager's LinkedIn account). This process eliminated 360 individuals who were unwilling to participate or no longer worked for the targeted organisation, yielding a sample of 480 managers.

However, despite the use of the TDM, the response rate was very low with only 46 complete questionnaires returned after the first and second mail-outs. Therefore, an online survey was administrated via Qualtrics, an international privately owned data collection organisation. The survey was designed using tools for organising the flow and sequence of questions and sent to prospective respondents with an invitation letter that explained the objectives of the study and the requirements for completing the questionnaire. Qualtrics also applied several procedures to check the quality of the data, including eliminating duplicate responses, verifying IP addresses, and monitoring the time spent completing the survey. As a result, a total of 110 completed questionnaires were received. Combining both the data from the mail and online surveys, the final sample comprised 156 completed questionnaires that was used in the data analysis.

Several reliability and validity tests were conducted for the questionnaire instrument. For instance, confirmatory factor analysis was conducted to assess the validity of the constructs. Further, Cronbach's alpha and composite reliability scores were calculated to test the internal consistency of the constructs. In addition, convergent validity was tested by calculating the average variance extracted (AVE), and discriminant validity was assessed by comparing the square root of the AVE of each construct with the correlation scores of constructs with the other constructs. The results of all these tests suggested that the data met the recommended

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<sup>4</sup> OneSource is a dataset that provides in-depth business information of private and public companies.



threshold and requirements of reliability and validity. The data were analysed using structural equation modelling (SEM) in AMOS (version 25). The results of the analysis are presented in Chapters Two, Three, and Four, respectively.

## **1.5 The contributions of the findings**

The findings of this study provide an empirical insight into the antecedents of and the impact of management innovation and contribute to the literature in several ways. First, the findings of Paper One highlight the role of employees as drivers of management innovation in an organisation. Specifically, this paper shows that employee empowerment positively influences the extent of use of management innovation (practice and technique dimensions). Further, it finds that organisational identification mediates the association between employee empowerment and management innovation techniques, while employee organisational commitment (the involvement dimension) mediates the association between employee empowerment and management innovation practices. In addition, while employee organisational commitment (the attachment dimension) does not mediate the association between employee empowerment and the two dimensions of management innovation, it was found to be directly positively associated with both management innovation practice and techniques.

These findings extend the management innovation and contingency-based literature by providing empirical evidence of the influence of additional contingency factors on management innovation, specifically employee empowerment, organisational identification, and employee organisational commitment. In addition, these findings offer some practical implications. In particular, the findings inform managers of the crucial role of employee empowerment in promoting the use of management innovation. Further, the findings suggest

that managers should focus on enriching organisational identification and employee organisational commitment among their employees due to their mediating role on the association between employee empowerment and the use of management innovation.

Secondly, Paper Two reveals that coercive and normative pressures influence the extent of use of management innovation. Specifically, it is found that internal coercive and normative pressures increase the extent of use of management innovation in terms of practices and techniques, while external coercive pressures exhibit a negative impact on management innovation techniques. The findings also confirm that the extent of use of both management innovation practices and techniques exhibit a positive significant impact on competitive advantage.

The findings here contribute to the management innovation literature and the contingency-based literature examining the factors influencing management innovation, specifically highlighting the role of institutional pressures in explaining the extent of use of management innovation. Further, the findings contribute to the literature examining the effectiveness of management innovation and strategic management literature by examining the impact of the extent of use of management innovation on competitive advantage.

The findings provide managers with an insight into the types of institutional pressure that influence the extent of use of management innovation in their organisations. In particular, managers are encouraged to increase the internal coercive and normative pressures to facilitate an increase in the extent of use of management innovation practices and techniques. However, managers should be wary of the external coercive pressures involved with their compliance with government and industry regulations, as such pressures were found to be negatively associated with the extent of use of management innovation techniques. In addition, the

findings inform managers of the importance of using management innovation practices and techniques to gain a competitive advantage.

Finally, the findings of Paper Three provide an insight into the effectiveness of management innovation by providing empirical evidence of the direct and indirect (through organisational capabilities) impact of the extent of use of management innovation on organisational performance. First, the extent of use of management innovation techniques is significantly and positively directly associated with financial performance. Second, the findings reveal the indirect effect of management innovation on organisational performance by confirming the mediating role of two organisational dynamic capabilities [strategic flexibility and R&D competence] in the association between management innovation and organisational performance. Specifically, they reveal that strategic flexibility mediates the association between each management innovation practice and technique with financial and non-financial performance. Further, the findings reveal that R&D competence mediates the association between each management innovation practice and technique with non-financial performance.

The findings of Paper Three contribute to the literature in two ways. First, the findings contribute to the literature examining the effectiveness of management innovation by providing an empirical insight into the impact of management innovation on organisational performance. Second, they advance the strategic management literature by emphasising the role of organisational dynamic capabilities in influencing the effectiveness of management innovation by highlighting the mediating role of strategic flexibility and R&D competence in the association between management innovation and organisational performance.

The findings of Paper 3 highlight the roles of strategic flexibility and R&D competence as organisational dynamic capabilities that enhance the effectiveness of management innovation

through mediating the impact of the extent of use of management innovation on organisational performance. In particular, the findings suggest that management innovation will enable managers to build and develop the organisational dynamic capabilities of strategic flexibility and R&D competence, thereby enabling them to recognise and respond to critical changes in the business environment in an effective manner (Brozovic, 2018; Danneels, 2008, 2012, 2016; Celuch & Murphy, 2010; Nadkarni & Narayanan, 2007; Shimizu & Hitt, 2004; Sanchez, 1995). Accordingly, managers are encouraged to increase the extent of use of management innovation in terms of practices (using new management rules and procedures, using new forms of tasks and functions, implementing new management systems and applying new management structures) and techniques (applying new management techniques such as TQM, BSC, ABM, Benchmarking and VCA), which will in turn enhance strategic flexibility and R&D competence, and in turn enhance organisational performance (both financial and non-financial). In addition, given that the capabilities of strategic flexibility and R&D competence are essential for enhancing organisational performance, managers are advised to consider other factors that might facilitate their development.

## **1.6 The structure of the thesis**

The remainder of the thesis is organised as follows. Chapters Two, Three and Four present the three individual research papers (see Table 2), along with their respective tables, figures, references, and appendices. Specifically, Chapter Two (Paper One) discusses the examination of the role of employee empowerment, organisational identification, and employee organisational commitment in driving the use of management innovation. Chapter Three (Paper Two) investigates the influence of institutional pressures on the use of management innovation and its subsequent effect on competitive advantage. Chapter Four (Paper Three) then presents the examination of the effectiveness of management innovation by examining the mediating

role of strategic flexibility and R&D competence on the association between management innovation and organisational performance. Finally, Chapter Five concludes the thesis with a summary of the key findings of the three papers. This chapter also highlights the contributions of the findings to the relevant literature and their practical implications, as well as acknowledging the limitations of the study and providing suggestions for future research. The survey questionnaire used to collect the data for all the papers and the record of ethical approval are provided in the Appendices at the end of the thesis.

**Table 1.2 Titles of the three papers**

<b>Paper</b>	<b>Title</b>	<b>Contribution</b>
PAPER ONE	The mediating role of organisational identification and employee organisational commitment in the association between employee empowerment and management innovation	Antecedents of the use of management innovation
PAPER TWO	Management innovation: The influence of institutional pressures and the impact on competitive advantage	Antecedents and outcomes of the use of management innovation
PAPER THREE	The mediating role of organisational dynamic capabilities in the association between management innovation and organisational performance	Outcomes of the use of management innovation

## **CHAPTER 2**

### **PAPER ONE**

**Title: The mediating role of organisational identification and employee organisational commitment in the association between employee empowerment and management innovation**

## **Abstract**

While management innovation has proven to be essential for organisational effectiveness and achieving competitive advantage, empirical research on its antecedents remains limited. Accordingly, the purpose of this study is to provide empirical evidence on the role of employee empowerment as a driver of the use of management innovation and the mediating role of organisational identification and employee organisational commitment in the association between employee empowerment and management innovation. Data were collected from 156 middle-level managers in Australian organisations. The results show a direct positive association between employee empowerment with both dimensions of management innovation (practices and techniques). Further, organisational identification was found to partially mediate the association between employee empowerment and management innovation techniques, while employee organisational commitment partially mediates the association between employee empowerment and management innovation practices. The study contributes to the contingency-based literature by providing an empirical insight into the factors influencing management innovation. In particular, the study provides managers with an insight into the critical role of employee empowerment practices in increasing the extent of use of management innovation. Accordingly, managers should foster and maintain an empowered workplace that enables employees to participate in the decision-making process, collaborate in achieving organisational goals, and share their ideas so as to enhance the innovation of organisational processes and activities. In addition, given the mediating role of organisational identification and employee organisational commitment in the association between employee empowerment and management innovation, managers should be aware of the importance of maintaining high levels of commitment and strong organisational identification amongst their employees, and also examine their antecedent factors so as to enhance their impact on management innovation.



**Keywords:** management innovation, employee empowerment, organisational identification,  
employee organisational commitment

## **2.1 Introduction**

Organisations typically encounter various challenges, requiring them to seek creative ways to manage their operations and strengthen their business viability. Notable challenges include increasing competition, rapidly changing market conditions, consumer demand for higher quality at lower costs, and the scarcity of resources. These challenges increase the pressure on organisations to improve process efficiencies, enhance productivity, ensure customer satisfaction, and, in turn, strengthen organisational performance (Bowen & Lawler III, 2006; Jansen et al., 2006). Innovation is recognised as a critical factor in achieving such outcomes and maintaining a sustainable competitive advantage (Weerawardena & Mavondo, 2011; Lengnick-Hall, 1992). Innovation is also vital for responsiveness to changing business technologies, market and industry competition, and developing managerial knowledge (Damanpour et al., 2009). As a result, organisations look for opportunities to innovate both in technological and non-technological areas. Specifically, technological innovation involves the introduction of new products or services (i.e., product innovation) or the implementation of new elements of production processes or service operations (i.e., process innovation) (Damanpour, 2010). On the other hand, non-technological innovation focuses on ways to innovate administrative aspects of the organisation (Volberda et al., 2013; Birkinshaw et al., 2008).

Academics and managers have recently emphasised management innovation as an important administrative dimension that may lead organisations to achieve and sustain a competitive advantage and ensure their survival (Volberda et al., 2014; Wu, 2010; Hamel, 2006). Management innovation involves how managers change and improve the way they manage their organisations (Birkinshaw et al., 2008; Hamel, 2006). In other words, the focus is on creating ideas to develop management practices, structures, and processes so as to improve

how work is performed. This includes management work on setting goals and plans, decision-making processes, controlling activities, allocating resources and applying knowledge (Hamel, 2006).

However, management innovation is sparsely covered in the literature, with most studies focusing on technological innovations (Walker et al., 2015; Crossan & Apaydin, 2010; Damanpour et al., 2009; Birkinshaw et al., 2008). Therefore, the first aim of this study is to provide an insight into the extent of use of management innovation in organisations. This focus on management innovation is important for two reasons. First, the literature has acknowledged that management innovation contributes to strategy development, helps enable and facilitate organisational change, and improves organisational productivity (Volberda et al., 2013; Walker et al., 2011; Mol & Birkinshaw, 2009; Hamel, 2006; Birkinshaw & Mol, 2006). Secondly, management innovation is a source of long-term competitive advantage (Birkinshaw et al., 2008; Hamel, 2006; Mol & Birkinshaw, 2006) with Hamel (2006) stating that “innovation in management principles and processes can create long-lasting advantage and produce dramatic shifts in competitive position” (p. 72).

In particular, organisations have reinvented their management practices to create successful innovations that have dramatically improved their organisational performance (Damanpour & Aravind, 2012; Birkinshaw et al., 2008; Hamel, 2006; Birkinshaw & Mol, 2006). For example, Toyota improved the flexibility and efficiency of its processes by introducing the lean manufacturing system, along with specific management techniques such as just-in-time (JIT) system, the Kanban system, and target costing (Mol & Birkinshaw, 2006, 2008; Hamel, 2006; Fane et al., 2003). This enabled Toyota to achieve a competitive advantage and enhance product quality (Bowonder et al., 2010; Hamel, 2006; Fane et al., 2003; Dyer & Singh, 1998). Similarly, Ford, with its moving assembly line, and General Motors (GM), with its divisional

structures, have achieved considerable improvements in management processes and, in turn, their performance (Hamel, 2006; Mol & Birkinshaw, 2006). Other examples include the introduction of brand management by Procter & Gamble (P&G), and Six Sigma by General Electric (GE) (Birkinshaw et al., 2008; Mol & Birkinshaw, 2008). While such innovations are known to management academics, research on management innovation requires further exploration (Khosravi et al., 2019; Volberda et al., 2013; Vaccaro et al., 2012; Mol & Birkinshaw, 2009). Therefore, this study contributes to the management innovation literature by providing an empirical insight into the extent of use of management innovation in organisations.

A recent review on management innovation research by Khosravi et al. (2019) emphasises the need for more studies to provide an empirical insight into the internal and external antecedents of management innovation, since examining these antecedents provides additional understanding of the capability to use management innovation. Internal antecedents include internal individuals such as managers and employees (also called internal agents), whereas external agents include consultants and academics (Volberda et al., 2013; Gebauer, 2011; Birkinshaw et al., 2008). Internal antecedents also include various organisational factors (i.e., organisational size, organisational learning, organisational strategy, and organisational culture), environmental factors (i.e., competition, technology change, market uncertainty, and environmental dynamism), and managerial factors (i.e., leadership behaviour, managerial characteristics and attitudes), as well as moderating and mediating factors (Khosravi et al., 2019; Volberda et al., 2013).

This study attempts to extend this contingency based literature by examining additional antecedents of management innovation. Accordingly, the second aim of the study is to examine the role of employees as internal drivers who foster the extent of use of management

innovation, by examining the influence of employee empowerment on management innovation. The focus here on front-line employee empowerment is critical as such employees and their supervisors are the ones who implement and use management innovations (practices, processes, structures, or techniques), consequently positioning them as key antecedent of the use of management innovation (Volberda et al., 2013; Vaccaro et al., 2012; Birkinshaw et al., 2008).

Although employees, as internal change agents, are considered to be a key driver of the use of management innovation (Mol & Birkinshaw, 2014; Volberda et al., 2013; Birkinshaw et al., 2008), there is a dearth of studies that examine the role of employees in increasing the extent of use of management innovation. Furthermore, the focus on the role of employee empowerment is highly relevant due to the recent emphasis on implementing decentralised decision-making (Damanpour et al., 2018; Gebauer, 2011; Jansen et al., 2006) and enhancing employee knowledge and capabilities (Bowen & Lawler III, 2006).

The study uses the contingency theory approach by providing an insight into the role of employees in driving the use of management innovations. Contingency theory proposes that organisations are influenced by various factors that they must integrate into their structures to enhance performance (Donaldson, 2001). The study contributes to the limited contingency theory-based literature examining the factors influencing the use of management innovation (Heyden et al., 2018; Su & Baird, 2018; Lin et al., 2016; Nieves & Segarra-Ciprés, 2015; Mol & Birkinshaw, 2014; Vaccaro et al., 2012). Specifically, while previous studies have examined how transformational and transactional leadership behaviour (Vaccaro et al., 2012), employees' knowledge and skills (Nieves & Segarra-Ciprés, 2015), top and middle management characteristics (Heyden et al., 2018), dynamic capabilities (Lin et al., 2016) and the role of external involvement (i.e., external agents, sources and experience) (Mol and

Birkinshaw, 2014) influences management innovation, the empirical research in this area is still in its infancy (Khosravi et al., 2019; Su & Baird, 2018). Therefore, this study extends the contingency-based literature on the antecedents of management innovation by examining the role of employee empowerment as an organisational capability which is expected to facilitate the use of management innovation.

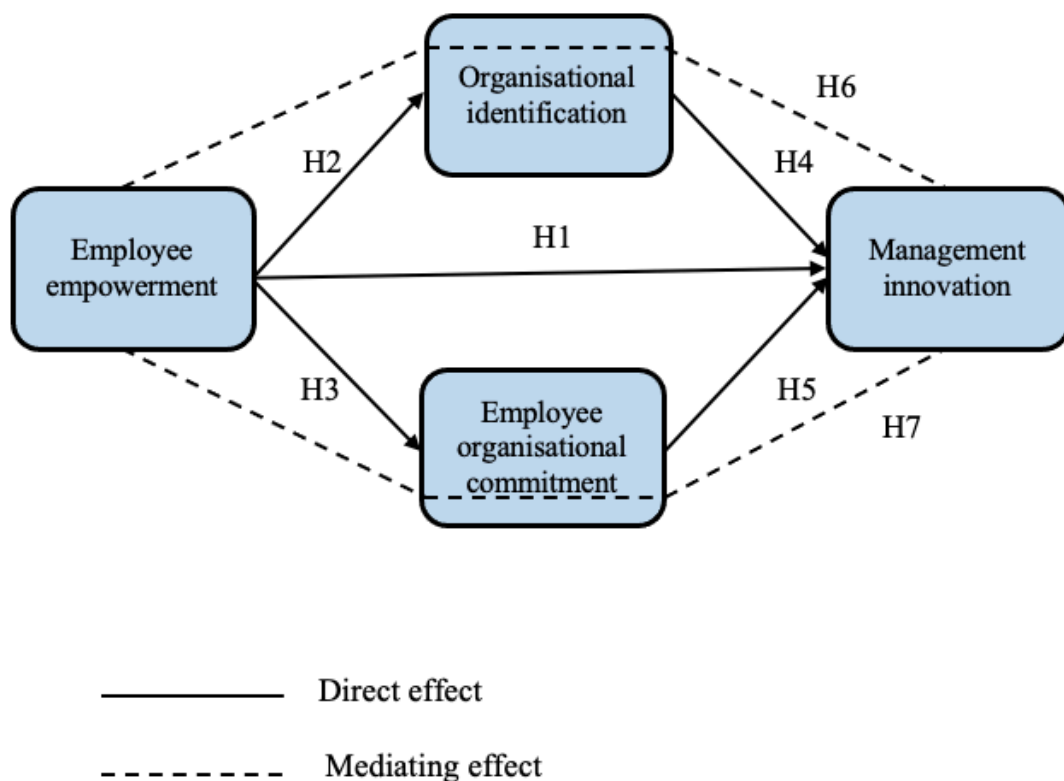
In examining the role of employee empowerment, the third aim of this study is to examine the mediating role of employee behaviour (i.e., organisational identification) and employee attitudes (i.e., employee organisational commitment) in the association between employee empowerment and management innovation. The focus on the mediating role of organisational identification and employee organisational commitment is pertinent for two reasons. First, the psychological relationship between employees and the organisation can create positive perceptions about innovation, thereby influencing employees' behavioural outcomes. Hence, when employees grow more attached to their organisation through strong organisational identification and commitment, they are more likely to be motivated to utilise management innovations to a greater extent (Cadwallader et al., 2010). Secondly, given management innovation has gained considerable attention in the literature and within organisations, it is worthwhile to study both the direct and indirect influence of organisational factors (Khosravi et al., 2019; Volberda et al., 2013; Wolfe, 1994; Damanpour, 1991).

Hence, in summary, and as depicted in Figure 2.1, the objectives of the study are to:

1. Provide an insight into the the extent of use of management innovation in organisations;
2. Examine the influence of employee empowerment in driving the use of management innovation; and

3. Examine the mediating role of organisational identification and employee organisational commitment in the association between employee empowerment and management innovation.

**Figure 2.1 The conceptual research model**



The remainder of this paper is organised as follows. Section 2.2 presents the literature on employee empowerment and management innovation. In addition, this section develops the relevant hypotheses related to the associations among these variables. Section 2.3 discusses the research method, including the procedures of data collection and the measurement of variables. Section 2.4 presents the results of the path analysis. Finally, Section 2.5 discusses the results

and their implications, and Section 2.6 presents the limitation of the study and suggestions for future research.

## **2.2 Literature review and hypotheses development**

### **2.2.1 Management innovation**

Management innovation refers to the introduction and use of new management practices, managerial processes, organisational structures, management systems and techniques, which change and improve how managers manage their organisations, and generate value for the organisation (Lin & Su, 2014; Volberda et al., 2013; Mol & Birkinshaw, 2009; Birkinshaw et al., 2008; Hamel, 2006). Introducing new management practices involves the implementation of principles and practices that alter the organisational procedures associated with arranging and regulating the organisation's activities and tasks (Volberda et al., 2013; Birkinshaw et al., 2008; Hamel, 2006). This involves the day-to-day management of activities within the organisation. Innovation in respect to management processes focuses on routines that govern the work of managers, such as strategic planning, project management and performance assessment, including the reward system (Birkinshaw et al., 2008; Hamel, 2006). Changes to management structures relates to how organisations restructure or rearrange the organisational communication scheme in which the activities and efforts of their member are organised and aligned (Volberda et al., 2013; Birkinshaw et al., 2008). Finally, management techniques are comprised of management tools such as the Balanced Scorecard (BSC), Total Quality Management (TQM) and Activity-Based Management (ABM) (Su & Baird, 2018; Volberda et al., 2013; Birkinshaw et al., 2008; Mol & Birkinshaw, 2008).

The importance of management innovation has received the attention of management scholars and practitioners (Khosravi et al., 2019; Birkinshaw et al., 2008; Hamel, 2006). In particular,



management innovation has been recognised as playing a crucial role in enhancing organisational productivity, developing strategies and promoting organisational change and renewal (Damanpour & Aravind, 2012; Birkinshaw & Mol, 2006). Organisations seek to gain an advantage by using management innovation as a means of responding to rapid changes in the business environment, for the purpose of enhancing their organisational success and sustaining their competitive advantage (Mol and Birkinshaw, 2009; Birkinshaw et al., 2008; Hamel, 2006). Therefore, management innovation involves the use of “new approaches in knowledge for performing the work of management and new processes that produce changes in the organisation’s strategy, structure, administrative procedures, and systems” (Damanpour & Aravind, 2012, p. 427). While management literature has used similar terms such as administrative innovation, and managerial innovation (Volberda et al., 2013; Damanpour & Aravind, 2012; Birkinshaw et al., 2008; Gosselin, 1997; Damanpour, 1996; Kimberly & Evanisko, 1981), for the purpose of this study, the concept ‘management innovation’ will be used hereafter.

### **2.2.2 Employee empowerment**

Employee empowerment is defined as “sharing with front-line employees information about an organisation’s performance, information about rewards based on the organisation’s performance, knowledge that enables employees to understand and contribute to organisational performance, and giving employees the power to make decisions that influence organisational direction and performance” (Bowen & Lawler III, 2006, p. 157). Therefore, employee empowerment is a management practice that gives employees the opportunity to become involved with, participate in and contribute to the success of their organisation. It involves delegating power and the authority of exercising control and making decisions to lower-level employees (Kruja et al., 2016; Arneson & Ekberg, 2006; Menon, 2001; Spreitzer, 1995).

Further, empowering employees by decentralising the authority to make decisions allows employees to become involved in managing organisational activities (Jiang & Liu, 2015). Employee empowerment practices have been employed in organisations as an essential strategy for improving job satisfaction (Pelit et al., 2011; Seibert et al., 2004), organisational and individual performance, and organisational effectiveness (Liu et al., 2007; Spreitzer, 1995).

In the extant literature employee empowerment has been conceptualised according to two main perspectives: structural and psychological empowerment (Zhang and Bartol, 2010; Menon, 2001; Spreitzer, 1995). The structural empowerment approach considers the various organisational and managerial structures, practices and policies that enable empowerment at lower organisational levels (Dewettinck and van Amejide, 2011). It focuses on the initiation of empowerment through power-sharing or distribution and involves the delegation of decision-making authority and responsibilities down the organisational hierarchy (Baird et al., 2018; Maynard et al., 2012; Menon, 2001). Therefore, structural empowerment grants employees the ability to significantly influence organisational outcomes (Menon, 2001). Psychological empowerment targets individuals' experience or perception of authority, responsibility and empowerment (Maynard et al., 2012; Greasley et al., 2005; Spreitzer, 1995). It conceptualises empowerment as a motivational intrinsic process (Conger and Kanungo, 1988) at the level of employees (Dewettinck and van Amejide, 2011). Hence, structural empowerment focuses on the management perspective to initiate and implement empowerment practices while psychological empowerment highlights employees' perspective regarding their empowerment. Given the structural empowerment approach is a more objective and accurate way of assessing the level of empowerment using actual mechanisms (Baird & Wang, 2010), this study will adopt this approach.

Following Pardo del Val and Lloyd (2003), there are four dimensions of structural employee empowerment which focus on both the level of collaboration and the characteristics of how empowerment takes place: the extent of collaboration, formalisation, directness and degree of influence. The extent of collaboration refers to the level of sharing of power and influence in the decision-making process. Formalisation refers to the distinction between formal and informal methods of employee participation, with empowerment considered to be formal when “there are certain norms and rules that impose or guarantee employee participation” (Pardo del Val & Lloyd, 2003, p. 103). Directness refers to the distinction between the direct or indirect ways in which collaboration takes place, with participation considered to be direct when employees directly contribute to the decision-making process, instead of influencing the decision through someone else. Finally, the degree of influence refers to the authority given to employees to participate in the decision-making process.

As discussed in the introduction, this study examines the influence of employee empowerment on enhancing the extent of use of management innovation. Accordingly, section 2.2.3 discusses the impact of employee empowerment on management innovation. Sections 2.2.4 and 2.2.5 then discuss the association between employee empowerment with each of the two mediating factors, organisational identification and employee organisational commitment. Sections 2.2.6 and 2.2.7 then provide a discussion of the association between organisational identification and employee organisational commitment with management innovation. Finally, section 2.2.8 discusses the mediating role of organisational identification and employee organisational commitment in the association between employee empowerment and management innovation.

### **2.2.3 The association between employee empowerment and management innovation**

Employee empowerment entails distributing the responsibility to make effective decisions that improve the quality of organisational processes (Arneson & Ekberg, 2006; Bowen & Lawler III, 2006; Mishra & Spreitzer, 1998) to employees. It involves not only moving power to employees and sharing authority with them but also redistributing information and knowledge (Bowen & Lawler III, 2006). Consequently, the flow of information and knowledge between management and employees enables management to explore various ideas which assists an organisation in enhancing its processes (Gallego et al., 2012; Bhatnagar, 2012). Further, employee empowerment positively influences innovativeness (Fernandez & Moldogaziev, 2013; Seibert et al., 2011) through enhancing the innovative behaviour of employees (Knol & Van Linge, 2009), encouraging them to look for new ways to innovate and improve their work (Fernandez & Pitts, 2011; de Jong & Den Hartog, 2007). This increases the capacity of employees for creativity in problem solving (Coelho & Augusto, 2010; Rees, 1999), thereby improving organisational processes.

Management innovation involves using new practices and systems to manage organisational processes and activities (Birkinshaw et al., 2008; Hamel, 2006). Empowering employees provides them with the capacity to participate in and contribute to the introduction and implementation of these initiatives, (Damanpour et al., 2018), thereby increasing the extent of use of management innovation. Finally, empowered employees tend to have new and innovative ideas and are more flexible and capable in responding to changes (Lamm & Gordon, 2010; Wan et al., 2005; Callan, 1993). Hence, empowered employees are more likely to facilitate the extent of use of management innovation.

Therefore, it is argued that allowing employees to contribute directly through formal methods and channels, collaborate in respect to the introduction of management innovations, and have the authority to make decisions related to the implementation of such innovations, can positively influence the extent of management innovations in an organisation. Hence, we hypothesise that:

**Hypothesis 1:** Employee empowerment is positively significantly associated with management innovation.

#### **2.2.4 The association between employee empowerment and organisational identification**

Organisational identification is defined as “perceived oneness with an organisation and the experience of the organisation's successes and failures as one's own” (Mael & Ashforth, 1992, p.103). Organisational identification reflects the underlying behaviour of the psychological relationship between employees and their organisation (Ashforth et al., 2008; Sturdy, 2004). It connects individuals with their organisations, allowing organisational values, norms, and goals to be self-defining for individuals (Lee et al., 2015).

Ashforth and Mael (1989) proposed organisational identification as a form of social identification, based on social identity theory (Tajfel, 1978), which reflects employees self-identification as a member of their organisation. Tajfel (1978, p. 63) defines social identity as “that part of an individual’s self-concept which derives from their knowledge of their membership in a social group (or groups) together with the value and emotional significance attached to that membership”. According to social identity theory, individuals classify themselves into social groups such as gender, race, religion and organisational membership. Therefore, individuals’ self-concept leads them to create various social identities that each of

them is related to (Dutton et al., 1994). They identify themselves both in terms of idiosyncratic characteristics (i.e., characteristics that differentiate themselves from others) and the characteristics that they share with others (Kim et al., 2010). The more strongly that employees identify with their organisation, the more likely they are to take the organisational perspective and act in the best interests of their organisation (Dutton et al., 1994; Mael & Ashforth, 1992). This is especially the case given organisational self-identification in employees correlates with high job satisfaction, a lower rate of absence, lower employee turnover and job involvement (Lee et al., 2015; Bartels et al., 2010).

This study will examine the influence of employee empowerment on organisational identification. Empowering employees by sharing with them the authority to control organisational activities and participate in setting and achieving the organisation's goals (Zhang & Bartol, 2010; Ahearne et al., 2005; Menon, 2001; Sanchez, 1995), allows employees to better identify themselves with their organisation. Further, as employees are empowered, their trust in their organisation will increase and they will have a better relationship with their organisation. This is likely to increase their confidence in their ability to enhance organisational performance (Baird et al., 2018; Kirkman & Rosen, 1999) through continuous improvements in effort, due to the perception that their organisation values them and their capabilities and skills (Men, 2011; Lee, 2004). Hence, employees will be more willing to act and perform in the best interests of their organisation. Consequently, employees will become strongly attached to their organisation, identify with the organisation, and exert more effort towards the achievement of its goals (Lee et al., 2015; Van Knippenberg, 2000). Accordingly, we argue that empowering employees will enhance their ability to identify with their organisation, and therefore the following hypothesis is developed:

**Hypothesis 2:** Employee empowerment is positively significantly associated with organisational identification.

### **2.2.5 The association between employee empowerment and employee organisational commitment**

Employee organisational commitment is defined as an employees' identification with the values and objectives of their organisations, their willingness to work harder for their organisation and their motivation to stay with their organisation (Porter et al., 1974). The literature has theoretically and empirically discussed the conceptual differences between affective employee organisational commitment and organisational identification (Lee et al., 2015; van Knippenberg and Sleebos, 2006; Gautam et al., 2004; Ashforth & Mael, 1989), both of which reflect the psychological attachment between the employee and the organisation. According to Ashforth and Mael (1989), organisational identification reflects self-definition, thereby reflecting psychological oneness and identifying the employee and the organisation as one psychological entity. Alternatively, organisational commitment is more of an attitude towards the organisation based on the perception of social exchange between the individual and the organisation (Lee et al., 2015; van Knippenberg and Sleebos, 2006; Gautam et al., 2004; Ashforth & Mael, 1989). The importance of employee organisational commitment is extensively highlighted in the literature, with empirical evidence of its association with various work related attitudes (Shore et al., 1995) including job performance, employee turnover, job satisfaction, and employee retention (Liang et al., 2007; Paik et al., 2007).

Meyer and Allen (1991) suggested three forms of commitment: affective commitment, continuance commitment and normative commitment. *Affective commitment* refers to an employee's emotional and psychological attachment to an organisation which makes them more willing to get involved with the achievement of organisational objectives (Joo & Shim,

2010). *Continuance commitment* consists of the employee's commitment because of his or her awareness of the costs and consequences associated with leaving the organisation or due to the lack of alternative job opportunities. *Normative commitment* is created due to employees' feeling obligated to stay with their organisation because they are influenced by work culture or social norms. Both continuance and normative commitment are out of the organisation's control, while affective commitment is influenced by employees' attitudes concerning their organisation (Su et al., 2009). Therefore, affective commitment is more relevant to and the focus of this study.

The literature emphasises the importance of employee organisational commitment in the workplace with previous studies examining the various factors that influence the level of commitment, including perceived organisational support, job motivation and satisfaction, employee job performance and employee turnover (Su et al., 2009; Pool & Pool, 2007; Riketta, 2002; Rhoades et al., 2001; Eisenberger et al., 1997; Mathieu & Zajac, 1990). This study extends this literature through examining the influence of employee empowerment on the level of employee organisational commitment.

Empowering employees is likely to increase employees commitment toward their organisation for several reasons. First, delegating authority to employees will enhance their responsibility to make contributions to the decision-making process. Hence, as employees perceive that they are empowered, they will have higher confidence in their competencies and their ability to successfully perform work tasks (Janssen, 2004) and achieve positive outcomes (Seibert et al., 2011; Zhang & Bartol, 2010). Therefore, employees will be more committed and willing to contribute to the achievement of their organisation's goals (Men, 2011; Babakus et al., 2003; Kirkman & Rosen, 1999; Iverson, 1996).



Secondly, employee empowerment provides employees with an opportunity to participate and engage in various organisational decisions and to control their tasks and activities (Bowen & Lawler III, 2006; Menon, 2001; Spreitzer, 1995), which enhances employees' performance. As a result, employees will be more involved with their jobs and will have higher levels of self-determination, self-worth, and self-efficacy (Liu et al., 2007; Janssen, 2004; Zhu et al., 2004). This is expected to result in employees exhibiting a high level of commitment (Lee et al., 2015; Seibert et al., 2011; Kirkman & Rosen, 1999; Kraimer et al., 1999). Therefore, the following hypothesis is developed:

**Hypothesis 3:** Employee empowerment is positively significantly associated with employee organisational commitment.

### **2.2.6 The association between organisational identification and management innovation**

Organisational identification plays an important role in predicting an organisation's innovation, as employees who strongly identify with their organisation, are more likely to be motivated to engage in innovative activities (Hartmann, 2006; Pierce & Delbecq, 1977). Further, from a goal congruence perspective, the more strongly that employees identify themselves with their organisation, the more likely that they will act and make work choices that benefit the organisation's goals (Lee et al., 2015; Kim et al., 2010; Dutton et al., 1994; Vancouver & Schmitt, 1991; Ashforth & Mael, 1989). It is also more likely that employees will take risks and generate creative ideas that benefit their organisation (Liu et al., 2016; Janssen, 2003). Alternatively, a low degree of organisational identification, where there are differences in values or miscommunication between management levels, may constrain management innovation (Heyden et al., 2018).

Therefore, it is argued that the stronger the organisational identification for employees (e.g., middle-level managers), the greater the extent of use of management innovation in their organisation, with the following hypothesis developed:

**Hypothesis 4:** Organisational identification is positively significantly associated with management innovation.

### **2.2.7 The association between employee organisational commitment and management innovation**

When employees have higher levels of commitment to their organisation, they are more willing to demonstrate positive work behaviour, and more motivated to allocate their time and exert effort on behalf of the organisation (Tsai & Yen, 2018; Chong & Eggleton, 2007). Further, employees with high levels of commitment are more likely to be innovative in their workplace (Xerri & Brunetto, 2013; Michaelis et al., 2009; Mathieu & Zajac, 1990; Perry & Wise, 1990), suggesting and implementing new ideas with the intention to improve the performance of their organisation (Jafri, 2010). For example, Toyota enhanced employee commitment as a strategy to achieve effective organisational performance. As a result, Toyota became the leading company in using lean production and the JIT system. Further, Kwak and Anbari (2006) argued that employee organisational commitment is considered to be one of the factors that influenced the successful use of Six Sigma, a type of management innovation. Similarly, Darnall et al. (2008) maintained that employee commitment to the organisation's environmental strategy facilitated the use of another type of management innovation, an environmental management system. Therefore, it is expected that when employees exhibit a high level of organisational commitment, they are more likely to use management innovation to a greater extent. Accordingly, the following hypothesis is developed:

**Hypothesis 5:** Employee organisational commitment is positively associated with management innovation.

### **2.2.8 The mediating effect of organisational identification and employee organisational commitment in the association between employee empowerment and management innovation**

In line with the previous hypotheses which maintain that employee empowerment influences both organisational identification and employee organisational commitment, which subsequently, influence management innovation, it is suggested that organisational identification and employee organisational commitment mediate the association between employee empowerment and management innovation. Accordingly, this study argues that empowering employees is operationalised through their perception of strong organisational identification and/or a high level of employee organisational commitment, which in turn results in a greater extent of use of management innovation. Hence, the study examines the following two hypotheses:

**Hypothesis 6:** Organisational identification will significantly mediate the association between employee empowerment and management innovation.

**Hypothesis 7:** Employee organisational commitment will significantly mediate the association between employee empowerment and management innovation.

## **2.3 Method**

### **2.3.1 Data collection**

The mail survey method was used in this study for several reasons. First, it is a common method used to collect data in the management accounting field (Van der Stede et al., 2005), and consists of closed-ended questions that could be completed by respondents without the intervention of the researcher. Secondly, using the mail survey enabled us to cover a wider geographic area of participants, thereby expanding the generalisability of the findings. Thirdly, the mail survey method is suitable to collect data on a large number of questions in an efficient and timely manner.

A random sample of 840 middle-level managers across Australian organisations were identified in the OneSource database (D&B Hoovers)<sup>5</sup>. The contact information was then verified by making telephone calls to the selected managers, checking the organisations' websites and the managers' LinkedIn accounts, to confirm their names, positions and addresses. After eliminating managers who were unwilling to participate and non-existent organisations, a final sample of 480 managers were identified. The questionnaires were sent to operating managers (e.g., in finance, marketing, production, research and development, business development and human resources), on the expectation that they possessed the essential information related to their organisation's operations in order to complete the questionnaire.

The style and format of the design of the mail questionnaire and its distribution procedures were structured using Dillman's (2007) Tailored Design Method (TDM) to maximise the response rate. This approach is efficient in increasing response rates through providing

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<sup>5</sup> OneSource is a dataset that provides in-depth business information of private and public companies.

guidelines in respect to the style, format and procedures used to distribute the questionnaire. Specifically, the questionnaire was organised in a respondent-friendly style by structuring the questions with simple words and presenting it in colour to ensure that the questionnaire was more attractive to the participants. In addition, the questionnaire was structured to be as straightforward as possible, and to require no more than 15 minutes to complete it.

Despite the use of the TDM approach, only forty-six (46) complete questionnaires were returned from the first and second mail-outs, with a response rate of about 10%. therefore, due to the insufficient responses obtained, an online survey using the Qualtrics platform was subsequently conducted to collect the additional data required. A further 110 completed questionnaires were received using this approach, resulting in a total of 156 completed questionnaires available for data analysis.

Non-response bias for the mail questionnaires was tested by comparing the mean scores of the independent and dependent variables for the early respondents (i.e., first mail-out) with the late respondents (i.e., second mail-out) (Roberts, 1999). The results indicated that there were no significant differences, and therefore non-response bias was not considered to be a problem for the mail questionnaire. Similarly, in respect to the responses from Qualtrics, the mean scores for the first 55 responses were compared with the second 55 responses, and no significant differences were found.

In addition, Harman's (1967) single-factor test was performed to test for common method bias. The results indicated that the total variance explained by a single factor was 31.72%, which is below the recommended threshold of 50% (Podsakoff et al., 2003). Therefore, common method bias was not considered to be a problem.

## **2.3.2 Measurement of variables**

### **2.3.2.1 Management innovation**

The study used the Volberda et al. (2013) integrative framework to conceptualise management innovation. The framework conceptualises management innovation using the four dimensions suggested by Birkinshaw et al. (2008): new management practices, new management processes, new management structure, and new management techniques. The first three dimensions, management practices, processes, and structure, were measured using the Vaccaro et al. (2012) six-item scale, with two items used to measure each dimension. Respondents were asked to indicate the extent to which they agreed with the six statements concerning the extent of use of management innovation in their current organisation, using a 5-point Likert scale with anchors of “1 = *Strongly Disagree*” and “5 = *Strongly Agree*” (see Appendix 2A). In respect to management practices, the respondents were asked to indicate the extent to which they agreed that rules and procedures within their organisations are regularly renewed and whether they regularly make changes to their employees’ tasks and functions. In regard to management processes, the respondents were asked to indicate the extent to which they agreed that their organisation regularly implemented new management systems and whether their employee compensation policy had changed. The management structures were assessed based on whether organisations regularly restructured their intra- and inter-departmental communication structure and changed the elements of the organisational structure.

Following Baird et al. (2019) and Su and Baird (2018), the fourth dimension of management innovation, management techniques, was measured based on the extent of use of six contemporary innovative management accounting techniques: TQM, BSC, ABM, Benchmarking, Environmental Management Accounting (EMA) and Value Chain Analysis

(VCA). To measure this dimension, a 5-point scale was used with anchors of “1 = *Not at all*” and “5 = *To a great extent*”.

Exploratory factor analysis (EFA), with varimax rotation, was conducted on the 12 items used to measure management innovation. The items loaded onto two dimensions, which accounted for 63.84% of the total variance (see Table 2.1). The first dimension included items 1–6, which measured the use of new management practices, new management processes and new management structures, and therefore, it was labelled “management innovation practices”. The second dimension contained items 7–12, which measured the use of new management techniques, and therefore was labelled “management innovation techniques”.

**Table 2.1 Factor analysis of the management innovation items**

Item	Factor	
	Management innovation techniques	Management innovation practices
1. Rules and procedures within our business unit are regularly renewed.	0.054	<b>0.699</b>
2. We regularly make changes to our employees' tasks and functions.	0.148	<b>0.801</b>
3. Our business unit regularly implements new management systems.	0.181	<b>0.832</b>
4. The policy with regard to employee compensation has been changed in the last three years.	0.266	<b>0.644</b>
5. The intra- and inter-departmental communication structure within our business unit is regularly restructured.	0.328	<b>0.756</b>
6. We continuously alter certain elements of the business unit's structure.	0.336	<b>0.723</b>
7. Total Quality Management	<b>0.622</b>	0.461
8. Balanced Scorecard	<b>0.793</b>	0.187
9. Activity Based Management	<b>0.829</b>	0.133
10. Benchmarking	<b>0.743</b>	0.216
11. Environmental Management Accounting	<b>0.796</b>	0.263
12. Value Chain Analysis	<b>0.826</b>	0.168

Extraction Method: Principal Component Analysis.  
Rotation Method: Varimax with Kaiser Normalisation.  
Rotation converged in 3 iterations.

Confirmatory factor analysis (CFA) was conducted to determine the validity of the model for each construct of management innovation (see Appendix 2B and Table 2.2). The model for the management innovation practices dimension achieved an acceptable fit (CMIN/DF = 2.109; GFI = 0.968; CFI = 0.981; RMSEA = 0.085), with a Cronbach alpha score of 0.869, which exceeds the required 0.70 standard of reliability (Nunnally, 1978). The CFA results for the management innovation techniques dimension also exhibited a good model fit (CMIN/DF = 1.614; GFI = 0.973; CFI = 0.990; RMSEA = 0.063), with a Cronbach alpha score of 0.890. Accordingly, management innovation practices and management innovation techniques were



measured as the average score of the items loading on each dimension, with higher scores reflecting a higher (lower) extent of use of management innovation practices/techniques.

**Table 2.2 Results of the measurement models**

Variables	No. of items	Cronbach's $\alpha$	CMIN/DF	df	GFI	CFI	RMSEA
Management innovation practices	6	0.869	2.109	7	0.968	0.981	0.085
Management innovation techniques	6	0.890	1.614	8	0.973	0.990	0.063
Employee empowerment	4	0.898	1.592	2	0.990	0.997	0.062
Organisational identification	3	0.778	N/A	N/A	N/A	N/A	N/A
Employee organisational involvement	4	0.872	2.709	1	0.991	0.995	0.105
Employee organisational attachment	3	0.779	N/A	N/A	N/A	N/A	N/A

**Note:** Recommended threshold CMIN/DF < 5; GFI > 0.90; CFI > 0.95; AGFI > 0.90; RMSEA < 0.08

### 2.3.2.2 Employee empowerment

Employee empowerment was measured using an adapted version of Pardo del Val and Lloyd's (2003) instrument, which focuses on measuring the extent of collaboration, formalisation, directness and the degree of influence. Respondents were required to indicate the extent to which current practices in their business unit reflected each aspect of employee empowerment in respect to front-line staff in their organisation: i.e., the level of collaboration, formalization, directness of empowerment and the degree of influence, on a 5-point scale with anchors of "1 = *Not at all*" and "5 = *To a great extent*". CFA was performed to assess the validity of the model, with the results indicating a good model fit (CMIN/DF = 1.592; GFI = 0.990; CFI = 0.997; RMSEA = 0.062) (see Table 2), with a Cronbach's alpha score of 0.898. The level of

employee empowerment was measured as the average score of the four measures, with higher (lower) scores representing higher (lower) levels of employee empowerment.

### **2.3.2.3 Organisational identification**

The organisational identification scale was adapted from Mael and Ashforth (1992). Respondents were required to indicate the extent to which they agreed with each of the six statements on a 5-point Likert scale with anchors of “1 = *Strongly disagree*” and “5 = *Strongly agree*” (see Appendix 2A). EFA was conducted with the results indicating that the six items loaded onto one factor. However, CFA (see Appendix 2B) indicated that three items (“When someone criticises my organisation, it feels like a personal insult”, “I am very interested in what others think about my organisation” and “If a story in the media criticised my organisation, I would feel embarrassed”) had standardised factor loads less than (0.6), and hence, they were removed. The remaining three items exhibited a Cronbach’s alpha of 0.778, which exceeds the acceptable scale reliability of 0.70 (Nunnally, 1978). However, the scores of the goodness of fit were not available as there were only three items left.

### **2.3.2.4 Employee organisational commitment**

Employee organisational commitment was measured by adapting Cook and Wall’s (1980) nine-item scale. Respondents were required to indicate the extent to which they agreed with each of the nine statements (see Appendix 2A) using a 5-point Likert scale with anchors of “1 = *Strongly Disagree*” and “5 = *Strongly Agree*”. For the items that were negatively phrased (items 2, 3 and 8), reverse scoring was applied. EFA (see Table 2.3) revealed that the nine items loaded onto two dimensions, which accounted for 61.04% of the total variance. The first dimension included six items which all reflect the degree of employees’ involvement with their organisations, and therefore was labelled “employee organisational involvement”.

**Table 2.3 Factor analysis of the employee organisational commitment measures**

Items	Factors	
	Involvement	Attachment
1. I am quite proud to be able to tell people who it is I work for.	<b>0.774</b>	0.158
2. I sometimes feel like leaving this organisation for good	0.119	<b>0.839</b>
3. I am not willing to put myself out just to help the organisation.	0.041	<b>0.813</b>
4. Even if my organisation was not doing well financially, I would be reluctant to change to another organisation	<b>0.575</b>	-0.104
5. I feel that I am a part of the organisation	<b>0.830</b>	0.252
6. In my work I like to feel I am applying some effort not just for myself but for the organisation as well.	<b>0.836</b>	0.086
7. The offer of a small increase in remuneration by another employer would not seriously make me think of changing my job.	<b>0.519</b>	0.002
8. I would not advise a close friend to join my organisation	0.067	<b>0.853</b>
9. I am determined to make a contribution for the good of my organisation.	<b>0.816</b>	0.142

Extraction Method: Principal Component Analysis.  
Rotation Method: Varimax with Kaiser Normalisation.  
Rotation converged in 3 iterations

However, CFA (see Appendix 2B) revealed that items 4 and 7 had standardised factor loading less than 0.6 and hence, they were removed. The remaining four items exhibited a good model fit (CMIN/DF = 2.709; GFI = 0.991; CFI = 0.995; RMSEA = 0.105) (see Table 2.2), with a Cronbach's alpha of 0.872. The second dimension included three items, which all reflect employees' attachment to their organisation, and hence was labelled "employee organisational attachment". While a goodness of fit measure could not be determined as there were only three items, the Cronbach's alpha score of 0.793 supported the reliability of the measure.

## 2.4 Results

### 2.4.1 Descriptive statistics

Table 2.4 presents the descriptive statistics. The mean score for management innovation suggests that the highest extent of use of management innovation involves practices (mean score = 3.40) rather than techniques (mean score = 3.18). The mean score for employee empowerment is moderate (mean score = 3.21) while the mean score for organisational identification is high (mean score = 3.99). Finally, in respect to employee organisational commitment, the mean score for employee organisational involvement is 4.11, while it is much less for employee organisational attachment (2.70).

**Table 2.4 Descriptive statistics**

Variables	Mean	SD	Minimum	Maximum
Management innovation practices	3.40	0.86	1.00	5.00
Management innovation techniques	3.18	1.09	1.00	5.00
Employee empowerment	3.21	1.09	1.00	5.00
Organisational identification	3.99	0.80	1.00	5.00
Employee organisational involvement	4.11	0.77	1.00	5.00
Employee organisational attachment	2.700	1.095	1.00	5.00

Table 2.5 presents additional descriptive statistics on the extent of use of each of the twelve management innovations. The management innovation that organisations most commonly use is “regularly renewed the rules and procedures” with a mean score of 3.65, followed by “alter certain elements of the business unit’s structure” (mean score = 3.42) and both “we regularly make changes to our employees’ tasks and functions” and “benchmarking” (mean score = 3.40). This shows that organisations are more likely to change and renew their rules and procedures, change their employees’ tasks and functions, implement new management systems, and alter organisational structures. The least used management innovations were

“environmental management accounting” (mean score = 2.94) and “value chain analysis” (mean score = 2.95).

**Table 2.5 The extent of use of management innovation**

Items	Mean	SD
1. Rules and procedures within our business unit are regularly renewed	3.65	1.046
2. We regularly make changes to our employees' tasks and functions.	3.40	1.058
3. Our business unit regularly implements new management systems.	3.34	1.122
4. The policy with regard to employee compensation has been changed in the last three years.	3.37	1.175
5. The intra- and inter-departmental communication structure within our business unit is regularly restructured.	3.25	1.122
6. We continuously alter certain elements of the business unit's structure.	3.42	1.095
7. Total Quality Management	3.29	1.344
8. Balanced Scorecard	3.09	1.351
9. Activity Based Management	3.39	1.305
10. Benchmarking	3.40	1.274
11. Environmental Management Accounting	2.94	1.431
12. Value Chain Analysis	2.95	1.404

N= 156. Minimum=1. Maximum=5.

Further, Table 2.6 provides additional analysis on the extent of use of management innovations across various industries, with management innovation divided into the two dimensions: management innovation practices and management innovation techniques. The highest extent of use of management innovation practices was in the professional and administrative services industry (mean = 3.86) followed by the technology (mean = 3.65) and construction (mean = 3.49) industries. The highest extent of use of management innovation techniques was found in the construction industry (mean = 3.72), followed by the technology (mean = 3.52) and professional and administrative services (mean = 3.46) industry.

**Table 2.6 The extent of use of management innovation by industry**

Industry *	Management innovation practices			Management innovation techniques		
	N (%)	Mean (SD)	Min (Max)	N (%)	Mean (SD)	Min (Max)
1	18 (11.52)	3.23 (0.83)	1.00 (4.17)	18 (11.52)	3.21(1.19)	1.00 (5.00)
2	5 (3.20)	3.27 (0.92)	2.50 (4.50)	5 (3.20)	2.80 (1.46)	1.33 (5.00)
3	12 (7.70)	3.49 (0.71)	2.67 (5.00)	12 (7.70)	3.72 (0.80)	2.00 (4.67)
4	8 (5.13)	3.17 (1.07)	1.17 (4.50)	8 (5.13)	3.06 (0.99)	1.00 (4.33)
5	15 (9.62)	3.21 (0.80)	1.33 (4.67)	15 (9.62)	3.27 (0.92)	1.00 (4.33)
6	26 (16.67)	3.65 (0.80)	1.67 (5.00)	26 (16.67)	3.52 (1.00)	1.17 (5.00)
7	4 (2.56)	3.21 (1.51)	1.00 (4.33)	4 (2.56)	3.38 (1.05)	2.17 (4.33)
8	24 (15.38)	3.86 (0.84)	1.70 (5.00)	24 (15.38)	3.46 (1.00)	1.67 (5.00)
9	44 (28.20)	3.19 (0.79)	1.00 (4.33)	44 (28.20)	2.68 (1.10)	1.00 (4.50)
10	18 (11.52)	3.23 (0.83)	1.00 (4.17)	18 (11.52)	3.21(1.19)	1.00 (5.00)

\*: Industries: (1) Manufacturing, (2) Mining, (3) Construction, (4) Consulting, (5) Health care and social assistance, (6) Technology, (7) Utilities, (8) Professional and administrative services, (10) Others.

## 2.4.2 Reliability and validity

To test the internal consistency and reliability, the scores for Cronbach's alpha (Nunnally, 1978) and composite reliability (Bagozzi & Yi, 1988) were calculated, with the results in Table 2.7 indicating that they exceeded the recommended scores of 0.70. Convergent validity was tested by calculating the average variance extracted (AVE), with the results in Table 2.7 indicating that the AVE scores for all the examined variables exceed the recommended threshold of 0.50. In addition, discriminant validity was assessed by comparing the square root of the AVE of each construct with the correlation scores between the (Fornell & Larcker, 1981). The results in Table 2.8 provide support for the discriminant validity.

**Table 2.7 Results of average variance extracted (AVE), composite reliability, and Cronbach's alpha**

Variable	AVE	Composite reliability	Cronbach's alpha
Management innovation practices	0.512	0.861	0.869
Management innovation techniques	0.564	0.886	0.890
Employee empowerment	0.690	0.899	0.898
Organisational identification	0.537	0.774	0.774
Employee organisational involvement	0.608	0.860	0.872
Employee organisational attachment	0.552	0.785	0.793

**Table 2.8 Square root of AVE and correlations**

Variables	1	2	3	4	5	6
1. Management innovation techniques	<b>0.750</b>					
2. Management innovation practices	0.552	<b>0.715</b>				
3. Employee empowerment	0.504	0.447	<b>0.830</b>			
4. Organisational identification	0.287	0.266	0.334	<b>0.732</b>		
5. Employee organisational involvement	0.184	0.243	0.282	0.669	<b>0.779</b>	
6. Employee organisational attachment	0.238	0.194	0.111	-0.09	-0.29	<b>0.743</b>

*Note:* The diagonal scores in bold represent the square root of AVE

### 2.4.3 Path analysis

This study used the structural equation modelling (SEM) to test its hypotheses, with the results of the path analysis presented in Table 2.9 and shown in Figure 2.2. Non-significant paths were removed until all of the remaining paths in the model were significant (Anderson & Gerbing, 1988). The results indicate a good model fit<sup>6</sup> (CMIN/DF = 1.276; GFI = 0.989; AGFI = 0.944; CFI = 0.996; RMSEA = 0.042). Employee empowerment was found to be positively associated with both dimensions of management innovation: management innovation practices ( $\beta = 0.37$ ,  $p = 0.00$ ) and management innovation techniques ( $\beta = 0.44$ ,  $p = 0.00$ ), thereby providing support for *Hypothesis 1*.

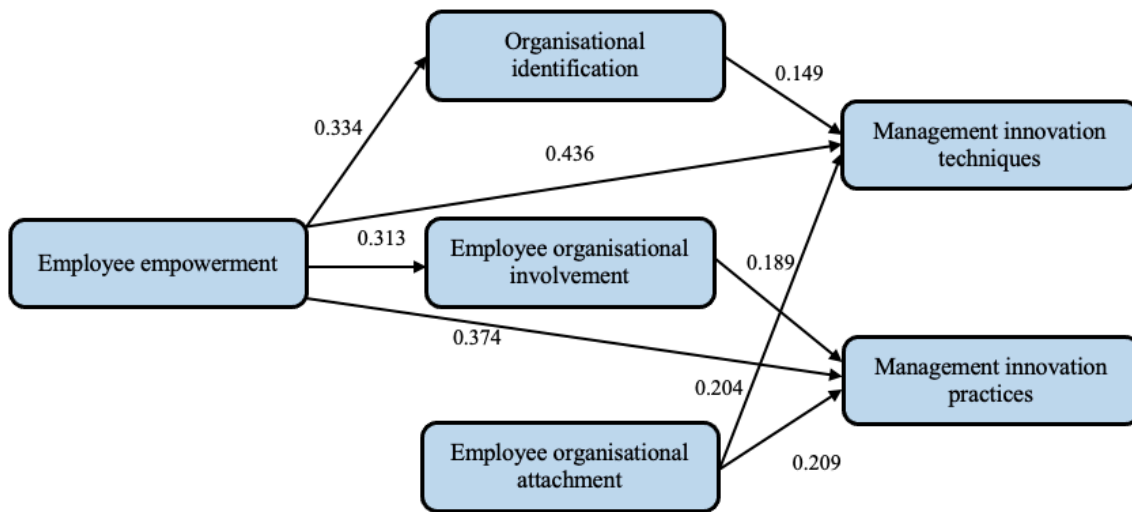
<sup>6</sup> Values of CMIN/DF < 5; CF I  $\geq$  0.95, GFI < 0.90, AGFI < 0.90 and RMSEA < 0.08 (Hooper et al., 2008; Hu & Bentler, 1999) are considered to be good.

In addition, employee empowerment was found to be positively related with organisational identification ( $\beta = 0.33$ ,  $p = 0.00$ ), providing support for *Hypothesis 2*. Employee empowerment was also found to be positively related with the employee organisational involvement dimension of employee organisational commitment ( $\beta = 0.31$ ,  $p = 0.00$ ). However, the results reveal no significant association between employee empowerment and the employee organisational attachment dimension of employee organisational commitment, and therefore *Hypothesis 3* is partially supported.

Regarding the influence of organisational identification on management innovation, the results show a significant positive association between organisational identification and management innovation techniques ( $\beta = 0.15$ ,  $p = 0.03$ ). Hence *Hypothesis 4* is partially supported. Furthermore, the employee organisational involvement dimension of employee organisational commitment is positively associated with management innovation practices ( $\beta = 0.20$ ,  $p = 0.01$ ), and the employee organisational attachment dimension of employee organisational commitment exhibited a positive association with both management innovation practices ( $\beta = 0.21$ ,  $p = 0.00$ ) and management innovation techniques ( $\beta = 0.20$ ,  $p = 0.00$ ). Therefore, although employee organisational involvement was not found to be associated with management innovation techniques, *Hypothesis 5* is partially supported.



**Figure 2.2 The results of SEM**



**Table 2.9 Results of the path analysis for the association between employee empowerment, organisational identification, employee organisational commitment, and management innovation**

Description of path	Path coefficient*	SE	t-value	P
Employee empowerment → Management innovation practices	0.374	0.057	5.084	0.000
Employee empowerment → Management innovation techniques	0.436	0.070	6.139	0.000
Employee empowerment → Organisational identification	0.334	0.056	4.415	0.000
Employee empowerment → Employee organisational involvement	0.313	0.052	4.249	0.000
Organisational identification → Management innovation techniques	0.149	0.091	2.186	0.029
Employee organisational involvement → Management innovation practices	0.189	0.081	2.602	0.009
Employee organisational attachment → Management innovation practices	0.209	0.056	2.898	0.004
Employee organisational attachment → Management innovation techniques	0.204	0.066	3.034	0.002
Goodness-of-fit indices: CMIN/DF = 1.276, GFI = 0.989, AGFI = 0.944, CFI = 0.996, RMSEA = 0.042				

#### 2.4.4 The mediating role of organisational identification and employee organisational commitment on the association between employee empowerment and management innovation

Bootstrapping with a bias-corrected confidence interval method was used to test the mediating effect of organisational identification and employee organisational commitment (MacKinnon et al., 2002) on the association between employee empowerment and management innovation. Table 2.10 indicates that organisational identification partially mediates the positive association between employee empowerment and management innovation techniques, as the confidence interval (CI) (lower bound (LB) of 0.010 and upper bound (UB) of 0.120) does not cross zero. Accordingly, *Hypothesis 6* is partially supported. Furthermore, employee organisational involvement partially mediates the positive association between employee empowerment and management innovation practices, as the CI (LB of 0.001 and UB of 0.141) does not cross zero. Hence, *Hypothesis 7* is also partially supported.

**Table 2.10 Bootstrapping regression analysis of the mediation effect of organisational identification and employee organisational involvement in the association between employee empowerment and management innovation**

	Management innovation practices			Management innovation techniques		
	LB	UB	P-	LB	UB	P-
	95% CI	95% CI	value	95% CI	95% CI	value
Organisational identification	-	-	-	0.010	0.120	<b>0.013</b>
Employee organisational involvement	0.001	0.141	<b>0.044</b>	-	-	-

## **2.5 Discussion and conclusion**

### **2.5.1 Discussion**

This section discusses the results of the study. First, section 2.5.1.1 discusses the findings in respect to the extent of use of management innovation. Next, section 2.5.1.2 discusses the results of the association between employee empowerment and management innovation. Finally, section 2.5.1.3 provides a discussion of the findings in respect to the mediating effect of organisational identification and employee organisational commitment in the association between employee empowerment and management innovation.

#### **2.5.1.1 Extent of use of management innovation**

The study had three objectives, the first of which was to provide an insight into the extent of use of management innovation. Therefore, the study examined the extent of use of management innovation using the Volberda et al. (2013) integrative framework of management innovation. While previous studies have reported four dimensions of management innovation, the results indicated that the various aspects of management innovation loaded onto two dimensions: practices, which encompasses the Volberda et al. (2013) practices, processes and structures; and techniques which is equivalent to the Volberda et al. (2013) techniques. The findings highlighted the variations in the extent of use of management innovation at the organisational level and the extent of use across industries. In particular, the findings indicate that the extent of use of management innovation in organisations was moderate, with the highest extent of use of management innovation relating to the use of new management practices rather than new management techniques. Further, the results showed that the greatest use of management innovation (both practices and techniques) across organisations is in the professional and administrative services, technology and construction industries. This reveals that while the importance of management innovation is evidenced in the literature (Volberda et al., 2013; Mol

& Birkinshaw, 2006, 2009; Birkinshaw et al., 2008; Hamel, 2006), organisations are still not using management innovation to a great extent. Accordingly, in addition to making organisations aware of the benefits of management innovation, the findings will assist them in identifying the areas of their organisation that they need to strengthen in respect to management innovation, in order to enhance organisational competitiveness and effectiveness. For example, given previous studies have found strong evidence of the advantage of management innovation techniques, which consist of various management accounting techniques such as the BSC and TQM, organisations may need to increase their extent of use of management innovation techniques.

#### **2.5.1.2 The association between employee empowerment and management innovation**

The second objective of the study was to examine the role of employees as drivers of the use of management innovation. The findings here contribute to the limited contingency-based literature examining the factors influencing management innovation (Khosravi et al., 2019; Su & Baird, 2018; Volberda et al., 2013; Vaccaro et al., 2012; Birkinshaw et al., 2008) by providing empirical evidence regarding the critical role of employee empowerment as an internal antecedent of the use of management innovation. The findings highlight the important role of employee empowerment in enhancing the extent of use of management innovation. Specifically, employee empowerment was found to exhibit a significant positive influence on management innovation in terms of using both new management practices and techniques. Hence, the higher the level of employee empowerment in organisations, the higher the extent of use of management innovation. Therefore, it is recommended that organisations that need to respond rapidly to changes in the environment through using management innovations, should promote and implement employee empowerment practices to a greater extent. Specifically, as lower-level employees possess timely information about operations and the

necessary and relevant knowledge of their departments, ensuring their empowerment will allow them to enhance the efficiency of their organisational processes and the management of their departments by using and implementing appropriate management innovations. Hence, organisations should recognise the importance of employee empowerment practices and emphasise the implementation of empowerment practices to enable employees to participate and drive management innovation in their organisations.

### **2.5.1.3 The mediating effect of organisational identification and employee organisational commitment on the association between employee empowerment and management innovation**

The third objective of the study was to examine the mediating effect of organisational identification and employee organisational commitment in the association between employee empowerment and management innovation. The results reveal that organisational identification and the employee organisational involvement dimension of employee organisational commitment, partly mediate the association between employee empowerment and management innovation. First, the findings indicate that the extent of use of management innovation techniques is influenced by the indirect effect of employee empowerment through organisational identification. In other words, the impact of employee empowerment on management innovation techniques occurs due to the effect of empowerment on organisational identification, and the subsequent influence of organisational identification on management innovation techniques. Specifically, sharing the authority with middle-level managers and providing them the opportunity to directly collaborate in the decision-making processes is more likely to enhance their identification with the organisation, with their enhanced organisational identification encouraging them to increase the rate at which they use and implement management innovations techniques. Therefore, it is recommended that organisations should place more emphasis on delegating the authority of decision making to middle-level managers,

so as to provide them with more flexibility and enable them to introduce innovative ways of managing their tasks. At the same time, organisations should reflect on the importance of enhancing their employees' level of organisational identification. Hence, while the promotion of empowerment practices represents one way in which this can be achieved, organisations should also endeavour to take other actions to enhance the organisational identification of their employees due to the subsequent positive influence on management innovation.

Secondly, the employee organisational involvement dimension was found to mediate the association between employee empowerment and management innovation practices. This result indicates that the extent of use of management innovation practices is attributable to the indirect effect of employee empowerment through employee organisational involvement. This finding confirms the importance of sharing decision-making authority with employees in order to enhance their commitment to the organisation (Seibert et al., 2011; Kirkman & Rosen, 1999). In particular, open formal channels of exchanging information and ideas between an organisation and its employees, as well as giving employees the opportunity to participate in setting and achieving organisational objectives will increase their commitment, and subsequently result in enhancing their ability to use management innovation practices to a greater extent (Tsai & Yen, 2018; Vakola & Nikolaou, 2005). Therefore, again it is recommended that organisations will benefit from management innovation if they develop a workplace that promotes empowerment. Specifically, this will enhance middle-level managers' commitment and motivate them to put more time and energy into introducing management innovation practices. Further, given the importance of employee organisational commitment in enhancing management innovation, organisations should also consider engaging in other actions which may enhance the level of employee organisational involvement (i.e., commitment).

Finally, employee organisational attachment, the other dimension of employee organisational commitment, was found to be associated with both management innovation practices and techniques. Therefore, this result suggests that managers should increase the level of their employees' commitment in respect to their attachment, so as to increase their extent of use of management innovation, both practices and techniques. However, employee organisational attachment was not found to be associated with employee empowerment, and therefore, it does not mediate the association between employee empowerment and management innovation.

### **2.5.2 Conclusion**

This study highlights the role of employees as internal antecedents of management innovation, with the findings contributing to the literature and providing important managerial implications. The results of the study contribute to the literature in several ways. First, the study provides an insight into the extent of use of management innovation within organisations and across industries. Second, the study contributes to the limited contingency-based literature examining the contingency factors influencing management innovation. In particular, the findings reveal that empowering employees and enhancing their organisational identification and their organisational commitment contribute to the enhancement of the extent of use of management innovation. Thirdly, this study provides empirical evidence on the mediating role of organisational identification (employee organisational commitment) in the association between employee empowerment and management innovation techniques (practices).

The study provides a number of practical implications. In particular, given the findings highlight the significant positive influence of employee empowerment on both management innovation practices and techniques, both directly and indirectly through organisational identification and employee organisational commitment, managers are encouraged to increase

the extent of and emphasise the implementation of employee empowerment within their organisation. Further, given the results confirm the importance of organisational identification and employee organisational commitment as mediators of the association between employee empowerment and management innovation, in addition to emphasising employee empowerment, managers should consider other antecedents factors and the actions that they can take to enhance these employee related factors due to their critical influence on management innovation.

## **2.6 Limitations and directions for future research**

The study used a survey method and is therefore subject to the usual limitations of that method, including social desirability bias, which creates the potential for measurement error, and the lack of evidence to enable the establishment of a causal relationship between variables (Singleton & Straits, 2010). Given the literature emphasises the importance of employee empowerment for organisational effectiveness (Liu et al., 2007; Spreitzer, 1995), and that the results highlight the positive influence of employee empowerment on management innovation, future research may further investigate this association by conducting in-depth case studies through interviews. In addition, while the findings of this study provide empirical evidence of the role of employees in using management innovation, future research may explore and investigate the influence of other organisational factors on management innovation. Future research may also empirically examine the effectiveness of management innovation in terms of its influence on organisational performance, competitive advantage, and other organisational outcomes.



## References

- Ahearne, M., Mathieu, J., & Rapp, A. (2005). To empower or not to empower your sales force? An empirical examination of the influence of leadership empowerment behavior on customer satisfaction and performance. *Journal of Applied Psychology, 90*(5), 945–955.
- Anderson, J., & Gerbing, D. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin, 103*(3), 411–423.
- Arneson, H., & Ekberg, K. (2006). Measuring empowerment in working life: a review. *Work, 26*(1), 37–46.
- Ashforth, B., Harrison, S., & Corley, K. (2008). Identification in organizations: An examination of four fundamental questions. *Journal of Management, 34*(3), 325–374.
- Ashforth, B., & Mael, F. (1989). Social identity theory and the organization. *Academy of Management Review, 14*(1), 20–39.
- Babakus, E., Yavas, U., Karatepe, O., & Avci, T. (2003). The effect of management commitment to service quality on employees' affective and performance outcomes. *Journal of the Academy of Marketing Science, 31*(3), 272–286.
- Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science, 16*(1), 74–94.
- Baird, K., Su, S., & Munir, R. (2018). The relationship between the enabling use of controls, employee empowerment, and performance. *Personnel Review, 31*(5), 358–375.
- Baird, K., Su, S., & Munir, R. (2019). Levers of control, management innovation and organisational performance. *Pacific Accounting Review, 31*(3), 358–375.
- Baird, K., & Wang, H. (2010). Employee empowerment: Extent of adoption and influential factors. *Personnel Review, 39*(5), 574–599.
- Bartels, J., Peters, O., de Jong, M., Pruyn, A., & van der Molen, M. (2010). Horizontal and vertical communication as determinants of professional and organisational identification. *Personnel Review, 39*(2), 210–226.

- Bhatnagar, J. (2012). Management of innovation: role of psychological empowerment, work engagement and turnover intention in the Indian context. *The International Journal of Human Resource Management*, 23(5), 928–951.
- Birkinshaw, J., Hamel, G., & Mol, M. (2008). Management innovation. *Academy of Management Review*, 33(4), 825–845.
- Birkinshaw, J., & Mol, M. (2006). How management innovation happens. *MIT Sloan Management Review*, 47(4), 81–88.
- Bowen, D., & Lawler III, E. (2006). The empowerment of service workers: What, why, how, and when. *Managing Innovation and Change*, 33, 155–169.
- Bowonder, B., Dambal, A., Kumar, S., & Shirodkar, A. (2010). Innovation Strategies for Creating Competitive Advantage. *Research-Technology Management*, 53(3), 19–32.
- Cadwallader, S., Jarvis, C. B., Bitner, M. J., & Ostrom, A. (2010). Frontline employee motivation to participate in service innovation implementation. *Journal of the Academy of Marketing Science*, 38(2), 219–239.
- Callan, V. (1993). Individual and organizational strategies for coping with organizational change. *Work & Stress*, 7(1), 63–75.
- Chong, V., & Eggleton, I. (2007). The impact of reliance on incentive-based compensation schemes, information asymmetry and organisational commitment on managerial performance. *Management Accounting Research*, 18(3), 312–342.
- Coelho, F., & Augusto, M. (2010). Job Characteristics and the Creativity of Frontline Service Employees. *Journal of Service Research*, 13(4), 426–438.
- Conger, J., & Kanungo, R. (1988). The empowerment process: Integrating theory and practice. *Academy of Management Review*, 13(3), 471–482.
- Cook, J., & Wall, T. (1980). New work attitude measures of trust, organizational commitment and personal need non-fulfilment. *Journal of Occupational Psychology*, 53(1), 39–52.
- Crossan, M., & Apaydin, M. (2010). A Multi-Dimensional Framework of Organizational Innovation: A Systematic Review of the Literature. *Journal of Management Studies*, 47(6), 1154–1191.

- Damanpour, F. (1991). Organizational innovation: A meta-analysis of effects of determinants and moderators. *Academy of Management Journal*, 34(3), 555–590.
- Damanpour, F. (1996). Organizational complexity and innovation: developing and testing multiple contingency models. *Management Science*, 42(5), 693–716.
- Damanpour, F. (2010). An integration of research findings of effects of firm size and market competition on product and process innovations. *British Journal of Management*, 21(4), 996–1010.
- Damanpour, F., & Aravind, D. (2012). Managerial innovation: Conceptions, processes, and antecedents. *Management and Organization Review*, 8(2), 423–454.
- Damanpour, F., Sanchez-Henriquez, F., & Chiu, H. (2018). Internal and external sources and the adoption of innovations in organizations. *British Journal of Management*, 29(4), 712–730.
- Damanpour, F., Walker, R., & Avellaneda, C. (2009). Combinative effects of innovation types and organizational performance: A longitudinal study of service organizations. *Journal of Management Studies*, 46(4), 650–675.
- Darnall, N., Henriques, I., & Sadorsky, P. (2008). Do environmental management systems improve business performance in an international setting? *Journal of International Management*, 14(4), 364–376.
- de Jong, J., & Den Hartog, D. (2007). How leaders influence employees' innovative behaviour. *European Journal of Innovation Management*, 10(1), 41–64.
- Dewettinck, K., & van Ameijde, M. (2011). Linking leadership empowerment behaviour to employee attitudes and behavioural intentions: Testing the mediating role of psychological empowerment. *Personnel Review*, 40(3), 284–305.
- Dillman, D. (2007). *Mail and internet surveys: The tailored design method* (2nd ed.). John Wiley & Sons Inc.
- Donaldson, L. (2001). *The contingency theory of organizations*. Sage.
- Dutton, J., Dukerich, J., & Harquail, C. (1994). Organizational images and member identification. *Administrative Science Quarterly*, 39(2), 239–263.

- Dyer, J., & Singh, H. (1998). The relational view: Cooperative strategy and sources of interorganizational competitive advantage. *Academy of Management Review*, 23(4), 660–679.
- Eisenberger, R., Cummings, J., Armeli, S., & Lynch, P. (1997). Perceived organizational support, discretionary treatment, and job satisfaction. *Journal of Applied Psychology*, 82(5), 812–820.
- Fane, G., Vaghefi, M., Deusen, C., & Woods, L. (2003). Competitive advantage the Toyota way. *Business Strategy Review*, 14(4), 51–60.
- Fernandez, S., & Moldogaziev, T. (2013). Employee empowerment, employee attitudes, and performance: Testing a causal model. *Public Administration Review*, 73(3), 490–506.
- Fernandez, S., & Pitts, D. (2011). Understanding Employee Motivation to Innovate: Evidence from Front Line Employees in United States Federal Agencies. *Australian Journal of Public Administration*, 70(2), 202–222.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50.
- Gallego, J., Rubalcaba, L., & Hipp, C. (2012). Organizational innovation in small European firms: A multidimensional approach. *International Small Business Journal: Researching Entrepreneurship*, 31(5), 563–579.
- Gautam, T., Van Dick, R., & Wagner, U. (2004). Organizational identification and organizational commitment: Distinct aspects of two related concepts. *Asian Journal of Social Psychology*, 7(3), 301–315.
- Gebauer, H. (2011). Exploring the contribution of management innovation to the evolution of dynamic capabilities. *Industrial Marketing Management*, 40(8), 1238–1250.
- Gosselin, M. (1997). The effect of strategy and organizational structure on the adoption and implementation of activity-based costing. *Accounting, Organizations and Society*, 22(2), 105–122.
- Greasley, K., Bryman, A., Dainty, A., Price, A., Soetanto, R., & King, N. (2005). Employee perceptions of empowerment. *Employee Relations*, 27(4), 354–368.
- Hamel, G. (2006). The why, what, and how of management innovation. *Harvard Business Review*, 84(2), 72–84.

- Harman, H. H. (1967). *Modern factor analysis*. University of Chicago
- Hartmann, A. (2006). The role of organizational culture in motivating innovative behaviour in construction firms. *Construction Innovation*, 6(3), 159–172.
- Heyden, M., Sidhu, J., & Volberda, H. (2018). The Conjoint Influence of Top and Middle Management Characteristics on Management Innovation. *Journal of Management*, 44(4), 1505–1529.
- Hooper, D., Coughlan, J., & Mullen, M. R. (2008). Structural equation modelling: Guidelines for determining model fit. *Electronic Journal of Business Research Methods*, 6(1), 53–60.
- Hu, L., & Bentler, P. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1–55.
- Iverson, R. (1996). Employee acceptance of organizational change: the role of organizational commitment. *International Journal of Human Resource Management*, 7(1), 122–149.
- Jafri, M. (2010). Organizational commitment and employee's innovative behavior: A study in retail sector. *Journal of Management Research*, 10(1), 62–68.
- Jansen, J., Van Den Bosch, F., & Volberda, H. (2006). Exploratory innovation, exploitative innovation, and performance: Effects of organizational antecedents and environmental moderators. *Management Science*, 52(11), 1661–1674.
- Janssen, O. (2003). Innovative behaviour and job involvement at the price of conflict and less satisfactory relations with co-workers. *Journal of Occupational and Organizational Psychology*, 76(3), 347–364.
- Janssen, O. (2004). The barrier effect of conflict with superiors in the relationship between employee empowerment and organizational commitment. *Work & Stress*, 18(1), 56–65.
- Jiang, J., & Liu, C.-W. (2015). High performance work systems and organizational effectiveness: The mediating role of social capital. *Human Resource Management Review*, 25(1), 126–137.
- Joo, B.-K., & Shim, J. H. (2010). Psychological empowerment and organizational commitment: the moderating effect of organizational learning culture. *Human Resource Development International*, 13(4), 425–441.

- Khosravi, P., Newton, C., & Rezvani, A. (2019). Management innovation: A systematic review and meta-analysis of past decades of research. *European Management Journal*, 37(6), 694–707.
- Kim, T., Chang, K., & Jae Ko, Y. (2010). Determinants of organisational identification and supportive intentions. *Journal of Marketing Management*, 26(5–6), 413–427.
- Kimberly, J., & Evanisko, M. (1981). Organizational innovation: The influence of individual, organizational, and contextual factors on hospital adoption of technological and administrative innovations. *Academy of Management Journal*, 24(4), 689–713.
- Kirkman, B., & Rosen, B. (1999). Beyond self-management: Antecedents and consequences of team empowerment. *Academy of Management Journal*, 42(1), 58–74.
- Knol, J., & Van Linge, R. (2009). Innovative behaviour: The effect of structural and psychological empowerment on nurses. *Journal of Advanced Nursing*, 65(2), 359–370.
- Kraimer, M., Seibert, S., & Liden, R. (1999). Psychological empowerment as a multidimensional construct: A test of construct validity. *Educational and Psychological Measurement*, 59(1), 127–142.
- Kruja, D., Ha, H., Drishti, E., & Oelfke, T. (2016). Empowerment in the hospitality industry in the United States. *Journal of Hospitality Marketing & Management*, 25(1), 25–48.
- Kwak, Y. H., & Anbari, F. (2006). Benefits, obstacles, and future of six sigma approach. *Technovation*, 26(5–6), 708–715.
- Lamm, E., & Gordon, J. (2010). Empowerment, Predisposition to Resist Change, and Support for Organizational Change. *Journal of Leadership & Organizational Studies*, 17(4), 426–437.
- Lee, E.-S., Park, T.-Y., & Koo, B. (2015). Identifying organizational identification as a basis for attitudes and behaviors: A meta-analytic review. *Psychological Bulletin*, 141(5), 1049–1080.
- Lee, H.-J. (2004). The role of competence-based trust and organizational identification in continuous improvement. *Journal of Managerial Psychology*, 19(6), 623–639.
- Lengnick-Hall, C. A. (1992). Innovation and Competitive Advantage: What We Know and What We Need to Learn. *Journal of Management*, 18(2), 399–429.

- Liang, H., Saraf, N., Hu, Q., & Xue, Y. (2007). Assimilation of enterprise systems: The effect of institutional pressures and the mediating role of top management. *MIS Quarterly*, 31(1), 59–87.
- Lin, H.-F., Su, J.-Q., & Higgins, A. (2016). How dynamic capabilities affect adoption of management innovations. *Journal of Business Research*, 69(2), 862–876.
- Lin, H., & Su, J. (2014). A case study on adoptive management innovation in China. *Journal of Organizational Change Management*, 27(1), 83–114.
- Liu, A., Chiu, W., & Fellows, R. (2007). Enhancing commitment through work empowerment. *Engineering, Construction and Architectural Management*, 14(6), 568–580.
- Liu, W., Zhang, P., Liao, J., Hao, P., & Mao, J. (2016). Abusive supervision and employee creativity: The mediating role of psychological safety and organizational identification. *Management Decision*, 54(1), 130–147.
- MacKinnon, D., Lockwood, C., Hoffman, J., West, S., & Sheets, V. (2002). A comparison of methods to test mediation and other intervening variable effects. *Psychological Methods*, 7(1), 83–104.
- Mael, F., & Ashforth, B. (1992). Alumni and their alma mater: A partial test of the reformulated model of organizational identification. *Journal of Organizational Behavior*, 13(2), 103–123.
- Mathieu, J., & Zajac, D. (1990). A review and meta-analysis of the antecedents, correlates, and consequences of organizational commitment. *Psychological Bulletin*, 108(2), 171–194.
- Maynard, M. T., Gilson, L., & Mathieu, J. (2012). Empowerment—fad or fab? A multilevel review of the past two decades of research. *Journal of Management*, 38(4), 1231–1281.
- Men, L. (2011). Exploring the impact of employee empowerment on organization-employee relationship. *Public Relations Review*, 37(4), 435–437.
- Menon, S. (2001). Employee empowerment: An integrative psychological approach. *Applied Psychology*, 50(1), 153–180.
- Meyer, J., & Allen, N. (1991). A three-component conceptualization of organizational commitment. *Human Resource Management Review*, 1(1), 61–89.

- Michaelis, B., Stegmaier, R., & Sonntag, K. (2009). Affective commitment to change and innovation implementation behavior: The role of charismatic leadership and employees' trust in top management. *Journal of Change Management*, 9(4), 399–417.
- Mishra, A., & Spreitzer, G. (1998). Explaining How Survivors Respond to Downsizing: The Roles of Trust, Empowerment, Justice, and Work Redesign. *Academy of Management Review*, 23(3), 567–588.
- Mol, M., & Birkinshaw, J. (2006). Against the flow: Reaping the rewards of management innovation. *European Business Forum*, 27, 24–29.
- Mol, M., & Birkinshaw, J. (2008). Giant steps in management: Creating innovations that change the way we work. Harlow: Financial Times Prentice Hall.
- Mol, M., & Birkinshaw, J. (2009). The sources of management innovation: When firms introduce new management practices. *Journal of Business Research*, 62(12), 1269–1280.
- Mol, M., & Birkinshaw, J. (2014). The role of external involvement in the creation of management innovations. *Organization Studies*, 35(9), 1287–1312.
- Nieves, J., & Segarra-Ciprés, M. (2015). Management innovation in the hotel industry. *Tourism Management*, 46, 51–58.
- Nunnally, J. (1978). Psychometric Theory. In *McGraw-Hill*.
- Paik, Y., Parboteeah, K. P., & Shim, W. (2007). The relationship between perceived compensation, organizational commitment and job satisfaction: the case of Mexican workers in the Korean Maquiladoras. *The International Journal of Human Resource Management*, 18(10), 1768–1781.
- Pardo del Val, M., & Lloyd, B. (2003). Measuring empowerment. *Leadership & Organization Development Journal*, 24(2), 102–108.
- Pelit, E., Öztürk, Y., & Arslantürk, Y. (2011). The effects of employee empowerment on employee job satisfaction: A study on hotels in Turkey. *International Journal of Contemporary Hospitality Management*, 23(6), 784–802.
- Perry, J. L., & Wise, L. R. (1990). The motivational bases of public service. *Public Administration Review*, 50(3), 367–373.



- Pierce, J., & Delbecq, A. (1977). Organization structure, individual attitudes and innovation. *Academy of Management Review*, 2(1), 27–37.
- Pool, S., & Pool, B. (2007). A management development model: Measuring organizational commitment and its impact on job satisfaction among executives in a learning organization. *Journal of Management Development*, 26(4), 353–369.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879–903.
- Porter, L., Steers, R., Mowday, R., & Boulian, P. (1974). Organizational commitment, job satisfaction, and turnover among psychiatric technicians. *Journal of Applied Psychology*, 59(5), 603–609.
- Rees, C. (1999). Teamworking and service quality: the limits of employee involvement. *Personnel Review*, 28(5/6), 455–473.
- Rhoades, L., Eisenberger, R., & Armeli, S. (2001). Affective commitment to the organization: The contribution of perceived organizational support. *Journal of Applied Psychology*, 86(5), 825–836.
- Riketta, M. (2002). Attitudinal organizational commitment and job performance: a meta-analysis. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, 23(3), 257–266.
- Roberts, E. (1999). In defence of the survey method: An illustration from a study of user information satisfaction. *Accounting and Finance*, 39(1), 53–77.
- Sanchez, R. (1995). Strategic flexibility in product competition. *Strategic Management Journal*, 16(S1), 135–159.
- Seibert, S., Silver, S., & Randolph, W. (2004). Taking empowerment to the next level: A multiple-level model of empowerment, performance, and satisfaction. *Academy of Management Journal*, 47(3), 332–349.
- Seibert, S., Wang, G., & Courtright, S. (2011). Antecedents and consequences of psychological and team empowerment in organizations: a meta-analytic review. *Journal of Applied Psychology*, 96(5), 981–1003.
- Shore, L. M., Barksdale, K., & Shore, T. H. (1995). Managerial perceptions of employee commitment to the organization. *Academy of Management Journal*, 38(6), 1593–1615.

- Singleton, R., & Straits, B. (2010). *Approaches to social research* (3rd ed.). Oxford University Press.
- Spreitzer, G. (1995). Psychological empowerment in the workplace: Dimensions, measurement, and validation. *Academy of Management Journal*, 38(5), 1442–1465.
- Sturdy, A. (2004). The adoption of management ideas and practices: Theoretical perspectives and possibilities. *Management Learning*, 35(2), 155–179.
- Su, S., & Baird, K. (2018). The role of leaders in generating management innovation. *The International Journal of Human Resource Management*, 29(19), 2758–2779.
- Su, S., Baird, K., & Blair, B. (2009). Employee organizational commitment: the influence of cultural and organizational factors in the Australian manufacturing industry. *The International Journal of Human Resource Management*, 20(12), 2494–2516.
- Tajfel, H. (1978). The achievement of group differentiation. In H. Tajfel (Ed.), *Differentiation between social groups: Studies in the social psychology of intergroup relations* (pp. 61–76). Academic Press.
- Tsai, C.-F., & Yen, Y.-F. (2018). Moderating effect of employee perception of responsible downsizing on job satisfaction and innovation commitment. *The International Journal of Human Resource Management*, 31(15), 1–25.
- Vaccaro, I., Jansen, J., Van Den Bosch, F., & Volberda, H. (2012). Management innovation and leadership: The moderating role of organizational size. *Journal of Management Studies*, 49(1), 28–51.
- Vakola, M., & Nikolaou, I. (2005). Attitudes towards organizational change: what is the role of employees' stress and commitment? *Employee Relations*, 27(2), 160–174.
- Van der Stede, W., Young, S. M., & Chen, C. X. (2005). Assessing the quality of evidence in empirical management accounting research: The case of survey studies. *Accounting, Organizations and Society*, 30(7–8), 655–684.
- van Knippenberg, D. (2000). Work Motivation and Performance: A Social Identity Perspective. *Applied Psychology*, 49(3), 357–371.
- van Knippenberg, D., & Sleebos, E. (2006). Organizational identification versus organizational commitment: self-definition, social exchange, and job attitudes. *Journal of Organizational Behavior*, 27(5), 571–584.

- Vancouver, J., & Schmitt, N. (1991). An exploratory examination of person-organization fit: Organizational goal congruence. *Personnel Psychology*, 44(2), 333–352.
- Volberda, H., Van Den Bosch, F., & Heij, C. (2013). Management innovation: Management as fertile ground for innovation. *European Management Review*, 10(1), 1–15.
- Volberda, H., Van Den Bosch, F., & Mihalache, O. (2014). Advancing management innovation: Synthesizing processes, levels of analysis, and change agents. *Organization Studies*, 35(9), 1245–1264.
- Walker, R., Chen, J., & Aravind, D. (2015). Management innovation and firm performance: An integration of research findings. *European Management Journal*, 33(5), 407–422.
- Walker, R., Damanpour, F., & Devece, C. (2011). Management innovation and organizational performance: The mediating effect of performance management. *Journal of Public Administration Research and Theory*, 21(2), 367–386.
- Wan, D., Ong, C. H., & Lee, F. (2005). Determinants of firm innovation in Singapore. *Technovation*, 25(3), 261–268.
- Weerawardena, J., & Mavondo, F. (2011). Capabilities, innovation and competitive advantage. *Industrial Marketing Management*, 40(8), 1220–1223.
- Wolfe, R. (1994). Organizational innovation: Review, critique and suggested research directions. *Journal of Management Studies*, 31(3), 405–431.
- Wu, L.-Y. (2010). Which companies should implement management innovation? A commentary essay. *Journal of Business Research*, 63(3), 321–323.
- Xerri, M., & Brunetto, Y. (2013). Fostering innovative behaviour: The importance of employee commitment and organisational citizenship behaviour. *The International Journal of Human Resource Management*, 24(16), 3163–3177.
- Zhang, X., & Bartol, K. (2010). Linking empowering leadership and employee creativity: The influence of psychological empowerment, intrinsic motivation, and creative process engagement. *Academy of Management Journal*, 53(1), 107–128.
- Zhu, W., May, D., & Avolio, B. (2004). The impact of ethical leadership behavior on employee outcomes: The roles of psychological empowerment and authenticity. *Journal of Leadership & Organizational Studies*, 11(1), 16–26.

## **Appendix 2A: Measurement of variables**

### **Management innovation**

#### *Managerial innovation practices*

The six items of this scale were adapted from Vaccaro et al. (2012).

1. Rules and procedures within our organisation are regularly renewed.
2. We regularly make changes to our employees' tasks and functions.
3. Our organisation regularly implements new management systems.
4. The policy with regard to employee compensation has been changed in the last three years.
5. The intra- and inter-departmental communication structure within our organisation is regularly restructured.
6. We continuously alter certain elements of the organisational structure.

#### *Managerial innovation techniques*

The six items of this scale were adapted from Su and Baird (2018).

1. Total Quality Management
2. Balanced Scorecard
3. Activity-Based Management
4. Benchmarking
5. Environmental Management Accounting
6. Value Chain Analysis

### **Employee empowerment**

This scale was adapted from Pardo del Val and Lloyd (2003).

1. They have a high level of collaboration/involvement in decision making.
2. There are official channels or certain norms or rules to guarantee their participation in the decision-making process.
3. They contribute directly to the decision-making process, rather than through intermediaries (e.g., superiors).
4. They have authority/power to make and implement decisions about tasks.

### **Organisational identification**

All the items of this scale were adapted from Mael and Ashforth (1992).

1. When someone criticises organisation, it feels like a personal insult.
2. I am very interested in what others think about organisation.
3. When I talk about my organisation, I usually say 'we' rather than 'they'.
4. This organisation's successes are my successes.
5. When someone praises my organisation, it feels like a personal compliment.
6. If a story in the media criticised my organisation, I would feel embarrassed.

### **Employee organisational commitment**

All the items of this scale were adapted from Cook and Wall (1980).

1. I am quite proud to be able to tell people who it is I work for.
2. I sometimes feel like leaving this organisation for good.
3. I am not willing to put myself out just to help the organisation.
4. Even if my organisation was not doing well financially, I would be reluctant to change to another organisation.
5. I feel that I am a part of the organisation.
6. In my work I like to feel I am applying some effort not just for myself but for the organisation as well.
7. The offer of a small increase in remuneration by another organisation would not seriously make me think of changing my job.
8. I would not advise a close friend to join my organisation.
9. I am determined to make a contribution for the good of my organisation.

## Appendix 2B: Questionnaire items and CFA statistics

### Management innovation

Constructs and items	Factor loading	t-value	SE	Cronbach alpha
<i>Management innovation practices</i>				0.869
1. Rules and procedures within our organisation are regularly renewed.	0.627	NA	NA	
2. We regularly make changes to our employees' tasks and functions.	0.792	7.661	0.167	
3. Our organisation regularly implements new management systems.	0.825	7.836	0.180	
4. The policy with regard to employee compensation has been changed in the last three years.	0.597	6.203	0.173	
5. The intra- and inter-departmental communication structure within our organisation is regularly restructured.	0.716	7.114	0.170	
6. We continuously alter certain elements of the business unit's structure.	0.710	7.083	0.167	
<b>Goodness-of-fit:</b> CMIN/DF = 2.109; GFI = 0.968; AGFI = 0.903; CFI = 0.981; RMSEA = 0.085				
<i>Management innovation techniques</i>				0.890
1. Total Quality Management	0.695	NA	NA	
2. Balanced Scorecard	0.789	8.727	0.131	
3. Activity Based Management	0.769	8.532	0.126	
4. Benchmarking	0.739	8.243	0.122	
5. Environmental Management Accounting	0.755	8.348	0.139	
6. Value Chain Analysis	0.754	8.341	0.136	
<b>Goodness-of-fit:</b> CMIN/DF = 1.614; GFI = 0.973; AGFI = 0.929; CFI = 0.990 RMSEA = 0.063				

## Employee empowerment

Construct and items	Factor loading	t-value	SE	Cronbach alpha
				0.898
1. They have a high level of collaboration/involvement in decision making.	0.860	NA	NA	
2. There are official channels or certain norms or rules to guarantee their participation in the decision-making process.	0.829	12.397	0.078	
3. They contribute directly to the decision-making process, rather than through intermediaries (e.g., supervisors).	0.815	12.104	0.085	
4. They have authority/power to make and implement decisions about tasks.	0.819	12.189	0.080	

**Goodness-of-fit:** CMIN/DF = 1.592; GFI = 0.990; AGFI = 0.951; CFI = 0.997; RMSEA = 0.062

## Employee organisational commitment

Construct and items	Factor loading	t-value	SE	Cronbach alpha
<i>Employee organisational involvement</i>				0.872
1. I am quite proud to be able to tell people who it is I work for	0.663	NA	NA	
2. I feel that I am a part of the organisation	0.846	8.469	0.144	
3. In my work I like to feel I am applying some effort not just for myself but for the organisation as well.	0.861	8.496	0.139	
4. In my work I like to feel I am applying some effort not just for myself but for the organisation as well.	0.731	9.950	0.106	

**Goodness-of-fit:** CMIN/DF = 2.709; GFI = 0.991; AGFI = 0.914; CFI = 0.995; RMSEA = 0.105

## **CHAPTER 3**

### **PAPER TWO**

**Title: Management innovation: The influence of institutional pressures and the impact on competitive advantage**

(A journal article based on this paper has been accepted for publication in the International Journal of Manpower)

Alshumrani, S. M., Baird, K. and Munir, R. (forthcoming). 'Management innovation: The influence of institutional pressures and the impact on competitive advantage'. *International Journal of Manpower*.



## **Abstract**

Innovation has become increasingly important for organisations as they seek success and competitive advantage in today's global market. Organisations are constantly competing to develop new technological innovations, including process and product innovations. However, evidence shows that long-term organisational success is more dependent on innovations in administrative practices, processes and structures, which is referred to as management innovation. Drawing on DiMaggio and Powell's (1983) perspective of institutional theory, this study examines the influence of institutional pressures on the extent of use of management innovation and the subsequent impact of the extent of use of management innovation on competitive advantage. Data were obtained from 156 middle-level managers in Australia using a survey questionnaire, with data analysed using structural equation modelling. The results show that internal coercive pressures and normative pressures are positively associated with both dimensions of management innovation (i.e., practices and techniques). However, external coercive pressures were found to negatively influence management innovation techniques, and no association was found between mimetic pressures with either dimension of management innovation. Finally, both dimensions of management innovation were found to exhibit a positive influence on competitive advantage. The findings provide organisations with an insight into the institutional factors that affect their extent of use of new management innovation (practices and techniques), and the role of management innovation in enhancing competitive advantage.

**Keywords:** management innovation, institutional theory, institutional pressures, competitive advantage

### **3.1 Introduction**

The ability to innovate facilitates adaptation to environmental changes (Damanpour & Schneider, 2009; Jansen et al., 2006), improves organisational performance (Rhodes et al., 2008), and enhances the market value of organisations (Cho & Pucik, 2005). In addition to offering new technological advancements, products, or services, innovative capability also encompasses the evolving nature of management styles. This is referred to as management innovation (Volberda et al., 2013; Vaccaro et al., 2012; Birkinshaw et al., 2008; Hamel, 2006), and defined as “the invention and implementation of a management practice, process, structure, or technique that is new to the state of the art and is intended to further organisational goals” (Birkinshaw et al., 2008, p. 825). It entails “changing a firm’s organisational form, practices and processes in a way that is new to the firm and/or industry” (Volberda et al., 2013, p. 1), so as to achieve organisational goals. Management innovation is aimed at improving productivity and achieving performance objectives (Lucianetti et al., 2018; Walker et al., 2015; Damanpour & Aravind, 2012). It can be interpreted as involving new changes considered to be ‘state of the art’, that is innovations that are new and without known precedents, or it can involve novel changes that are new to the adopting organisation, regardless of whether such changes have been adopted by other organisations. This study focuses on management innovation that is new to adopting organisations rather than ‘state of the art’ (Roehrich et al., 2019; Vaccaro et al., 2012; Walker et al., 2011; Mol & Birkinshaw, 2009).

The recent focus on management innovation is due, in part, to the growing realization of the importance of innovative management practices and approaches for organisational performance (Walker et al., 2015; Camisón & Villar-López, 2014; Evangelista & Vezzani, 2010). For instance, it has been proven in the literature that management innovations such as the Lean Production System and Total Quality Management (TQM) at Toyota, the Six Sigma

process at General Electric (GE), and the virtual organisational structure at Visa have led those companies to improve their performance (Hamel, 2006). Further, management innovation is a firm-specific resource that is intangible and difficult to replicate, imitate, or transfer from one organisation to another, which makes it an important source of competitive advantage (Volberda et al., 2013; Mol & Birkinshaw, 2006, 2009; Teece, 2007; Hamel, 2006).

Despite the recent increase in research on management innovation and its importance in improving organisational performance (Camisón & Villar-López, 2014; Evangelista & Vezzani, 2010; Walker et al., 2015), management innovation remains an under-researched topic (Khosravi et al., 2019; Damanpour et al., 2018). In particular, there are few empirical studies examining factors influencing management innovation and its effectiveness (Khosravi et al., 2019; Walker et al., 2015; Damanpour, 2014; Volberda et al., 2013). Therefore, there is a need to develop a better understanding of the phenomenon of management innovation, including the factors that encourage organisations to use management innovation and the effectiveness of management innovation in respect to its impact on organisational outcomes (Khosravi et al., 2019; Walker et al., 2015).

Previous studies on management innovation have adopted various research approaches, including institutional, rational, fashion-based, and cultural approaches, to explain the motivations for using management innovation (Walker et al., 2015; Volberda et al., 2014; Birkinshaw et al., 2008). Institutional and rational approaches are the most widely used in management innovation research, as they are associated with organisational performance (Birkinshaw et al., 2008; Walker et al., 2015). Therefore, this study will focus on the institutional approach to investigate how institutional pressures influence organisations to use management innovation to a greater extent, and whether such use creates a competitive advantage for organisations. The focus on institutional pressures is relevant given recent

significant changes in the business environment including increased competition and the change in market conditions and customer demands. The institutional approach to management innovation is rooted in neo-institutional theory, which argues that at the time of using management innovations, organisations are uncertain about the outcomes of the use in terms of its impact on organisational outcomes. Hence, according to the institutional approach, the decision to use management innovations is based on social and institutional factors.

This study contributes to the literature on management innovation in several ways. First, in contributing to the contingency-based literature, this study examines the antecedents of management innovation. Specifically, while previous research has examined the various internal and external antecedents of management innovation, such as organisational size (Ganter & Hecker, 2013), strategy (Naranjo-Gil, 2009), internal knowledge exchange (Černe et al., 2013), external involvement (Mol & Birkinshaw, 2014), leadership (Su & Baird, 2018; Vaccaro et al., 2012), and competitive pressures (Hecker & Ganter, 2013), this study empirically examines the influence of institutional pressures (coercive, mimetic, and normative) on the extent of use of management innovation.

Second, the study contributes to the strategic management literature and the literature focusing on the effectiveness of management innovation. Previous studies have examined the positive influence of management innovation on organisational outcomes, including organisational performance, organisational survival, and the quality of work (Damanpour, 2014; Damanpour et al., 2009; Mol & Birkinshaw, 2009; Volberda et al., 2013). However, from an institutional perspective, the use of management innovation is associated with social and legitimization benefits, with economic benefits, in terms of performance and competitiveness, arising later (Walker et al., 2015). Therefore, this study argues that the use of management innovation, which is motivated by the need to conform to institutional pressures, has the potential to

produce economic benefits. Further, given the extant literature argues that management innovation is an important source of competitive advantage (Damanpour & Aravind, 2012; Ganter & Hecker, 2013; Hamel, 2006; Mol & Birkinshaw, 2006, 2009), this study aims to contribute to the existing literature by empirically examining the impact of management innovation on competitive advantage.

The study addresses the following research questions:

- What is the influence of institutional pressures on the extent of use of management innovation?
- What is the impact of management innovation on competitive advantage?

## **3.2 Literature review and hypotheses development**

### **3.2.1 Management innovation**

Changes in the business environment have encouraged organisations to emphasise the development of management practices and activities designed to accommodate such changes and facilitate the pursuit of organisational goals (Hollen et al., 2014). The changes that confront organisations include increased technological advancements and market competition, with the latter highlighting the need to consider non-technological innovations, such as management innovation, which is more difficult to imitate than technological innovations (Birkinshaw et al., 2008; Hamel, 2006; Teece, 2007; Volberda et al., 2013). Management innovation encompasses the use of new management practices, structures, processes, systems, and programs in an organisation, and aims to enhance organisational performance. According to Hamel (2006), management innovation reflects a “marked departure from traditional

management principles, processes, and practices or a departure from customary organisational forms that significantly alters the way the work of management is performed” (p. 75). Introducing new ways of implementing management is essential to the efforts of organisations to enhance their productivity, improve products and services quality, reinforce the efficiency and effectiveness of internal organisational processes, and maintain competitiveness (Volberda et al., 2013; Walker et al., 2011; Mol & Birkinshaw, 2009; Pil & MacDuffie, 1996).

Mol and Birkinshaw (2008) identify four main characteristics of management innovation. First, management innovation involves *implementation*, which entails the execution of new ideas that add value to the business field. Second, management innovation focuses on introducing novel management *practices* (e.g., brand management), *processes* (e.g., business process reengineering), or *structures* (e.g., divisional form, M-form). Third, management innovation should be *new* to an adopting organisation. Finally, management innovation is undertaken to *advance and enhance organisational goals*, including both financial and non-financial ones (e.g., efficiency, quality, effectiveness, and work quality). These four characteristics must be present if an innovation is to be considered a management innovation. In particular, the use of a management innovation must be driven by substantial change in how organisations are managed if it is to be considered a management innovation (Birkinshaw et al., 2008; Volberda et al., 2013).

Following the definition of management innovation by Birkinshaw et al. (2008), management innovation encompasses four dimensions: *practices*, *processes*, *structures*, and *techniques* (Volberda et al., 2013; Vaccaro et al., 2012; Mol & Birkinshaw, 2009; Birkinshaw et al., 2008). Management practices involve changes to the daily work practices of managers, such as setting objectives and plans and arranging tasks and functions (Mol & Birkinshaw, 2009; Birkinshaw et al., 2008; Hamel, 2006). With respect to processes, changes are implemented in the routines

that underlie management work to convert these into actionable objectives. Examples of such routines include the process of performance assessment and lean manufacturing (Birkinshaw et al., 2008; Hamel, 2006). Management innovation in structures entails reorganizing communication systems to assign responsibilities and align efforts, as is the case with divisional structures (Volberda et al., 2013; Hamel, 2006). Finally, management techniques include the management accounting tools and approaches used to accomplish specific tasks or targets; for example, activity-based costing (ABC), the balanced scorecard (BSC), benchmarking, and capital budgeting (Birkinshaw et al., 2008; Mol & Birkinshaw, 2008; Hamel, 2006).

### **3.2.2 The association between institutional pressures and management innovation**

Institutional theory suggests that institutional contexts are characterized by the rule-like social expectations and shared norms that organisations should comply with to protect their legitimacy and ensure access to scarce resources (DiMaggio & Powell, 1983; Tolbert & Zucker, 1983; Meyer & Rowan, 1977). In particular, organisations that share similar environments use similar practices and therefore become "isomorphic" in order to maintain legitimacy and survive (Kostova & Roth, 2002; Scott, 1992; DiMaggio & Powell, 1983). Institutional theory also proposes that changes in organisational structures and behaviour are more strongly driven by the need for institutional legitimacy than by the desire to improve performance and organisational efficiency (Liu et al., 2010; Liang et al., 2007; DiMaggio & Powell, 1983). In particular, the theory proposes that at the time of early use, organisations select among alternative management practices and structures for the purpose of achieving efficiency (Palmer et al., 1993; DiMaggio & Powell, 1983). However, as management innovation spreads, later users employ specific practices "that are considered legitimate by other organisations in their field, regardless of these structures' actual efficiency" (Palmer et

al., 1993, p. 104). Hence, an organisation's decision to use a given type of practice is a response to institutional drivers from the business environment and the need to sustain legitimacy in society, with such an act not necessarily introduced solely to seek economic benefits (Huo et al., 2013; DiMaggio & Powell, 1983; Meyer & Rowan, 1977).

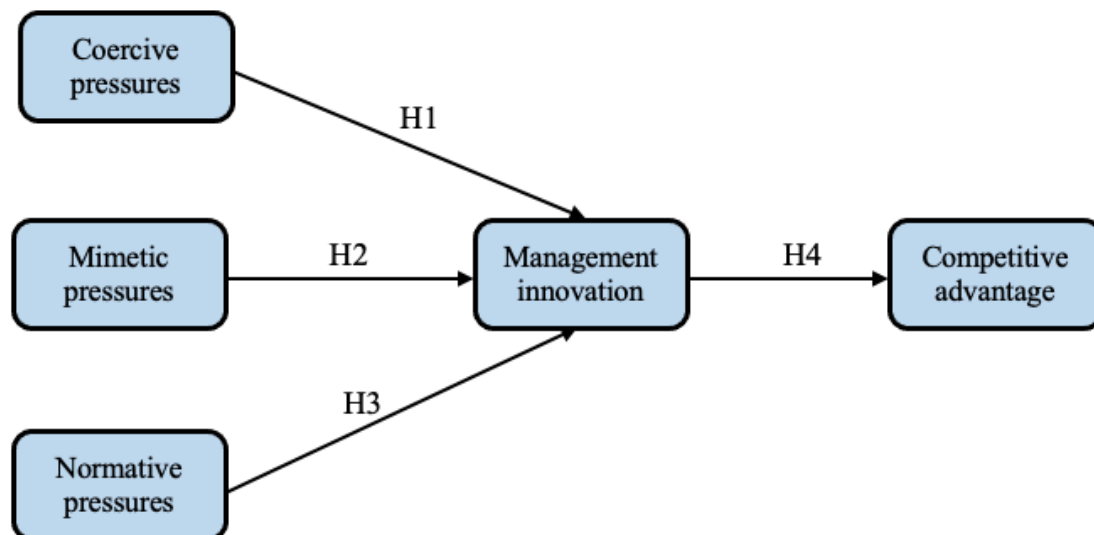
Institutional theory provides significant insights into the importance of institutional environments in shaping organisational structures, practices, and actions (Teo et al., 2003; Goodstein, 1994; DiMaggio & Powell, 1983; Tolbert & Zucker, 1983). Institutional theory focuses on the role of social factors and various external pressures from governmental bodies, regulators, shareholders, competitors, customers, parent companies, and professional associations, on organisational decisions and actions. In particular, institutional theory argues that these pressures influence the way in which organisations interpret the institutional environment, and therefore how they decide to use management innovations (Ketokivi & Schroeder, 2004; John et al., 2001; DiMaggio & Powell, 1983).

DiMaggio and Powell (1983) identify three types of institutional pressures underlying managerial decisions: coercive, mimetic, and normative pressures. Coercive pressures are described as the influence placed upon organisations by other institutions and by the cultural expectations of society (DiMaggio & Powell, 1983; Teo et al., 2003). Mimetic pressures encourage organisations to imitate the success of other organisations in response to uncertainty (Abrahamson, 1991; DiMaggio & Powell, 1983). Normative pressures are connected with the professionalism within the organisational context and the pressure to conform to professional standards (DiMaggio & Powell, 1983). These three types of pressures are addressed by organisations through the use of specific structures, practices, systems, programs, policies and procedures, i.e., the use of management innovation.



Some management innovation researchers, such as Birkinshaw et al. (2008), Walker et al. (2011), and Volberda et al. (2014) refer to the importance of the institutional perspective in explaining the motivation for organisations to engage in management innovation. Accordingly, this study focuses on the influence of institutional pressures on the extent of use of management innovation. Specifically, the first objective of this study is to examine the effects of coercive, mimetic, and normative pressures on the decision of organisations to use management innovation. The nature of the association between each of these three institutional pressures and management innovation is examined more comprehensively in the subsequent sub-sections (see Figure 3.1).

**Figure 3.1 The conceptual research model**



### **3.2.2.1 Coercive pressures**

Coercive pressures derive from the “formal and informal pressures exerted on organisations upon which they are dependent and by cultural expectations in the society within which organisations function” (DiMaggio & Powell, 1983, p. 150). This includes the political influence exerted by government regulations, industry policies, professional associations and networks, powerful organisations, and parent corporations (Fikru, 2014; Teo et al., 2003; DiMaggio & Powell, 1983; Tolbert & Zucker, 1983). Organisations may implement specific practices or systems in response to government mandates, such as tax and environmental requirements (DiMaggio & Powell, 1983). Further, powerful organisations may exert political pressures on other organisations, encouraging them to use or reject a management practice (Wang et al., 2018; Abrahamson, 1991). According to Teo et al. (2003), coercive pressures are built into exchange relationships, whereby organisations maintain these relationships and satisfy their need for legitimacy by responding to these forces (Frumkin & Galaskiewicz, 2004; DiMaggio & Powell, 1983). For example, resource-dominant organisations (e.g., customers or suppliers) possess and control scarce and vital assets (John et al., 2001; Teo et al., 2003). Hence, from a resource-dependence perspective, these organisations may coerce dependent organisations to use favourable management structures, practices, processes, or organisational models that best serve the powerful organisation’s interests (Liu et al., 2010; Teo et al., 2003; John et al., 2001; Ang & Cummings, 1997).

Parent corporations may also impose coercive pressure on their subsidiaries, by demanding conformity to practices and structures, such as using a specific hiring system or internal financial reporting structure, which is compatible with the policies and standards of the parent entity (Teo et al., 2003; DiMaggio & Powell, 1983). In this situation, dependent organisations (i.e., subsidiary organisations) have no choice but to comply with such demands in order to

obtain access to resources that are in short supply in order to maintain their market positions (Liu et al., 2010; Teo et al., 2003). Alternatively, organisations that fail to comply with the requirements of government and industry regulations, or the coercive pressures exerted by resource-dominate or parent organisations, may face fines and penalties, lose their access to resources, or damage their reputation.

In the case of management innovation, when a powerful organisation favours a specific management innovation, other organisations may be forced to use it. For example, Slack and Hinings (1994) point out that changes in government mandates impose political pressure on sporting organisations to use the structural design of the professional bureaucracy. Similarly, Munir and Baird (2016) find that the coercive pressures applied to banks resulted in them using multidimensional performance measures (i.e., BSC). Further, Benders et al. (2006) suggest that the clients and headquarters of subsidiaries may influence dependent organisations to take up enterprises resource planning (ERP) as a management innovation strategy,<sup>7</sup> while Hopper and Major (2007) found that the use of ABC is influenced by the coercive pressures imposed by a regulatory body, the capital market, and a parent company.

Hence, an organisation that is subjected to coercive pressure from its dominant organisation, regulatory body, or parent company is likely to use management innovation to a greater extent. Therefore, the following hypothesis is developed:

**Hypothesis 1:** The influence of coercive pressure will be positively significantly associated with management innovation.

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<sup>7</sup> Refer to Mol and Birkinshaw (2008) for more information on how ERP fits the definition of management innovation.

### **3.2.2.2 Mimetic pressures**

Organisations may face uncertainties due to a poor understanding of the issues associated with the introduction of new technology, or when they encounter ambiguous organisational goals (DiMaggio & Powell, 1983). Uncertainty in the institutional environment encourages imitation, which forces organisations to change over time and model their structures and strategies on other organisations perceived as successful (DiMaggio & Powell, 1983). For instance, research grounded in perspectives of fads and fashion maintains that organisations that are confronted with uncertainties in achieving goals or using specific management innovations tend to be influenced by other institutions (Abrahamson, 1991, 1996).

Mimetic practices may be diffused directly by consulting organisations, or unintentionally and indirectly through employee transfers and turnover (Abrahamson, 1991; DiMaggio & Powell, 1983). In particular, mimetic pressures manifest in two ways: the perceived success of organisations in the same industry that have used the practice, and the prevalence of a practice in the focal organisation's industry (Teo et al., 2003; Haveman, 1993). Consequently, organisations may imitate the strategic choices of more successful organisations, such as their partner/s or competitors, by using similar management practices or structures (Raffaelli & Glynn, 2014; Liu et al., 2010; John et al., 2001; DiMaggio & Powell, 1983). In this way, organisations minimize the costs of search and experimentation, and avoid the risk of being a first mover (Teo et al., 2003; Lieberman & Montgomery, 1988). Furthermore, if a practice is prevalent in the organisation's industry this may increase mimetic pressures. In this case, an organisation may copy the practice of another organisation to achieve legitimacy in wider social structures (Teo et al., 2003; Abrahamson, 1991; DiMaggio & Powell, 1983), to assure its survival and demonstrate that it is at least trying to improve its position in the market (DiMaggio & Powell, 1983). In this case, organisations may use the same specific management

practices as their competitors regardless of their economic efficiency. Such imitation of competitors' use of specific management innovations may also be undertaken to avoid risking their competitors achieving competitive advantage by using such innovations (Abrahamson & Bartner, 1990).

Hence, organisations might use specific management practices or techniques (i.e., management innovation) for legitimacy purposes or to enhance their organisational reputation (DiMaggio & Powell, 1983), with specific management practices or systems employed based on the success of other corporations (Zsidisin et al., 2005). Hence, the more successful competitors are in respect to the use of specific management innovations, the more organisations will follow them in using such management innovations (Liang et al., 2007).

A number of studies have examined the influence of imitation on the use of specific management innovations, such as multidivisional structures, M-Form (Kogut & Parkinson, 1998; Teece, 1980), Business Process Reengineering (O'Mahoney, 2007), and ABC systems (Malmi, 1999). For example, Westphal et al. (1997) examined the use of TQM as a management innovation and argued that mimetic isomorphism influenced organisations' decision to implement TQM. Similarly, Granlund and Lukka (1998) investigated the diffusion of ABC systems, concluding that the decision to use the ABC system was influenced by mimetic pressures, driven by advice from consulting organisations.<sup>8</sup> Further, Braunscheidel et al. (2011) find that the use of Six Sigma is influenced by mimetic pressures. In particular, they found that organisations used Six Sigma either because their manager attended a meeting discussing the success of Six Sigma or because it was used successfully by other companies. Similarly, Slack and Hinings (1994) found that networking through attending seminars,

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<sup>8</sup> See Abrahamson (1991, 1996) for more discussion on management fads and fashions.

workshops, and conferences, influenced the mimetic process of using optimal organisational structures. Hence, it is hypothesised that:

**Hypothesis 2:** The influence of mimetic pressure will be positively significantly associated with management innovation.

### **3.2.2.3 Normative pressures**

Normative pressures stem primarily from professionalization (DiMaggio & Powell, 1983), which refers to “relations between management policies and the background of employees in terms of educational level, job experience and networks of professional identification” (Paauwe & Boselie, 2005, p. 990). Normative pressures involve socializing an organisation within its institutional environment and concerns social obligations that define the appropriate and expected conduct of organisations (Colwell & Joshi, 2013; Greenwood et al., 2002; Granlund & Lukka, 1998). Two aspects of professionalization are considered to be the primary sources of normative values: (1) formal education and training by universities and professional institutions; and (2) industry, professional associations, networks, and affiliations (Paauwe & Boselie, 2005; Oliver, 1991; DiMaggio & Powell, 1983). In particular, organisations and individuals learn how they get things done appropriately and rationally through interacting with industry and professional associations (Oliver, 1997). This shapes the beliefs and behaviours of these organisations and individuals and creates shared norms and values (Liu et al., 2010; DiMaggio & Powell, 1983), which are shared among members of professional networks, and in turn influence organisational behaviour (Teo et al., 2003).

Normative pressures are considered to play an important role in enhancing the extent of use of management innovation. For instance, prevailing management innovations in the industry have been shown to place normative pressure on organisations and induce them to use that

innovation (Liu et al., 2010; John et al., 2001). In particular, organisations conform by using the prevailing management innovations (DiMaggio & Powell, 1983) as they are considered to be legitimate in the industry (Fikru, 2014). For example, dos Santos et al. (2020) found that consultancy companies exert normative pressures on organisations to implement new management techniques. Further, participation in professional networks may influence the organisation's decision to use management innovation (Damanpour & Aravind, 2012). Therefore, it is hypothesised that:

**Hypothesis 3:** The influence of normative pressure will be positively significantly associated with management innovation.

### **3.2.3 The association between management innovation and competitive advantage**

An organisation has competitive advantage “if it is able to create more economic value than the marginal (breakeven) competitor in its product market” (Peteraf & Barney, 2003, p. 314). This indicates that organisations that are more successful than their rivals or have superior performance over their competitors have competitive advantage (Schilke, 2014; Flynn et al., 1995). According to Barney (1991), competitive advantage is achieved when organisations are able to implement a strategy that is not “simultaneously being implemented by any current or potential competitors” (p. 102).

Generally, organisations use innovations to achieve and maintain a competitive position (Damanpour et al., 2018; Camisón & Villar-López, 2014; Volberda et al., 2013). In the extant literature, management innovation is argued to represent an important source of competitive advantage (Lin et al., 2016; Volberda et al., 2013; Mol & Birkinshaw, 2006, 2009; Hamel, 2006; Barney, 1991). In particular, given management innovation is inherently complex and

specific to each organisation's context, structure, and resources, it is more likely that it will create competitive advantage (Lin et al., 2016; Hamel, 2006). For example, well-known management innovations, such as Toyota's lean production system, have driven the company's long-term competitive advantage in the global marketplace (Hamel, 2006; Mol & Birkinshaw, 2006; Fane et al., 2003), with western automobile companies failing to duplicate such innovations. Similarly, brand management at Procter & Gamble and Six Sigma at General Electric have led those companies to attain a significant competitive position (Mol & Birkinshaw, 2008; Hamel, 2006).

Management innovation enhances the efficiency and effectiveness of internal organisational processes (Volberda et al., 2013), and improves productivity (Mol & Birkinshaw, 2009), thereby enhancing competitive advantage. Further, introducing new ways of organising management work influences organisational performance by reducing administrative or transactions costs (Nieves, 2016), thereby enabling organisations to enhance competitive advantage. Further, using new systems and methods to manage customer relationships, such as Customer Relationship Management (CRM), enhances customer loyalty and reduces the number of customer complaints (Ko et al., 2008; Mol & Birkinshaw, 2008), thereby assisting in enhancing competitive advantage. Finally, implementing new structures to manage organisational activities and work responsibilities (e.g., work-out groups, decentralisation and teamwork) (Damanpour, 2014; Mol & Birkinshaw, 2008; OECD, 2005) ensures the effectiveness of work tasks and employees' performance (Armbruster et al., 2008; Jun et al., 2006), and improves the decision-making process, thereby enhancing competitive advantage. Based on this discussion, it is maintained that the extent of use of management innovation enhances competitive advantage and hence, the following hypothesis is developed:



**Hypothesis 4:** The extent of use of management innovation will be positively significantly associated with competitive advantage.

### **3.3 Method**

#### **3.3.1 Data collection**

The data were collected using the survey method. Initially, a sample of 840 participants were randomly chosen from the OneSource database (D&B Hoovers)<sup>9</sup>. After applying several checking procedures<sup>10</sup>, a total of 480 questionnaires were distributed by mail to middle-level managers in Australia (e.g., marketing, finance, business development, sales, operations, research and development, human resources, and production managers). These respondents were chosen on the basis of the expectation that they possessed the relevant knowledge regarding their organisation's operations that was necessary for them to complete the survey.

The mail questionnaire was developed using Dillman's (2007) Tailored Design Method (TDM) in an attempt to improve the response rate. This approach consists of guidelines in respect to the style and format of questions and distribution procedures. For example, the instrument was structured in a respondent-friendly style, while the questions were carefully phrased in a simple manner and presented in colour to enhance the attractiveness of the questionnaire.

Despite following the TDM approach carefully, only 46 completed questionnaires were returned following the initial and follow-up mail-outs (i.e., a response rate of 9.6%). This low response rate prompted the administration of an additional online survey using the Qualtrics

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<sup>9</sup> OneSource is a dataset that provides in-depth business information of private and public companies.

<sup>10</sup> The final selection was based on calls made to the selected organisation as well as checking both their website and managers' LinkedIn accounts. This was done to ensure that the organisation was still operating and to confirm the contacts details and position of the targeted manager.

platform, which resulted in the return of an additional 110 questionnaires. Therefore, a total of 156 questionnaires were completed.

### **3.3.2 Non-response bias and common method bias**

The data were tested for potential biases by testing for non-response bias and common method bias. Non-response bias was tested using a comparison of the mean independent and dependent variable scores of the early and late respondents for both the mail and online surveys (Roberts, 1999). No significant differences were found between the mean variable scores of the 19 respondents from the initial mail-out (i.e., early responders) and the 27 respondents from the follow-up mail-out (i.e., late responders), and therefore, non-response bias wasn't considered to be a problem for the mail survey. Regarding the online survey (i.e., Qualtrics), the mean variable scores of the first 55 responses was compared with the second 55 responses. With the exception of the mimetic pressure variable, this comparison also revealed no significant differences<sup>11</sup>.

In addition, given that both mail and online data were obtained from a single-respondent, common method bias was tested using Harman's (1967) single-factor test with the results revealing that the total variance explained by a single factor was 38.97%. This was below the 50% threshold recommended by Podsakoff et al. (2003) and indicates that common method bias was not a problem.

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<sup>11</sup> This is considered to be a random result given no such problems were found in respect to the other three institutional pressure measures.

### **3.3.3 Measurement of variables**

#### **3.3.3.1 Institutional pressures**

The influence of institutional pressures on the extent of use of management innovation was measured by asking the respondents to indicate the extent to which 20 different institutional pressures (see Appendix 3A) identified from the literature (Munir & Baird, 2016), influenced their organisations to use specific management innovations, using a five-point scale with anchors of “1= *Not at all*” to “5 = *To a great extent*”.

Exploratory factor analysis (EFA) was conducted, with principal component analysis (varimax rotation) used as the extraction method. The analysis uncovered four factorial groups that accounted for 66.2% of the total variance, with the results of the factor analysis presented in Table 3.1. The first factor encompassed six items and was labelled “normative pressures”, while the second factor comprised pressures exerted by the surrounding institutional environment (four items) including the pressure to comply with industry and government regulations, and therefore was labelled “external coercive pressures”. The third factor consisted of four items and was labelled “internal coercive pressures” as it included forces from within the organisation, such as pressure from senior management, directors, and head office. Finally, the fourth factor covered five items and was labelled “mimetic pressures”.

**Table 3.1 Factor analysis of the institutional pressure measure**

Item <sup>a</sup>	Factor			
	Normative pressures	External coercive pressures	Internal coercive pressures	Mimetic pressures
1	-0.043	0.037	0.186	<b>0.730</b>
2	0.351	0.038	0.110	<b>0.775</b>
3	0.023	0.168	0.122	<b>0.737</b>
4	0.157	0.509	-0.051	<b>0.521</b>
5	0.375	0.382	0.256	<b>0.403</b>
6	0.258	<b>0.800</b>	0.113	0.067
7	0.240	<b>0.794</b>	0.148	0.127
8	<b>0.738</b>	-0.023	0.304	0.107
9	<b>0.702</b>	0.236	0.293	0.085
10	<b>0.604</b>	0.344	0.220	0.225
11	<b>0.779</b>	0.225	0.129	0.211
12	<b>0.715</b>	0.334	0.031	0.141
13	<b>0.562</b>	0.559	0.160	-0.110
14	0.264	<b>0.529</b>	0.101	0.431
15	0.414	<b>0.490</b>	0.178	0.377
16	<b>0.735</b>	0.321	0.289	-0.034
17	0.258	0.158	<b>0.831</b>	0.181
18	0.210	0.151	<b>0.846</b>	0.074
19	0.383	-0.005	<b>0.798</b>	0.182
20	0.084	0.497	<b>0.561</b>	0.273

Extraction Method: principal component. Rotation Method: Varimax with Kaiser Normalisation. Rotation converged in 5 iterations. The bold items are loaded to each factor based on the cut-off point of 0.4.

<sup>a</sup> Item numbers as listed in the Appendix.

Confirmatory factor analysis (CFA) was subsequently performed to assess the validity of the measurement constructs (see Appendix 3B and Table 3.2), with the reliability of the measures tested by calculating the Cronbach's alpha scores. The measurement model for normative pressures exhibited a good fit (CMIN/DF = 1.343, GFI = 0.969, CFI = 0.992, RMSEA = 0.047) with a Cronbach's alpha score of 0.896, thereby exceeding the recommended score of 0.70 suggested by Nunnally (1978). The measurement model of internal coercive pressures also showed a good fit (CMIN/DF = 0.267, GFI = 0.998, CFI = 1.000, RMSEA = 0.000), with a Cronbach's alpha score of 0.868. However, the CFA of external coercive pressures indicated

that items 14 and 15 had low factor loadings, and therefore they were excluded from the analysis, meaning that there were not enough items to determine the model goodness of fit. The two remaining items exhibited good reliability, with a Cronbach's alpha score of 0.851 reported. Finally, the measurement model for mimetic pressures revealed that items 4 and 5 had low factor loadings, and hence they were eliminated. While there were too few items to determine the model goodness of fit, the reliability of the mimetic pressure scale was good with a Cronbach's alpha score of 0.738 reported.

**Table 3.2 Results of the measurement models**

Variable	No. of items	Cronbach's $\alpha$	CMIN/ DF	df	GFI	CFI	RMSEA
Internal coercive pressures	4	0.868	0.267	2	0.998	1.000	0.000
External coercive pressures	2	0.851	N/A	0	N/A	N/A	N/A
Mimetic pressures	3	0.738	N/A	0	N/A	N/A	N/A
Normative pressures	7	0.896	1.343	13	0.969	0.992	0.047
Management innovation practices	6	0.869	2.109	7	0.968	0.981	0.085
Management innovation techniques	6	0.890	1.614	8	0.973	0.990	0.063
Competitive advantage	7	0.933	1.570	10	0.972	0.994	0.061

**Note:** Recommended threshold CMIN/DF < 5; GFI > 0.90; CFI > 0.95; RMSEA < 0.08

### 3.3.3.2 Management innovation

Management innovation was measured using the Volberda et al. (2013) integrative framework, which comprises four dimensions: new management practices; new management processes; new management structures; and new management techniques. The Vaccaro et al. (2012) six-item scale (see Appendix 3A) was employed to assess the degree to which the first three dimensions (each containing two items) are present in an organisation, using a five-point Likert scale, with anchors of "1 = *Strongly disagree*" and "5 = *Strongly agree*".

The measurement scale of the fourth dimension of management innovation (new management techniques) was adapted from Su and Baird (2018) and Baird et al. (2019). The scale assesses

the use of management techniques in respect to the extent of use of six contemporary management innovation initiatives: TQM; BSC; Activity-Based Management (ABM); Benchmarking; Environmental Management Accounting (EMA); and Value Chain Analysis (VCA). The respondents were instructed to indicate the extent to which these initiatives were currently used in their business unit using a five-point scale, with anchors of “1 = *Not at all*” and “5 = *To a great extent*” (see Appendix 3A).

EFA with principal component method (varimax rotation) was conducted on the 12 management innovation items and revealed two dimensions that accounted for 63.84% of the total variance explained (see Table 3.3). The first dimension encompassed six items that measure new management practices, processes, and structures and was therefore labelled “management innovation practices”. The second dimension included items relating to new management techniques (six items) and hence, was labelled “management innovation techniques”.

**Table 3.3 Factor analysis of the management innovation measures**

Item	Factor	
	Management innovation techniques	Management innovation practices
1. Rules and procedures within our business unit are regularly renewed.	0.054	<b>0.699</b>
2. We regularly make changes to our employees' tasks and functions.	0.148	<b>0.801</b>
3. Our business unit regularly implements new management systems.	0.181	<b>0.832</b>
4. The policy with regard to employee compensation has been changed in the last three years.	0.266	<b>0.644</b>
5. The intra- and inter-departmental communication structure within our business unit is regularly restructured.	0.328	<b>0.756</b>
6. We continuously alter certain elements of the business unit's structure.	0.336	<b>0.723</b>
7. Total Quality Management	<b>0.622</b>	0.461
8. Balanced Scorecard	<b>0.793</b>	0.187
9. Activity Based Management	<b>0.829</b>	0.133
10. Benchmarking	<b>0.743</b>	0.216
11. Environmental Management Accounting	<b>0.796</b>	0.263
12. Value Chain Analysis	<b>0.826</b>	0.168

Extraction Method: Principal Component Analysis.  
Rotation Method: Varimax with Kaiser Normalisation.  
Rotation converged in 3 iterations.

CFA was performed to assess the validity of each dimension of management innovation, with the results presented in Appendix 3B and Table 3.2. The results for the first dimension of management innovation (management innovation practices) exhibited a good model fit (CMIN/DF = 2.109; GFI = 0.968; CFI = 0.981; RMSEA = 0.085), with a Cronbach's alpha score of 0.869.<sup>12</sup> The measurement model for the six items included in the second dimension

<sup>12</sup> The required standard of reliability is 0.7 and above (Nunnally, 1978).

of management innovation (i.e., management innovation techniques) also exhibited a good model fit (CMIN/DF = 1.614; GFI = 0.973; CFI = 0.990; RMSEA = 0.063), with a Cronbach's alpha score of 0.890. Therefore, the extent of use of management innovation practices (techniques) was measured based on the average score for the items included in each dimension, with higher (lower) scores representing a greater (lower) extent of use of management innovation practices (techniques).

### **3.3.3.3 Competitive advantage**

Competitive advantage was assessed using an adapted version of Schilke's (2014) six-item instrument. Respondents were required to identify how their organisation performed in relation to six items that covered various aspects of financial and strategic performance, using a seven-point Likert scale, with anchors of "1 = *Strongly disagree*" and "7 = *Strongly agree*" (see Appendix 3A). Further, given that previous research identifies sales growth rate as a reliable indicator of superior performance, a seventh item, He and Wong's (2004) measure of sales growth ('Our sales growth rate is continuously above industry average'), was incorporated into our instrument. The EFA demonstrated that all seven items loaded onto one factor. Further, CFA was conducted to test the validity of the model measurement, with the result indicating a good model fit (CMIN/DF = 1.570; GFI = 0.972; CFI = 0.994; RMSEA = 0.061), and a Cronbach's alpha score of 0.933 (see Appendix 3B and Table 3.2). Hence, competitive advantage was measured as the average score of the seven items, with higher (lower) scores reflecting stronger (weaker) competitive advantage.



## 3.4 Results

### 3.4.1 Descriptive statistics

The descriptive statistics are presented in Table 3.4, including the mean, standard deviation (SD), and the maximum and minimum values for all of the variables. Both management innovation practices and techniques have moderate mean scores (3.40 and 3.28 respectively)<sup>13</sup>, with the score of the extent of use of management innovation practices higher than the score for management innovation techniques. The mean scores for the institutional pressure constructs indicate the extent of influence of each type of pressure with mimetic pressures exerting the strongest pressure and internal coercive pressures exerting the least pressure. Competitive advantage has a relatively high mean score (4.78), indicating a high level of competitive advantage.

**Table 3.4 Descriptive Statistics**

Variable	Mean	SD	Theoretical range	Minimum	Maximum
Internal coercive pressures	3.39	1.06	1-5	1	5
External coercive pressures	3.53	0.95	1-5	1	5
Mimetic pressures	3.64	0.8	1-5	1	5
Normative pressures	3.45	0.89	1-5	1	5
Management innovation practices	3.40	0.86	1-5	1	5
Management innovation techniques	3.18	1.09	1-5	1	5
Competitive advantage	4.78	1.25	1-7	1	7

### 3.4.2 Reliability and validity

In addition to the Cronbach's alpha ( $\alpha$ ) scores, the reliability of the constructs was further tested by calculating composite reliability (CR) scores, with Table 3.5 revealing that the CR

<sup>13</sup> Mean scores at the mid-point of the range are considered moderate.

values exceeded the recommended threshold of 0.70 for all of the constructs (Bagozzi & Yi, 1988). In addition, the average variance extracted (AVE) was calculated to test the convergent validity, with all of the constructs having an AVE value that exceeds the cut-off value of 0.50 (Hair et al., 1998).

**Table 3.5 Reliability and validity of the measures**

Variable	AVE	CR	$\alpha$
Internal coercive pressures	0.64	0.87	0.87
External coercive pressures	0.64	0.78	0.85
Mimetic pressures	0.50	0.74	0.74
Normative pressures	0.56	0.90	0.90
Management innovation practices	0.61	0.86	0.86
Management innovation techniques	0.56	0.89	0.89
Competitive advantage	0.65	0.93	0.93

**Note:** AVE= Average variance extracted; CR= Composite reliability;  $\alpha$ = Cronbach's Alpha

In assessing the discriminant validity, the value of the square root of the AVE scores for each construct was greater than the correlation values with all of the other constructs (Fornell & Larcker, 1981), with the results in Table 3.6 supporting the discriminant validity of the constructs.

**Table 3.6 The square root of the average variance extracted (AVE) scores and the correlations between constructs**

Variables	1	2	3	4	5	6	7
1. Internal coercive pressures	<b>0.80</b>						
2. External coercive pressures	0.39	<b>0.80</b>					
3. Mimetic pressures	0.39	0.31	<b>0.70</b>				
4. Normative pressures	0.59	0.55	0.34	<b>0.75</b>			
5. Management innovation practices	0.36	0.26	0.29	0.37	<b>0.78</b>		
6. Management innovation techniques	0.42	0.21	0.30	0.50	0.55	<b>0.75</b>	
7. Competitive advantage	0.38	0.19	0.33	0.39	0.42	0.47	<b>0.80</b>

**Note:** The diagonal scores in bold represent the square root of AVE

### 3.4.3 The structural model

The data were analysed using structural equation modelling (SEM) using AMOS software, with the results of the path analysis presented in Table 3.7 and shown in Figure 3.2. In accordance with Anderson and Gerbing (1988), non-significant paths were eliminating from the model until the remaining paths were significant. The results indicate a good model fit<sup>14</sup> (CMIN/DF = 1.698, GFI = 0.981, AGFI = 0.913, CFI = 0.987, RMSEA = 0.067).

#### 3.4.3.1 The association between institutional pressures and management innovation

The first hypothesis stated that coercive pressure would positively influence management innovation. As can be seen in Table 3.7, the result of the SEM reveals a positive association between internal coercive pressures and management innovation practices ( $\beta = 0.213$ ,  $p = 0.019$ ) and techniques ( $\beta = 0.200$ ,  $p = 0.017$ ). However, external coercive pressures are negatively associated with management innovation techniques ( $\beta = -0.147$ ,  $p = 0.044$ ), and hence, *Hypothesis 1* is only partially supported. The second hypothesis proposed that mimetic pressures would be positively related to management innovation, but the findings revealed no such association, and therefore *Hypothesis 2* is not supported. Finally, normative pressures were found to be positively associated with both management innovation practices ( $\beta = 0.244$ ,  $p = 0.007$ ) and techniques ( $\beta = 0.462$ ,  $p = 0.000$ ), thereby providing support for *Hypothesis 3*.

#### 3.4.3.2 The association between management innovation and competitive advantage

The fourth hypothesis maintained that the extent of use of management innovation would be positively associated with competitive advantage. Table 3.7 and Figure 3.2 illustrate that both

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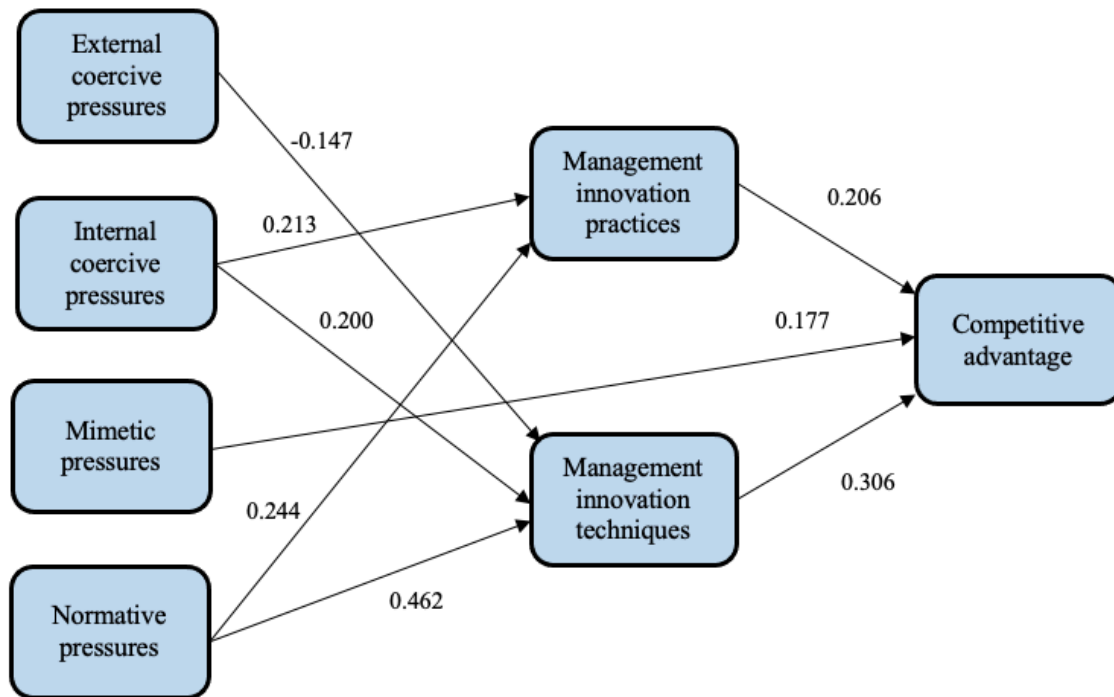
<sup>14</sup> Values of CMIN/DF < 5, CFI  $\geq$  0.95, GFI  $\geq$  0.90, AGFI  $\geq$  0.90 and RMSEA < 0.08 (Hooper et al., 2008; Hu & Bentler, 1999) are considered indicative of a good model fit.

dimensions of management innovation, practices ( $\beta = 0.206, p = 0.013$ ) and techniques ( $\beta = 0.306, p = 0.000$ ), are positively related to competitive advantage, thereby providing support for *Hypothesis 4*.

**Table 3.7 Results of the path analysis for the association between institutional pressures, management innovation, and competitive advantage**

Regression path	Path coefficient	SE	t-value	P
Internal coercive pressures → Management innovation practices	0.213	0.073	2.343	0.019
Internal coercive pressures → Management innovation techniques	0.200	0.087	2.381	0.017
External coercive pressures → Management innovation techniques	-0.147	0.082	-2.010	0.044
Normative pressures → Management innovation practices	0.244	0.093	2.686	0.007
Normative pressures → Management innovation techniques	0.462	0.119	5.053	0.000
Management innovation practices → Competitive advantage	0.206	0.119	2.481	0.013
Management innovation techniques → Competitive advantage	0.306	0.094	3.682	0.000
Mimetic pressures → Competitive advantage	0.177	0.099	2.528	0.011
<b>Goodness-of-fit indices:</b> CMIN/DF = 1.698, GFI = 0.981, AGFI = 0.913, CFI = 0.987, RMSEA = 0.067				

**Figure 3.2 The results of SEM**



### 3.5 Discussion and conclusion

The current research contributes to the contingency-based literature by providing empirical evidence of the influence of institutional pressures on management innovation and the subsequent influence of management innovation on competitive advantage. The results confirm that the use of both management innovation practices and techniques are positively related to competitive advantage, thereby indicating that competitive advantage can be enhanced through the use of management innovation. Such findings reinforce the claims made in previous studies that management innovation is a source of competitive advantage (e.g., Damanpour & Aravind, 2012; Mol & Birkinshaw, 2006, 2009; Hamel, 2006; Birkinshaw & Mol, 2006). Accordingly, managers are encouraged to use new management practices and techniques in order to enhance the competitive advantage of their organisations. This includes the use of new ideas to manage organisational processes and activities, changing organisational

structures, managing employees' tasks and the reward system, managing control systems, and managing relationships with customers and suppliers.

The crucial role of management innovation in enhancing competitive advantage highlights the importance of examining the antecedents of management innovation, with our study contributing to this contingency-based literature by examining the influence of DiMaggio and Powell's (1983) three institutional pressures (coercive, mimetic, and normative) on management innovation. Consistent with institutional theory, our analysis revealed three types of institutional pressures that are conceptually and empirically distinguished from one another: coercive, mimetic, and normative pressures. However, the factor analysis of institutional pressures indicated that coercive pressures could be divided into two groups: external and internal coercive pressures.

The findings revealed that internal coercive pressures are positively related to both management innovation practices and techniques. This suggests that coercive pressures from within an organisation, particularly pressure from senior management, the board of directors, head office, and changes in an organisation's strategic orientation, can enhance the extent of use of management innovation in organisations. Accordingly, it is recommended that managers implement more coercive strategies in their organisations to enhance the extent of use of management innovation. Alternatively, while external coercive pressures, such as the need to comply with government regulations, and the expectations of industry, were not found to influence the extent of use of management innovation practices, they were found to inhibit the use of management innovation techniques. Hence, while organisations are unable to manage these external forces, managers should be aware of them and their ability to negatively influence their extent of use of management innovation techniques.

The findings also revealed that normative pressures are positively associated with both management innovation practices and techniques. This outcome corresponds with institutional theory, suggesting that normative pressures are an important force underlying the use of management innovation, and is consistent with the findings of dos Santos et al. (2020). Hence, the findings indicate that following the recommendations of professional associations and experts (e.g., international accounting and auditing bodies, trade associations, and professional networking) is likely to facilitate enhancements in the extent of use of management innovation. Therefore, managers are encouraged to keep in touch with updates from and the recommendations of local and international professional bodies in order to promote the use of new management practices and techniques. In particular, new professional standards and recommendations may provide organisations with an insight into what organisational activities and functions need to be managed differently through using new management practices and techniques. Further, managers are encouraged to participate in networking events and engage with their peers from other organisations in order to learn about new management practices and techniques.

Surprisingly, mimetic pressures showed no association with management innovation practices or techniques, suggesting that organisations do not tend to follow their competitors in using management innovations. This result is inconsistent with the findings of previous studies in which mimetic isomorphism is argued to stimulate the organisations' use of innovation in general, and management innovation in particular (e.g., Walker et al., 2011; Wischnevsky & Damanpour, 2006; Kogut & Parkinson, 1998; Abrahamson, 1991; Teece, 1980). However, this finding is consistent with dos Santos et al. (2020) and can possibly be attributed to organisations trying to avoid the negative performance consequences associated with the imitation of other organisations' management innovation (Barreto & Baden-Fuller, 2006).

The study contributes to the literature in several ways. First, it extends the contingency-based literature on the antecedents of management innovation by highlighting the importance of institutional pressures in using management innovation. Hence, the findings provide managers with an insight into which institutional pressures, in this study internal coercive and normative pressures, can facilitate an enhancement in the extent of use of management innovation within their organisation. Therefore, managers should be aware of, and anticipate, these pressures to enhance the degree to which such innovations are used and implemented in their organisation. Second, this study contributes to the strategic management literature and the literature examining the effectiveness of management innovation by providing empirical evidence which highlights the critical role of management innovation in enhancing competitive advantage.

The findings have a number of practical implications. First, they will enhance managers' awareness of their institutional environment and their knowledge of the specific institutional pressures that influence or constrain their ability to use management innovations. Second, managers will be able to better evaluate and handle future institutional changes in their business environment, thereby improving their capacity to use management innovations. Third, managers will be motivated to innovate in respect to their management of organisational processes and activities, which should enhance their organisation's competitive advantage.

### **3.6 Limitations and recommendations for future research**

The study is subject to some limitations, which provide avenues for future research. The usual limitations associated with the use of a mail survey method apply, including common method bias and social desirability bias. Accordingly, future studies may reinforce the findings of this study by using alternative research methods, such as interviews, to provide further insights into the influence of institutional pressures on management innovation. Future research can also



conduct longitudinal and comparative investigations into the impact of management innovation on competitive advantage. Further, given the lack of a significant relationship between mimetic pressures and the extent of use of management innovation, future studies are encouraged to further investigate this relationship. Future research may also examine how organisations strategically respond to institutional pressures to use management innovation. Finally, given that management innovation is important to enhance organisational performance and competitive advantage, future research may examine the role of organisational capabilities in enhancing the extent use of management innovation.

## References

- Abrahamson, E. (1991). Managerial fads and fashions: The diffusion and rejection of innovations. *Academy of Management Review*, 16(3), 586–612.
- Abrahamson, E. (1996). Management fashion. *Academy of Management Review*, 21(1), 254–285.
- Abrahamson, E., & Bartner, L. R. (1990). When do bandwagon diffusions roll? How far do they go? And when do they roll backwards?: A computer simulation. *Academy of Management Best Paper Proceedings*, 155–159.
- Anderson, J., & Gerbing, D. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, 103(3), 411–423.
- Ang, S., & Cummings, L. L. (1997). Strategic response to institutional influences on information systems outsourcing. *Organization Science*, 8(3), 235–256.
- Armbruster, H., Bikfalvi, A., Kinkel, S., & Lay, G. (2008). Organizational innovation: The challenge of measuring non-technical innovation in large-scale surveys. *Technovation*, 28(10), 644–657.
- Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science*, 16(1), 74–94.
- Baird, K., Su, S., & Munir, R. (2019). Levers of control, management innovation and organisational performance. *Pacific Accounting Review*, 31(3), 358–375.
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99–120.
- Barreto, I., & Baden-Fuller, C. (2006). To conform or to perform? Mimetic behaviour, legitimacy-based groups and performance consequences. *Journal of Management Studies*, 43(7), 1559–1581.
- Benders, J., Batenburg, R., & Van der Blonk, H. (2006). Sticking to standards; technical and other isomorphic pressures in deploying ERP-systems. *Information & Management*, 43(2), 194–203.
- Birkinshaw, J., Hamel, G., & Mol, M. (2008). Management innovation. *Academy of Management Review*, 33(4), 825–845.

- Birkinshaw, J., & Mol, M. (2006). How management innovation happens. *MIT Sloan Management Review*, 47(4), 81–88.
- Braunscheidel, M., Hamister, J., Suresh, N., & Star, H. (2011). An institutional theory perspective on Six Sigma adoption. *International Journal of Operations & Production Management*, 31(4), 423–451.
- Camisón, C., & Villar-López, A. (2014). Organizational innovation as an enabler of technological innovation capabilities and firm performance. *Journal of Business Research*, 67(1), 2891–2902.
- Černe, M., Jaklič, M., & Škerlavaj, M. (2013). Management innovation in focus: The role of knowledge exchange, organizational size, and IT system development and utilization. *European Management Review*, 10(3), 153–166.
- Cho, H., & Pucik, V. (2005). Relationship between innovativeness, quality, growth, profitability, and market value. *Strategic Management Journal*, 26(6), 555–575.
- Colwell, S., & Joshi, A. (2013). Corporate ecological responsiveness: Antecedent effects of institutional pressure and top management commitment and their impact on organizational performance. *Business Strategy and the Environment*, 22(2), 73–91.
- Damanpour, F. (2014). Footnotes to research on management innovation. *Organization Studies*, 35(9), 1265–1285.
- Damanpour, F., & Aravind, D. (2012). Managerial innovation: Conceptions, processes, and antecedents. *Management and Organization Review*, 8(2), 423–454.
- Damanpour, F., Sanchez-Henriquez, F., & Chiu, H. (2018). Internal and external sources and the adoption of innovations in organizations. *British Journal of Management*, 29(4), 712–730.
- Damanpour, F., & Schneider, M. (2009). Characteristics of innovation and innovation adoption in public organizations: Assessing the role of managers. *Journal of Public Administration Research and Theory*, 19(3), 495–522.
- Dillman, D. (2007). Mail and internet surveys: The tailored design method (2nd ed.). John Wiley & Sons Inc.
- DiMaggio, P., & Powell, W. (1983). The iron cage revisited: Collective rationality and institutional isomorphism in organizational fields. *American Sociological Review*, 48(2), 147–160.

- dos Santos, M. G., Borini, F. M., Pereira, R. M., & Raziq, M. M. (2020). Institutional pressures and the diffusion of organisational innovation: Evidence from Brazilian firms. *Technology Analysis & Strategic Management*, 32(7), 869–880.
- Evangelista, R., & Vezzani, A. (2010). The economic impact of technological and organizational innovations. A firm-level analysis. *Research Policy*, 39(10), 1253–1263.
- Fane, G., Vaghefi, M., Deusen, C., & Woods, L. (2003). Competitive advantage the Toyota way. *Business Strategy Review*, 14(4), 51–60.
- Fikru, M. (2014). International certification in developing countries: The role of internal and external institutional pressure. *Journal of Environmental Management*, 144, 286–296.
- Flynn, B., Schroeder, R., & Sakakibara, S. (1995). The impact of quality management practices on performance and competitive advantage. *Decision Sciences*, 26(5), 659–691.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50.
- Frumkin, P., & Galaskiewicz, J. (2004). Institutional isomorphism and public sector organizations. *Journal of Public Administration Research and Theory*, 14(3), 283–307.
- Ganter, A., & Hecker, A. (2013). Deciphering antecedents of organizational innovation. *Journal of Business Research*, 66(5), 575–584.
- Goodstein, J. (1994). Institutional pressures and strategic responsiveness: Employer involvement in work-family issues. *Academy of Management Journal*, 37(2), 350–382.
- Granlund, M., & Lukka, K. (1998). It's a small world of management accounting practices. *Journal of Management Accounting Research*, 10, 153–179.
- Greenwood, R., Suddaby, R., & Hinings, C. R. (2002). Theorizing change: The role of professional associations in the transformation of institutionalized fields. *Academy of Management Journal*, 45(1), 58–80.
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (1998). Multivariate data analysis (Vol. 5, Issue 3). Prentice hall Upper Saddle River, NJ.
- Hamel, G. (2006). The why, what, and how of management innovation. *Harvard Business Review*, 84(2), 72–84.

- Harman, H. H. (1967). *Modern factor analysis*. University of Chicago.
- Haveman, H. A. (1993). Follow the leader: Mimetic isomorphism and entry into new markets. *Administrative Science Quarterly*, 38(4), 593–627.
- He, Z.-L., & Wong, P.-K. (2004). Exploration vs. Exploitation: An Empirical Test of the Ambidexterity Hypothesis. *Organization Science*, 15(4), 481–494.
- Hecker, A., & Ganter, A. (2013). The influence of product market competition on technological and management innovation: Firm-level evidence from a large-scale survey. *European Management Review*, 10(1), 17–33.
- Hollen, R., Van Den Bosch, F. A., & Volberda, H. (2014). The challenge of developing new meta-management practices of firms in meta-organizations. In *Behavioral Strategy: Emerging Perspectives* (pp. 105–127). IAP.
- Hooper, D., Coughlan, J., & Mullen, M. R. (2008). Structural equation modelling: Guidelines for determining model fit. *Electronic Journal of Business Research Methods*, 6(1), 53–60.
- Hopper, T., & Major, M. (2007). Extending institutional analysis through theoretical triangulation: regulation and activity-based costing in Portuguese telecommunications. *European Accounting Review*, 16(1), 59–97.
- Hu, L., & Bentler, P. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1–55.
- Huo, B., Han, Z., Zhao, X., Zhou, H., Wood, C., & Zhai, X. (2013). The impact of institutional pressures on supplier integration and financial performance: Evidence from China. *International Journal of Production Economics*, 146(1), 82–94.
- Jansen, J., Van Den Bosch, F., & Volberda, H. (2006). Exploratory innovation, exploitative innovation, and performance: Effects of organizational antecedents and environmental moderators. *Management Science*, 52(11), 1661–1674.
- John, C., Cannon, A., & Pouders, R. (2001). Change drivers in the new millennium: implications for manufacturing strategy research. *Journal of Operations Management*, 19(2), 143–160.
- Jun, M., Cai, S., & Shin, H. (2006). TQM practice in maquiladora: Antecedents of employee satisfaction and loyalty. *Journal of Operations Management*, 24(6), 791–812.

- Ketokivi, M. A., & Schroeder, R. G. (2004). Strategic, structural contingency and institutional explanations in the adoption of innovative manufacturing practices. *Journal of Operations Management*, 22(1), 63–89.
- Khosravi, P., Newton, C., & Rezvani, A. (2019). Management innovation: A systematic review and meta-analysis of past decades of research. *European Management Journal*, 37(6), 694–707.
- Ko, E., Kim, S. H., Kim, M., & Woo, J. Y. (2008). Organizational characteristics and the CRM adoption process. *Journal of Business Research*, 61(1), 65–74.
- Kogut, B., & Parkinson, D. (1998). Adoption of the multidivisional structure: Analyzing history from the start. *Industrial and Corporate Change*, 7(2), 249–273.
- Kostova, T., & Roth, K. (2002). Adoption of an organizational practice by subsidiaries of multinational corporations: institutional and relational effects. *Academy of Management Journal*, 45(1), 215–233.
- Liang, H., Saraf, N., Hu, Q., & Xue, Y. (2007). Assimilation of enterprise systems: The effect of institutional pressures and the mediating role of top management. *MIS Quarterly*, 31(1), 59–87.
- Lieberman, M. B., & Montgomery, D. B. (1988). First-mover advantages. *Strategic Management Journal*, 9(S1), 41–58.
- Lin, H.-F., Su, J.-Q., & Higgins, A. (2016). How dynamic capabilities affect adoption of management innovations. *Journal of Business Research*, 69(2), 862–876.
- Liu, H., Ke, W., Wei, K. K., Gu, J., & Chen, H. (2010). The role of institutional pressures and organizational culture in the firm's intention to adopt internet-enabled supply chain management systems. *Journal of Operations Management*, 28(5), 372–384.
- Lucianetti, L., Jabbour, C., Jose, C., Gunasekaran, A., & Latan, H. (2018). Contingency factors and complementary effects of adopting advanced manufacturing tools and managerial practices: Effects on organizational measurement systems and firms' performance. *International Journal of Production Economics*, 200, 318–328.
- Malmi, T. (1999). Activity-based costing diffusion across organizations: An exploratory empirical analysis of Finnish firms. *Accounting, Organizations and Society*, 24(8), 649–672.

- Meyer, J., & Rowan, B. (1977). Institutionalized organizations: Formal structure as myth and ceremony. *American Journal of Sociology*, 83(2), 340–363.
- Mol, M., & Birkinshaw, J. (2006). Against the flow: Reaping the rewards of management innovation. *European Business Forum*, 27, 24–29.
- Mol, M., & Birkinshaw, J. (2008). Giant steps in management: Creating innovations that change the way we work. Harlow: Financial Times Prentice Hall.
- Mol, M., & Birkinshaw, J. (2009). The sources of management innovation: When firms introduce new management practices. *Journal of Business Research*, 62(12), 1269–1280.
- Mol, M., & Birkinshaw, J. (2014). The role of external involvement in the creation of management innovations. *Organization Studies*, 35(9), 1287–1312.
- Munir, R., & Baird, K. (2016). Influence of institutional pressures on performance measurement systems. *Journal of Accounting & Organizational Change*, 12(2), 106–128.
- Naranjo-Gil, D. (2009). The influence of environmental and organizational factors on innovation adoptions: Consequences for performance in public sector organizations. *Technovation*, 29(12), 810–818.
- Nieves, J. (2016). Outcomes of management innovation: An empirical analysis in the services industry. *European Management Review*, 13(2), 125–136.
- Nunnally, J. (1978). Psychometric Theory. In *McGraw-Hill*.
- O'Mahoney, J. (2007). The diffusion of management innovations: The possibilities and limitations of memetics. *Journal of Management Studies*, 44(8), 1324–1348.
- OECD. (2005). Oslo Manual—Guidelines for Collecting and Interpreting Innovation Data. [https://read.oecd-ilibrary.org/science-and-technology/oslo-manual\\_9789264013100-en#page4](https://read.oecd-ilibrary.org/science-and-technology/oslo-manual_9789264013100-en#page4)
- Oliver, C. (1991). Strategic responses to institutional processes. *Academy of Management Review*, 16(1), 145–179.
- Oliver, C. (1997). Sustainable competitive advantage: Combining institutional and resource-based views. *Strategic Management Journal*, 18(9), 697–713.

- Paauwe, J., & Boselie, P. (2005). 'Best practices... in spite of performance': Just a matter of imitation? *The International Journal of Human Resource Management Group*, 16(6), 987–1003.
- Palmer, D. A., Jennings, P. D., & Zhou, X. (1993). Late adoption of the multidivisional form by large US corporations: Institutional, political, and economic accounts. *Administrative Science Quarterly*, 38(1), 100–131.
- Peteraf, M., & Barney, J. (2003). Unraveling the resource-based tangle. *Managerial and Decision Economics*, 24(4), 309–323.
- Pil, F., & MacDuffie, J. (1996). The adoption of high-involvement work practices. *Industrial Relations: A Journal of Economy and Society*, 35(3), 423–455.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879–903.
- Raffaelli, R., & Glynn, M. A. (2014). Turnkey or tailored? Relational pluralism, institutional complexity, and the organizational adoption of more or less customized practices. *Academy of Management Journal*, 57(2), 541–562.
- Rhodes, J., Hung, R., Lok, P., Ya-Hui Lien, B., & Wu, C.-M. (2008). Factors influencing organizational knowledge transfer: Implication for corporate performance. *Journal of Knowledge Management*, 12(3), 84–100.
- Roberts, E. (1999). In defence of the survey method: An illustration from a study of user information satisfaction. *Accounting and Finance*, 39(1), 53–77.
- Roehrich, J. K., Davies, A., Frederiksen, L., & Sergeeva, N. (2019). Management innovation in complex products and systems: The case of integrated project teams. *Industrial Marketing Management*, 79, 84–93.
- Schilke, O. (2014). On the contingent value of dynamic capabilities for competitive advantage: The nonlinear moderating effect of environmental dynamism. *Strategic Management Journal*, 35(2), 179–203.
- Scott, W. R. (1992). Organizations: Rational, natural, and open systems. In *Aufl.*, Englewood Cliffs (NJ).
- Slack, T., & Hinings, B. (1994). Institutional pressures and isomorphic change: An empirical test. *Organization Studies*, 15(6), 803–827.



- Su, S., & Baird, K. (2018). The role of leaders in generating management innovation. *The International Journal of Human Resource Management*, 29(19), 2758–2779.
- Teece, D. (1980). The diffusion of an administrative innovation. *Management Science*, 26(5), 464–470.
- Teece, D. (2007). Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal*, 28(13), 1319–1350.
- Teo, H. H., Wei, K. K., & Benbasat, I. (2003). Predicting intention to adopt interorganizational linkages: An institutional perspective. *MIS Quarterly*, 27(1), 19–49.
- Tolbert, P., & Zucker, L. (1983). Institutional sources of change in the formal structure of organizations: The diffusion of civil service reform, 1880-1935. *Administrative Science Quarterly*, 28(1), 22–39.
- Vaccaro, I., Jansen, J., Van Den Bosch, F., & Volberda, H. (2012). Management innovation and leadership: The moderating role of organizational size. *Journal of Management Studies*, 49(1), 28–51.
- Volberda, H., Van Den Bosch, F. A., Mihalache, O., Peeters, C., Massini, S., & Lewin, A. (2014). Sources of Variation in the Efficiency of Adopting Management Innovation: The Role of Absorptive Capacity Routines, Managerial Attention and Organizational Legitimacy. *Organization Studies*, 35(9), 1343–1371.
- Volberda, H., Van Den Bosch, F., & Heij, C. (2013). Management innovation: Management as fertile ground for innovation. *European Management Review*, 10(1), 1–15.
- Walker, R., Chen, J., & Aravind, D. (2015). Management innovation and firm performance: An integration of research findings. *European Management Journal*, 33(5), 407–422.
- Walker, R., Damanpour, F., & Devece, C. (2011). Management innovation and organizational performance: The mediating effect of performance management. *Journal of Public Administration Research and Theory*, 21(2), 367–386.
- Wang, S., Li, J., Song, J., Li, Y., & Sherk, M. (2018). Institutional pressures and product modularity: Do supply chain coordination and functional coordination matter? *International Journal of Production Research*, 56(20), 6644–6657.

- Westphal, J., Gulati, R., & Shortell, S. (1997). Customization or conformity? An institutional and network perspective on the content and consequences of TQM adoption. *Administrative Science Quarterly*, 42(2), 366–394.
- Wischnevsky, J. D., & Damanpour, F. (2006). Organizational transformation and performance: An examination of three perspectives. *Journal of Managerial Issues*, 18(1), 104–128.
- Zsidisin, G., Melnyk, S., & Ragatz, G. (2005). An institutional theory perspective of business continuity planning for purchasing and supply management. *International Journal of Production Research*, 43(16), 3401–3420.

## **Appendix 3A: Measurement of variables**

### **Management innovation**

#### *Management innovation practices*

- Item 1: Rules and procedures within our organisation are regularly renewed.
- Item 2: We regularly make changes to our employees' tasks and functions.
- Item 3: Our organisation regularly implements new management systems.
- Item 4: The policy with regards to employee compensation has been changed in the last three years.
- Item 5: The intra- and inter-departmental communication structure within our organization is regularly restructured.
- Item 6: We continuously alter certain elements of the organisational structure.

#### *Management innovation techniques*

- Item 1: Total Quality Management
- Item 2: Balanced Scorecard
- Item 3: Activity-Based Management
- Item 4: Benchmarking
- Item 5: Environmental Management Accounting
- Item 6: Value Chain Analysis

### **Institutional pressures**

- Item 1: An uncertain economic environment.
- Item 2: Higher economic growth and development.
- Item 3: Competition in the industry.
- Item 4: Awareness of best practices in the industry.
- Item 5: Legitimizing our activities.
- Item 6: Compliance with industry regulations.
- Item 7: Compliance with government regulations.
- Item 8: Compliance with media pressures.
- Item 9: Compliance with International Financial Reporting Standards and International Auditing Standards.
- Item 10: Recommendations from professional bodies and experts.

- Item 11: Recommendations from trade associations.
- Item 12: New accounting standards.
- Item 13: New corporate governance requirements.
- Item 14: Initiatives taken by experienced staff.
- Item 15: Education and training received by staff.
- Item 16: Obligation to follow International Standards.
- Item 17: Pressure from senior management.
- Item 18: Pressure from the Director.
- Item 19: Pressure from head office.
- Item 20: New vision, mission, or strategic plans.

### **Competitive advantage**

- Item 1: We have gained strategic advantage over our competitors.
- Item 2: We have a large market share.
- Item 3: Overall, we are more successful than our major competitors.
- Item 4: Our EBIT (earnings before interest and taxes) is continuously above industry average.
- Item 5: Our ROI (return on investment) is continuously above industry average.
- Item 6: Our ROS (return on sales) is continuously above industry average.
- Item 7: Our sales growth rate is continuously above industry average.

## Appendix 3B: Questionnaire items and CFA statistics

### Management innovation

Constructs and items	Factor loading	t-value	SE	Cronbach alpha
<i>Management innovation practices</i>				0.869
1. Rules and procedures within our organisation are regularly renewed.	0.627	NA	NA	
2. We regularly make changes to our employees' tasks and functions.	0.792	7.661	0.167	
3. Our organisation regularly implements new management systems.	0.825	7.836	0.180	
4. The policy with regard to employee compensation has been changed in the last three years.	0.597	6.203	0.173	
5. The intra- and inter-departmental communication structure within our organisation is regularly restructured.	0.716	7.114	0.170	
6. We continuously alter certain elements of the business unit's structure.	0.710	7.083	0.167	
<b>Goodness-of-fit:</b> CMIN/DF = 2.109; GFI = 0.968; AGFI = 0.903; CFI = 0.981; RMSEA = 0.085				
<i>Management innovation techniques</i>				0.890
1. Total Quality Management	0.695	NA	NA	
2. Balanced Scorecard	0.789	8.727	0.131	
3. Activity Based Management	0.769	8.532	0.126	
4. Benchmarking	0.739	8.243	0.122	
5. Environmental Management Accounting	0.755	8.348	0.139	
6. Value Chain Analysis	0.754	8.341	0.136	
<b>Goodness-of-fit:</b> CMIN/DF = 1.614; GFI = 0.973; AGFI = 0.929; CFI = 0.990 RMSEA = 0.063				

## Institutional pressures

Constructs and items	Factor loading	t-value	SE	Cronbach's $\alpha$
<b>Internal coercive pressures</b>				0.868
1. Pressures from senior management.	0.881***	NA	NA	
2. Pressures from the Director.	0.836***	12.751	0.076	
3. Pressures from the Head Office.	0.844***	12.900	0.081	
4. New vision, mission or strategic plans.	0.595***	7.926	0.070	
<b>Goodness-of-fit:</b> CMIN/DF = 0.267; GFI = 0.998; AGFI = 0.991; CFI = 1.000; RMSEA = 0.000				
				0.896
<b>Normative pressures</b>				
1. Compliance with media pressures.	0.675***	NA	NA	
2. Compliance with International Financial Reporting Standards and International Auditing Standards.	0.820***	8.972	0.139	
3. Recommendations from professional bodies and experts.	0.713***	8.144	0.125	
4. Recommendations from trade associations.	0.821***	8.980	0.135	
5. New accounting standards.	0.728***	8.301	0.125	
6. New corporate governance requirements.	0.686***	7.871	0.130	
7. Obligation to follow International Standards.	0.800***	9.023	0.133	
<b>Goodness-of-fit:</b> CMIN/DF = 1.343; GFI = 0.969; AGFI = 0.932; CFI = 0.992; RMSEA = 0.047				

**Competitive advantage**

Construct and items	Factor loading	t-value	SE	Cronbach alpha
				0.933
1. We have gained strategic advantage over our competitors.	0.675***	NA	NA	
2. We have a large market share.	0.820***	8.926	0.116	
3. Overall, we are more successful than our major competitors.	0.713***	10.401	0.098	
4. Our EBIT (earnings before interest and taxes) is continuously above industry average.	0.821***	9.655	0.137	
5. Our ROI (return on investment) is continuously above industry average.	0.728***	9.914	0.136	
6. Our ROS (return on sales) is continuously above industry average	0.686***	10.015	0.138	
7. Our sales growth rate is continuously above industry average.	0.800***	9.673	0.135	

**Goodness-of-fit:** CMIN/DF = 1.570; GFI = 0.972; AGFI = 0.921; CFI = 0.994; RMSEA = 0.061

## **CHAPTER 4**

### **PAPER THREE**

**Title: The mediating role of organisational dynamic capabilities in the association between management innovation and organisational performance**



## **Abstract**

This study provides an empirical insight into the mediating role of two organisational dynamic capabilities, strategic flexibility and research and development (R&D) competence, in the association between management innovation and organisational performance. Data were collected from 156 middle-level managers in Australian organisations using mail and online surveys and was analysed using structural equation modelling. The findings reveal that strategic flexibility mediates the influence of the two dimensions of management innovation (practices and techniques) on financial and non-financial performance, while R&D competence mediates the influence of these dimensions on non-financial performance. The findings contribute to the literature examining the effectiveness of management innovation by highlighting its role in enhancing organisational dynamic capabilities and organisational performance. Specifically, the findings highlight the importance of using new management innovations in enhancing the ability of organisations to be strategically flexible to business environmental changes and to be able to effectively explore new technological opportunities, which in turn improve organisational performance.

**Keywords:** management innovation; organisational dynamic capabilities; organisational performance

## 4.1 Introduction

The strategic management literature has recognised innovation as an essential strategy for advancing organisational success and achieving competitive advantage, especially considering the increased stress associated with global competition, changes in market conditions, technological advancements, and increasing customer demand for higher quality products and services (Damanpour & Aravind, 2012; Damanpour et al., 2009). Innovative organisations respond more effectively to changes in their environment to create and develop new capabilities that enable them to perform better (Montes et al., 2004). Further, the innovation literature affirms that the success of organisations is attributed to innovations in the way that management work is implemented—that is, management innovation (Birkinshaw et al., 2008; Hamel & Breen, 2007; Hamel, 2006).

Management innovation has been a crucial element in the success of companies such as Toyota, Ford, General Motors (GM), Whole Foods Market, and Google (Birkinshaw et al., 2008; Hamel & Breen, 2007; Hamel, 2006). For instance, Toyota revolutionised its management processes by introducing and implementing the Lean Production System and integrating it with other management strategies and techniques such as Total Quality Management (TQM), target costing, and the Just-in-Time (JIT) inventory management system (Mol & Birkinshaw, 2008; Hamel, 2006; Fane et al., 2003). Similarly, GM remains a leader in the industry because it innovates by implementing a multidivisional structure (Birkinshaw et al., 2008; Hamel, 2006; Kogut & Parkinson, 1998; Teece, 1980).

The awareness of the critical contribution of management innovation to long-term organisational success and competitive advantage has motivated management scholars to direct their attention towards management innovation (Volberda et al., 2013; Vaccaro et al., 2012;

Walker et al., 2011; Mol & Birkinshaw, 2009; Hamel, 2006; Birkinshaw & Mol, 2006). However, although previous studies have pointed out the importance of management innovation in achieving organisational goals and enhancing performance (Volberda et al., 2013; Damanpour & Aravind, 2012; Vaccaro et al., 2012; Mol & Birkinshaw, 2009; Birkinshaw et al., 2008; Hamel, 2006), there is a dearth of empirical studies examining its association with performance (Baird et al., 2019; Khosravi et al., 2019; Walker et al., 2015; Damanpour & Aravind, 2012). Further, while the majority of the existing literature on the performance outcomes associated with management innovation have reported positive results, prior research has employed relatively simplistic models that assert that management innovation has a direct impact on performance (Walker et al., 2011). However, some studies have argued that the influence of management innovation on organisational performance is contingent on internal organisational characteristics, which makes the use of management innovation more complex (Walker et al., 2011; Jansen et al., 2006; Birkinshaw & Mol, 2006). In particular, previous studies have argued that the effect of management innovation on organisational performance is under-investigated and recommend investigating the role of mediators and moderators to advance these findings (Khosravi et al., 2019; Magnier-Watanabe & Benton, 2017; Walker et al., 2015). Consequently, the aim of this study is to extend the literature examining the effectiveness of management innovation. In particular, given that previous studies have adopted simplistic models which examine the direct impact of management innovation on organisational performance, this study aims to examine the mediating role of organisational dynamic capabilities in this relationship.

The dynamic capabilities view focuses on how organisations alter existing capabilities, build and reconfigure new capabilities to identify emerging opportunities and threats, and handle changes in business environments with an appropriate response (Liu, 2013; Helfat et al., 2007;

Teece, 2007; Eisenhardt & Martin, 2000; Teece et al., 1997). These capabilities enable organisations to achieve and sustain a competitive advantage in a dynamically changing environment (Liu, 2013; Helfat et al., 2007; Teece, 2007; Eisenhardt & Martin, 2000; Teece et al., 1997). Further, the dynamic capabilities view argues that organisations should adopt innovation as a means of developing and renewing capabilities across organisational systems (Damanpour, 2010). Hence, as organisations encounter institutional and competitive pressures, they adopt management innovations to alter the organisational administrative system and improve its efficiency and effectiveness (Damanpour et al., 2018; Walker et al., 2015; Mol & Birkinshaw, 2009). This allows them to acquire the knowledge required to reinforce their organisational capabilities and improve existing resources, thereby decreasing or eliminating the performance gap (Damanpour et al., 2018). A number of previous studies have incorporated a number of organisational dynamic capabilities as mediators that enhance performance (e.g., Nuhu et al., 2019; Mu et al., 2018; Ko & Liu, 2017; Chen et al., 2017; Akgün et al., 2014; Santos-Vijande et al., 2012; Shin & Aiken, 2012; Nadkarni & Narayanan, 2007). This study examines the mediating role of two organisational dynamic capabilities, strategic flexibility and R&D competence, in the association between management innovation and organisational performance.

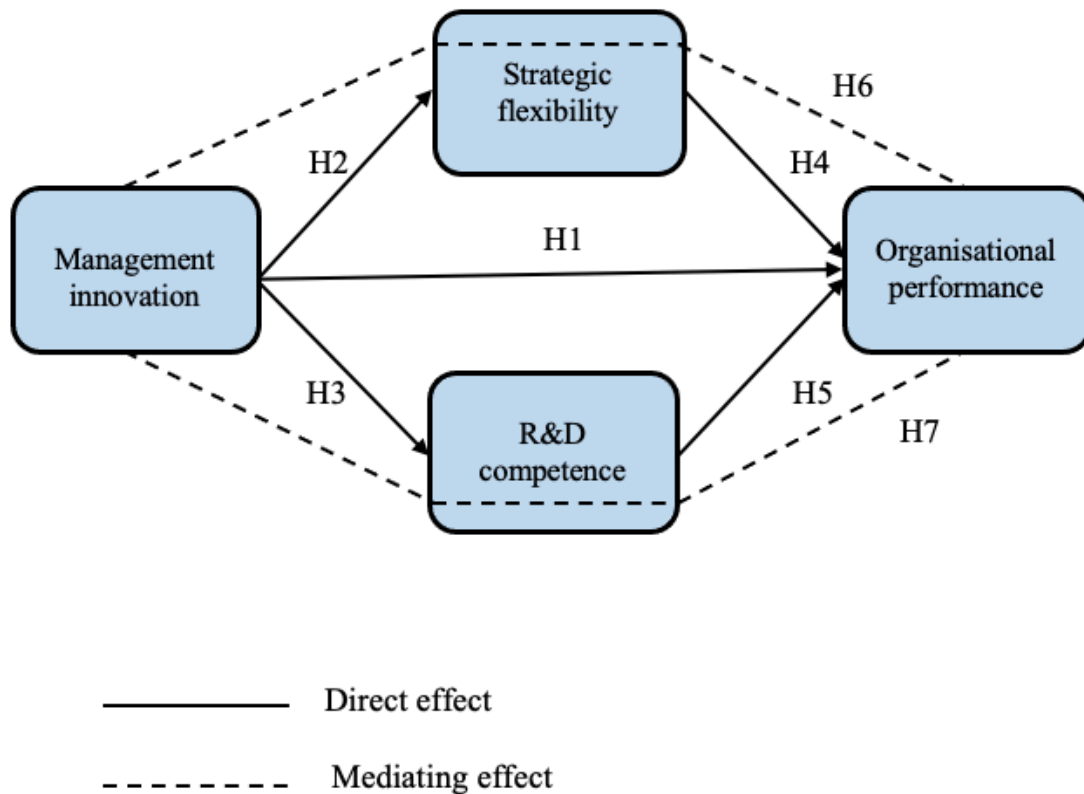
The focus on these two organisational dynamic capabilities is pertinent because of their critical roles during organisational change and, therefore, their strong relevance to organisational performance (Danneels, 2012; Celuch et al., 2007; Nadkarni & Narayanan, 2007). In particular, both strategic flexibility, which enables organisations to anticipate and respond to business changes (Celuch & Murphy, 2010; Nadkarni & Narayanan, 2007; Sanchez, 1995), and R&D competence, which allows organisations to continually explore and build new technologies

(Danneels, 2002, 2008, 2016), are crucial for organisational survival (Danneels, 2016; Johnson et al., 2003; Hitt et al., 1998).

Therefore, in line with our focus on the mediating role of these two dynamic capabilities in the association between management innovation and organisational performance, the theoretical model, as depicted in Figure 4.1, will examine:

1. The association between management innovation and organisational performance;
2. the association between management innovation with both strategic flexibility and R&D competence;
3. the association between strategic flexibility and R&D competence with organisational performance; and
4. the mediating role of strategic flexibility and R&D competence in the association between management innovation with organisational performance.

**Figure 4.1 The conceptual research model**



## **4.2 Literature review and hypotheses development**

### **4.2.1 Management innovation**

Management innovation changes and improves how managers manage their organisations (Lin & Su, 2014; Volberda et al., 2013; Mol & Birkinshaw, 2009; Birkinshaw et al., 2008; Hamel, 2006). As defined by Hamel (2006, p. 75), it represents a “marked departure from traditional management principles, processes, and practices or a departure from customary organisational forms that significantly alters the way the work of management is performed”. In a detailed analysis of the nature of management innovation, Birkinshaw et al. (2008, p. 829) define management innovation as “the generation and implementation of a management practice, process, structure, or technique that is new to the state of the art and is intended to further

organisational goals”. Similarly, Mol and Birkinshaw (2009, p. 1270) state that management innovation entails “the introduction of management practices that are new to the firm with the intention to enhance firm performance”. Management innovation can encompass the organisational-level use of new management approaches, structures, systems, and methods that have been implemented by other companies or institutions.

Management innovation involves changes in four dimensions: management practices, management processes, management structures, and management techniques (Volberda et al., 2013; Birkinshaw et al., 2008). Innovation in management practices affects the day-to-day management work (Su & Baird, 2018; Mol & Birkinshaw, 2008). Innovation in management processes involves changes in the procedures and routines used to conduct management activities, such as strategic planning and performance assessment (Volberda et al., 2013). Innovation in management structures deals with communication systems and organisational restructuring (Birkinshaw et al., 2008; Hamel & Breen, 2007). Innovation in management techniques involves applying specific management tools and methods (Volberda et al., 2013), such as the Balanced Scorecard (BSC) and Activity-Based Costing (ABC).

Management innovations can enhance competitive advantage through contributing to strategy development, facilitating organisational change, enhancing the effectiveness and efficiency of organisational processes and procedures, and improving productivity and quality (Volberda et al., 2013; Walker et al., 2011; Mol & Birkinshaw, 2009; Birkinshaw et al., 2008; Hamel, 2006; Pil & MacDuffie, 1996). This study aims to examine the mediating role of organisational dynamic capabilities in the association between management innovation and organisational performance. We discuss the nature of these organisational dynamic capabilities in Section 4.2.2, specifically, strategic flexibility and R&D competence. Section 4.2.3 then discusses the association between management innovation and organisational performance, followed by

Section 4.2.4 which discusses the influence of management innovation on strategic flexibility and R&D competence. Section 4.2.5 then discusses the association between strategic flexibility and R&D competence with organisational performance. Finally, Section 4.2.6 discusses the mediating role of strategic flexibility and R&D competence in the association between management innovation and organisational performance.

## **4.2.2 Organisational dynamic capabilities**

Organisational capabilities are routines or processes that enable organisations to manage and coordinate internal and external resources to perform organisational activities and gain competitive advantage (Chung et al., 2016; Winter, 2003; Teece et al., 1997; Collis, 1994; Ulrich & Lake, 1991). There are two main types of organisational capabilities: ordinary operational capabilities (i.e., lower-order capabilities) and dynamic capabilities (i.e., higher-order capabilities). Organisational operational capabilities are skills that enable organisations to perform operational, administrative and governance functions that are essential to accomplishing tasks i.e., configuring an organisation's current resources into products and services (Teece, 2012, 2014; Helfat & Winter, 2011; Cepeda & Vera, 2007; Zahra et al., 2006; Winter, 2003; Collis, 1994). The purpose of operational capabilities is to determine technical efficiency and effectiveness in performing core business functions and activities (Teece, 2014; Gebauer, 2011). Alternatively, dynamic capabilities enable organisations to alter their operational capabilities (Helfat & Winter, 2011; Cepeda & Vera, 2007; Winter, 2003; Teece et al., 1997) and involve higher-level activities that reflect the explorative aspects of an organisation (Teece, 2014; Danneels, 2008; Zahra et al., 2006) i.e., they allow organisations to strategically change and align with the external environment (Helfat & Winter, 2011; Teece, 2007; Zahra et al., 2006; Eisenhardt & Martin, 2000). Therefore, dynamic capabilities enable



organisations to realise and address new technological and competitive opportunities in a business environment (Teece, 2012; Easterby-Smith et al., 2009).

Organisational dynamic capabilities include the organisational capacity to identify the need for change and formulate appropriate actions in response to environmental changes, ultimately achieving a better fit with the environment (Helfat et al., 2007; Teece, 2007; Eisenhardt & Martin, 2000). They are directed primarily to strategic insights, which makes them difficult to observe or imitate and hence, enables organisations to develop valuable resources in comparison with those of their competitors (Collis, 1994). Based on the resource-based view (RBV), which maintains that the possession of resource bundles and capabilities across organisations is heterogeneous (Barney, 1991), dynamic organisational capabilities are firm specific, valuable, rare and inimitable and represent a source of competitive advantage (Teece et al., 1997; Barney, 1991, 1996). Therefore, organisations can achieve superior performance and sustain competitive advantage as long as their resources and capabilities are valuable, rare, inimitable and non-substitutable (Teece et al., 1997; Peteraf, 1993; Barney, 1991; Wernerfelt, 1984). Accordingly, given the importance of organisational dynamic capabilities in enhancing performance, this study examines the mediating role of dynamic organisational capabilities in the association between management innovation and organisational performance. In particular, two dynamic organisational capabilities are examined as mediators: strategic flexibility and R&D competence.

Strategic flexibility has been defined as “an organisation’s capability to identify major changes in the external environment, to quickly commit resources to new courses of action in response to change” (Shimizu & Hitt, 2004, p. 45). It reflects the ability of organisations to anticipate and adapt to changes in their internal and external environments (Nadkarni & Narayanan, 2007; Sanchez, 1995). Strategic flexibility therefore entails the ability to respond to changes in the

current business environment in a rapid and effective manner as well as the ability to anticipate changes in the business environment (Johnson et al., 2003; Young-Ybarra & Wiersema, 1999). Such changes include technological advancements, changes to resource allocations, market conditions and competitive pressures (Brozovic, 2018; Celuch & Murphy, 2010). Strategic flexibility is a dynamic capability that enables organisations to model, shape and transform the business environment and thereby, achieve competitive advantage in a turbulent business environment (Nuhu et al., 2019; Pérez-Pérez et al., 2019; Brozovic, 2018; Chen et al., 2017; Liu, 2013; Celuch & Murphy, 2010; Zhou & Wu, 2010; Teece et al., 1997). It enables organisations to better manage risks and threats and effectively explore and identify potential opportunities in their business environment (Celuch & Murphy, 2010; Grewal & Tansuhaj, 2001; Das & Elango, 1995).

R&D competence reflects the ability of organisations to create and add new technological competencies i.e., the ability of an organisation to explore and identify new technologies (Danneels, 2002, 2008, 2016). R&D competence includes skills in areas such as setting up new types of production facilities or operations, searching for and identifying new technologies, assessing the feasibility of and applying new technologies, and employing talented engineers in new technical areas (Danneels, 2008, 2012, 2016).

This study is motivated to examine the association between management innovation with the two organisational dynamic capabilities, strategic flexibility and R&D competence, and the subsequent impact of these capabilities on organisational performance. Sections 4.2.4 and 4.2.5 respectively discuss the nature of these association.

### **4.2.3 The association between management innovation and organisational performance**

Management innovation is systemic and intangible by nature, and it is difficult for other organisations to replicate it (Volberda et al., 2013; Mol & Birkinshaw, 2006, 2009; Teece, 2007; Hamel, 2006), making it a firm-specific resource which is critical for enhancing the efficiency and effectiveness of organisational processes (Volberda et al., 2013; Walker et al., 2011). Furthermore, management innovation enables organisations to achieve a long-term competitive advantage (Lin et al., 2017; Mol & Birkinshaw, 2006, 2009; Hamel, 2006).

Organisations are encouraged to use management innovation to reduce or close the performance gap i.e., the difference between what the organisation is achieving and what it could potentially achieve (Zaltman et al., 1973). Furthermore, the organisational behavioural theory (Cyert & March, 1963) suggests that managers address performance gap issues by introducing new practices (Mol & Birkinshaw, 2009). As such, the desire to narrow the performance gap drives organisations to introduce new management practices, processes, structures, or techniques (Damanpour et al., 2018; Mol & Birkinshaw, 2009; Zaltman et al., 1973).

However, there is sparse research examining the impact of management innovation on organisational performance (Khosravi et al., 2019) and the findings are inconsistent. For instance, in their empirical study, Mol and Birkinshaw (2009) reported that management innovation improves organisational performance through its positive association with growth in productivity. Alternatively, Walker et al. (2011) found that management innovation had no direct association with organisational performance in the public sector. However, Walker et al. (2011) found that performance management mediated the relationship between management innovation and performance. Similarly, while Nieves (2016) reported no relationship between

management innovation and financial performance, product innovation was identified as a mediator. Further, Magnier-Watanabe and Benton (2017) found that knowledge management initiatives mediated the effect of management innovation on organisational performance. Finally, Baird et al. (2019) found that only one of the Birkinshaw et al. (2008) four dimensions of management innovation, specifically management techniques, exhibited a positive association with organisational performance.

Despite the limited empirical evidence regarding the impact of management on organisational performance, there is ample evidence that management innovation has improved the performance of numerous organisations and guided their success. For example, Toyota, an automotive industry leader that successfully competes with western companies, has achieved a long-term competitive advantage due to its management innovations, including its Lean Production System, JIT inventory management system and target costing (Hamel, 2006; Mol & Birkinshaw, 2006; Fane et al., 2003). Likewise, other companies such as Ford through the introduction of Moving Assembly; Procter & Gamble (P&G) with its brand management; and GM with its innovative organisational structures, have improved organisational processes, in turn enhancing their performance and providing them with long-term competitive advantages (Hamel, 2006; Mol & Birkinshaw, 2006; Fane et al., 2003). Accordingly, it is argued that the extent of use of management innovation enhances organisational performance, leading to the development of the following hypothesis:

**Hypothesis 1:** Management innovation is positively significantly associated with organisational performance.

#### **4.2.4 The association between management innovation with strategic flexibility and R&D competence**

Management innovation involves the introduction of organisational changes, including using new practices to organise the work of management, new methods to distribute responsibilities and tasks among different levels of the organisation, and new management systems and techniques to manage and improve organisational processes and activities (Khosravi et al., 2019; Nieves, 2016; Volberda et al., 2013; Damanpour & Aravind, 2012; Birkinshaw et al., 2008). Therefore, management innovation adjusts the organisation to changes in the business environment by setting goals and plans and accumulating and allocating resources (Hamel, 2006), thereby increasing strategic flexibility by enabling organisations to respond to business threats and to effectively exploit existing and explore new business opportunities. For example, developing innovative structures to deal with the increasing complexity of operations is likely to enable a better flow of information and more effective resource allocation (Mol & Birkinshaw, 2008), thereby enabling organisations to respond rapidly to changes. In a similar way, implementing a newly designed structure that emphasises delegation and the decentralisation of authority in decision making is expected to enrich collaboration among organisational units and reduce the cost of coordination (Bock et al., 2012), thereby facilitating an organisations' ability to be strategically flexible. Furthermore, implementing new management practices and techniques enables organisations to develop various strategic options, thus increasing their strategic flexibility.

Based on this discussion, it is argued that using new management practices and techniques allows organisations to develop strategic flexibility so that they can respond rapidly to changes in the business environment. Thus, the following hypothesis is developed:

**Hypothesis 2:** Management innovation is positively significantly associated with strategic flexibility.

From the perspective of RBV theory, management innovation is a firm-specific resource that is used to enhance the efficiency and effectiveness of organisational processes (Volberda et al., 2013; Walker et al., 2011; Mol & Birkinshaw, 2006; Teece et al., 1997). In particular, management innovation facilitates the creation of an organisational environment where existing and new technological competencies are integrated and leveraged across organisational levels. Such environmental conditions enable the internal diffusion and understanding of new technologies within an organisation. In other words, management innovation augments the quality of intra-organisational cooperation and coordination, creating a coherent and self-enforcing social system in which new technology is adopted and utilised (Heij et al., 2020; Gunday et al., 2011; Damanpour & Evan, 1984). Moreover, implementing new management methods and systems improves organisational collaboration, communication, and information sharing, which advances organisational endeavours to enhance and facilitate the identification and implementation of new technologies, i.e., R&D competence. In addition, management innovation through the implementation of new human resource management practices (e.g., performance system) is likely to reinforce the ability of organisations to identify and explore new technological opportunities (Bantel, 1997). Consequently, organisations exert effort to employ management innovation in order to effectively explore, exploit and adopt emerging advancements (Chen et al., 2020). In line with this discussion, this study argues that using management innovation to a greater extent is expected to increase the level of R&D competence, and hence, the following hypothesis is developed:

**Hypothesis 3:** Management innovation is positively significantly associated with R&D competence.

#### **4.2.5 The association between strategic flexibility and R&D competence with organisational performance**

Strategic flexibility is a dynamic capability that reflects an organisation's adeptness at anticipating and adapting to the consequences of environmental changes by initiating strategic change (Zhou & Wu, 2010; Nadkarni & Narayanan, 2007). Organisations that are strategically flexible can continually adjust and respond to dynamic markets and achieve excellent performance (Worren et al., 2002). Strategic flexibility enables organisations to reallocate and alter existing resources and acquire additional ones to support the implementation of strategic options (Zhou & Wu, 2010). Therefore, strategic flexibility paves the way for organisations to exploit potential market opportunities and avoid threats, thereby improving organisational performance (Nuhu et al., 2019; Nadkarni & Herrmann, 2010; Barney, 1991). For instance, Toyota Corporation incorporates strategic flexibility into its production system and JIT inventory management system (Anand & Ward, 2004). Consequently, Toyota improved its capability to create an economic advantage and enhance customer responsiveness (Mol & Birkinshaw, 2008; Hamel, 2006; Anand & Ward, 2004).

Previous studies provide empirical supporting in regard to the positive influence of strategic flexibility on organisational performance (Nuhu et al., 2019; Xiu et al., 2017; Perez-Valls et al., 2016). Accordingly, it is argued that organisations with higher strategic flexibility will perform better, and therefore, the following hypothesis is developed:

**Hypothesis 4:** Strategic flexibility is positively significantly associated with organisational performance.

On the grounds of the dynamic capabilities perspective, an organisation's competitive advantage is also driven by its proficiency in pinpointing business opportunities and continually building new competencies (Teece, 2012; Easterby-Smith et al., 2009; Danneels,

2008; Wang & Ahmed, 2007; Teece et al., 1997). As an organisational dynamic capability, R&D competence is vital in enhancing the transfer and development of knowledge because it clears the way for organisational identification and the exploration of novel technologies (Wilden & Gudergan, 2015; Danneels, 2012; Stam & Wennberg, 2009; Griffith et al., 2004). Consequently, organisations become effective in venturing into existing technological environmental opportunities as well as recognising and exploring new opportunities (Danneels, 2008; Wind & Mahajan, 1997). Organisations will also be able to build new strategic assets that allow them to surpass the performance of their competitors in the long term (Danneels, 2012; Hitt et al., 1998; Teece et al., 1997). Additionally, R&D competence advances the creation of new technological capabilities, thereby facilitating the responsiveness to competitive market pressures in an aggressive manner (Lee, 2009). Ko and Liu (2017) found that R&D competence positively influences financial performance. Similarly, we expect that organisations with high levels of R&D competence will perform better, and accordingly, the following hypothesis is developed:

**Hypothesis 5:** R&D competence is positively significantly associated with organisational performance.

#### **4.2.6 The mediating role of strategic flexibility and R&D competence in the association between management innovation and organisational performance**

Based on the discussion in the preceding sections, it is hypothesised that management innovation will influence strategic flexibility and R&D competence, with strategic flexibility and R&D competence subsequently impacting organisational performance. Accordingly, this study argues that the effectiveness of management innovation in term of its impact on organisational performance transpires through an organisation's ability to be strategically flexible to business environmental changes and to be able to explore new technological



opportunities. Hence, it is expected that the association between management innovation and organisational performance will be mediated by strategic flexibility and R&D competence, and therefore, the following two hypotheses are examined:

**Hypothesis 6:** Strategic flexibility significantly mediates the association between management innovation and organisational performance.

**Hypothesis 7:** R&D competence significantly mediates the association between management innovation and organisational performance.

## **4.3 Method**

### **4.3.1 Data collection**

This study used the survey method to collect data. Questionnaires were mailed to middle-level managers working in organisations across Australia. The managers considered as respondents included managers working in finance, marketing, human resources, production and R&D departments. These managers were targeted as they were expected to possess the relevant knowledge regarding the operations of their organisations i.e., the knowledge that was necessary for them to complete the questionnaire. The contact information of the managers was obtained from the Dun and Bradstreet database. Initially, a total of 840 managers were randomly selected, with telephone calls made to confirm the managers' names, positions and addresses. Given erroneous telephone numbers, non-existent organisations and the unwillingness of some of the managers to participate in the research, 360 potential respondents were eliminated, resulting in a final sample of 480 middle-level managers.

To ensure a favourable response rate, the mail survey was designed using Dillman's (2007) tailored design method (TDM), which provides strategies for developing the format and style of the survey and the distribution processes. Despite this initiative, only 46 completed

questionnaires were returned after the first and follow-up mailouts, reflecting a response rate of 9.6%. Accordingly, to collect further data, an additional online survey, using the Qualtrics platform was conducted. This resulted in an additional 110 completed questionnaires. Hence, a total of 156 questionnaires were available for data analysis.

The responses from the mail survey were tested for non-response bias by comparing the mean scores of the independent and dependent variables for the early and late respondents (Roberts, 1999). Specifically, the scores from 19 questionnaires from the initial mailout were compared with the scores from the 27 questionnaires from the follow-up mailout using a one-way ANOVA test. With the exception of the financial performance variable, this comparison revealed no significant differences<sup>15</sup>. Further, the mean variable scores from the first 55 responses of the online questionnaire were compared with the mean scores from the last 55 responses, with the results indicating no significant differences.

In addition, the data that received from the mail and online surveys were tested for common method bias using Harman's (1967) single-factor test. The results indicated that the total variance explained by a single factor was (47.79%), which is below the 50% threshold recommended by Podsakoff et al. (2003).

## **4.3.2 Measurement of variables**

### **4.3.2.1 Management innovation**

This study applies Volberda et al. (2013) integrative framework of management innovation, which encompasses the four dimensions of management innovation suggested by Birkinshaw et al. (2008): new management practices, management processes, management structures and

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<sup>15</sup> This is considered to be a random result given no such problems were found in respect to the other measures.

management techniques. To measure the first three dimensions, the Vaccaro et al. (2012) six item scale, in which each dimension is measured using two items, was adapted. Specifically, respondents were asked to indicate their agreement with six statements that measured the extent to which the three dimensions of management innovation are implemented in their business units using a five-point Likert scale with anchors of “1 = *Strongly disagree*”, and “5 = *Strongly agree*”. The fourth dimension of management innovation (management techniques) was measured on the basis of the extent to which six contemporary innovative management initiatives (TQM, BSC, Activity-Based Management (ABM), Benchmarking, Environmental Management Accounting (EMA), and Value Chain Analysis (VCA)) were used in the respondents’ business units (see Appendix 4A). This measure, which uses a five-point scale with anchors of “1 = *Not at all*” and “5 = *To a great extent*”, is consistent with the approach used by Baird et al. (2019) and Su and Baird (2018).

Exploratory factor analysis (EFA) indicated that the six items used to measure new management practices, processes and structures loaded onto one factor (see Table 4.1). Hence, they were grouped under the label “*management innovation practices*”. The six contemporary innovative management initiatives used to measure new management techniques also loaded onto one factor and were therefore grouped under the label “*management innovation techniques*”. Confirmatory factor analysis (CFA) was conducted to assess the validity of these constructs (see Appendix 4B). For management innovation practices, the results revealed a good model fit (CMIN/DF = 2.109; GFI = 0.968; CFI = 0.981; RMSEA = 0.085) with a Cronbach alpha score of 0.869, which exceeds the recommended threshold of 0.70 (Nunnally, 1978). Therefore, the extent to which management innovation practices are implemented was measured on the basis of the average score of the six items. The management innovation techniques measure also exhibited a good model fit (CMIN/DF = 1.614; GFI = 0.973; CFI =

0.990; RMSEA = 0.063) with a Cronbach's alpha score of 0.890. Therefore, the degree to which management innovation techniques were adopted was measured on the basis of the average score of the six contemporary innovative management initiatives.

**Table 4.1 Factor analysis of the management innovation measures**

Item	Factor	
	Management innovation techniques	Management innovation practices
1. Rules and procedures within our business unit are regularly renewed.	0.054	<b>0.699</b>
2. We regularly make changes to our employees' tasks and functions.	0.148	<b>0.801</b>
3. Our business unit regularly implements new management systems.	0.181	<b>0.832</b>
4. The policy with regard to employee compensation has been changed in the last three years.	0.266	<b>0.644</b>
5. The intra- and inter-departmental communication structure within our business unit is regularly restructured.	0.328	<b>0.756</b>
6. We continuously alter certain elements of the business unit's structure.	0.336	<b>0.723</b>
7. Total Quality Management	<b>0.622</b>	0.461
8. Balanced Scorecard	<b>0.793</b>	0.187
9. Activity Based Management	<b>0.829</b>	0.133
10. Benchmarking	<b>0.743</b>	0.216
11. Environmental Management Accounting	<b>0.796</b>	0.263
12. Value Chain Analysis	<b>0.826</b>	0.168

Extraction Method: Principal Component Analysis.  
Rotation Method: Varimax with Kaiser Normalisation.  
Rotation converged in 3 iterations.

#### **4.3.2.2 Organisational dynamic capabilities**

Strategic flexibility was measured using an adapted version of the Celuch et al. (2007) instrument, consisting of six items and using a seven-point scale with anchors of “1 = *Not at all*” and “7 = *To a great extent*”. The respondents were required to indicate the extent to which their business units had the ability to respond to six different strategic imperatives (see Appendix 4A). The results of the EFA showed that all of the six items loaded onto one factor. However, the results of the CFA (see Appendix 4B) indicated that item 1 (‘resource reallocation needs’) had a low factor loading and it was therefore removed. The measurement model of the remaining five items fitted the data well (CMIN/DF = 1.242; GFI = 0.991; CFI = 0.998; RMSEA = 0.040), while the Cronbach’s alpha score was 0.904. The extent of strategic flexibility was therefore measured as the average score of the five remaining items.

R&D competence was measured using an adapted version of Danneels’ (2008) instrument, which consists of six items ranked using a seven-point Likert scale with anchors of “1 = *Strongly disagree*”, and “7 = *Strongly agree*”. The respondents were asked to assess their business unit’s skills/capabilities in various areas, relative to their competitors. The EFA results indicated that all six items loaded onto one factor, and the subsequent CFA (see Appendix 4B) showed that the measurement model exhibited a good fit (CMIN/DF = 1.712; GFI = 0.977; CFI = 0.992; RMSEA = 0.068) with a Cronbach’s alpha score of 0.917. The extent of R&D competence was therefore measured as the average score of the six items.

#### **4.3.2.3 Organisational performance**

This study used an adapted version of Kaynak and Kara’s (2004) six item instrument to measure organisational performance (see Appendix 4A). The respondents were required to indicate the extent to which they agreed that the six statements reflect the performance of their

business units using a five-point Likert scale with anchors of “1 = *Strongly disagree*” and “5 = *Strongly agree*”. The results of the EFA revealed two factors that accounted for 74.15% of the total variance. The first factor consisted of three items that reflected financial measures and was therefore labelled “*financial performance*”. The second factor also constituted three items, which reflected non-financial measures and hence, was labelled “*non-financial performance*”. Consequently, as there were only three items for each dimension, CFA could not be performed. However, both dimensions were reliable as the Cronbach’s alpha scores (0.867 and 0.758) exceeded the recommended cut-off of 0.70 (Nunnally, 1978).

## **4.4 Results**

### **4.4.1 Descriptive statistics**

The descriptive statistics are presented in Table 4.2. The mean scores of all the variables exceed the mid-point of the range. The mean scores for the management innovation dimensions are moderate and show that the extent of use of management innovation practices is higher than the extent of use of management innovation techniques. The mean score for non-financial performance is slightly higher than that of financial performance, and the extent of both strategic flexibility and R&D competence is relatively moderate.

**Table 4.2 Descriptive statistics**

Variables	<i>N</i>	Mean	Std. Dev.	Min. (theoretical)	Max. (theoretical)
Management innovation practices	156	3.40	0.86	1.00(1)	5.00(5)
Management innovation techniques	156	3.18	1.09	1.00(1)	5.00(5)
R&D competence	156	4.98	1.25	1.00(1)	7.00(7)
Strategic flexibility	156	4.77	1.39	1.00(1)	7.00(7)
Financial performance	156	3.69	0.85	1.00(1)	5.00(5)
Non-financial performance	156	3.87	0.78	1.00(1)	5.00(5)

#### 4.4.2 Reliability and validity

Internal consistency reliability was tested by calculating the Cronbach's alpha and composite reliability scores. Table 4.3 shows that the composite reliability scores range from 0.76 to 0.92, which exceeds the recommended score of 0.70 (Bagozzi & Yi, 1988). The Cronbach's alpha values range from 0.76 to 0.92, and therefore also exceed the recommended cut-off score of 0.70 (Nunnally, 1978).

**Table 4.3 Results of the average variance extracted, composite reliability and Cronbach's alpha**

Variable	AVE	Composite reliability	Cronbach's alpha
Management innovation practices	0.512	0.861	0.869
Management innovation techniques	0.564	0.886	0.890
R&D competence	0.644	0.915	0.917
Strategic flexibility	0.661	0.907	0.904
Financial Performance	0.695	0.872	0.867
Non-Financial Performance	0.518	0.762	0.758

The average variance extracted (AVE) score for each variable were calculated to evaluate convergent validity (Table 4.2). The AVE scores all exceed the recommended threshold of 0.50, suggesting that the data satisfies the requirements for convergent validity. In addition,

discriminant validity is assured as the square root of each construct's AVE score exceeds their correlation with the other constructs (see Table 4.4) (Fornell & Larcker, 1981).

**Table 4.4 The square root of the average variance extracted scores and the correlations between constructs**

Variables	1	2	3	4	5	6
1. Management innovation techniques	<b>0.75</b>					
2. Management innovation practices	0.55	<b>0.72</b>				
3. Strategic flexibility	0.46	0.41	<b>0.81</b>			
4. R&D competence	0.53	0.46	0.68	<b>0.80</b>		
5. Financial performance	0.39	0.38	0.50	0.45	<b>0.83</b>	
6. Non-financial performance	0.26	0.30	0.57	0.58	0.54	<b>0.72</b>

*Note:* The diagonal scores in bold represent the square root of AVE

#### 4.4.3 Structural equation modelling

Structural equation modelling (SEM) was run in AMOS (version 25) to test the associations between management innovation (practices and techniques), the organisational dynamic capabilities (strategic flexibility and R&D competence) and organisational performance (financial and non-financial). Following Anderson and Gerbing (1988), non-significant paths were excluded from the model until the remaining significant paths exhibited a good fit. As shown in Table 4.5 and Figure 4.2, the results in respect to the fit indices reflect a good model fit (CMIN/DF = 1.700, GFI = 0.986, AGFI = 0.925, CFI = 0.992, RMSEA = 0.067). The association between management innovation with organisational dynamic capabilities

The results in Table 4.5 and Figure 4.2 reveal a significant positive association between both dimensions of management innovation, practices and techniques, with the two organisational dynamic capabilities, strategic flexibility and R&D competence. Specifically, management innovation practices ( $\beta = 0.221$ ,  $p = 0.008$ ) and management innovation techniques ( $\beta = 0.335$ ,  $p = 0.000$ ) are significantly positively associated with strategic flexibility, thereby supporting



*Hypothesis 2.* Further, management innovation practices ( $\beta = 0.234$ ,  $p = 0.003$ ) and management innovation techniques ( $\beta = 0.401$ ,  $p = 0.000$ ) are significantly positively associated with R&D competence, thereby supporting *Hypothesis 3*.

**Table 4.5 Results of the path analysis of the associations between management innovation, organisational dynamic capabilities, and organisational performance**

Regression path	Path coefficient *	SE	t-value	P
Management innovation practices → Strategic flexibility	0.221	0.136	2.634	0.008
Management innovation techniques → Strategic flexibility	0.335	0.108	3.993	0.000
Management innovation practices → R&D competence	0.234	0.116	2.952	0.003
Management innovation techniques → R&D competence	0.401	0.091	5.054	0.000
Strategic flexibility → Financial performance	0.386	0.046	5.150	0.000
Strategic flexibility → Non-financial performance	0.347	0.046	4.181	0.000
R&D competence → Non-financial performance	0.334	0.050	4.159	0.000
Management innovation techniques → Financial performance	0.241	0.056	3.372	0.000
Goodness-of-fit indices: CMIN/DF = 1.700, GFI = 0.986, AGFI = 0.925, CFI = 0.992, RMSEA = 0.067				

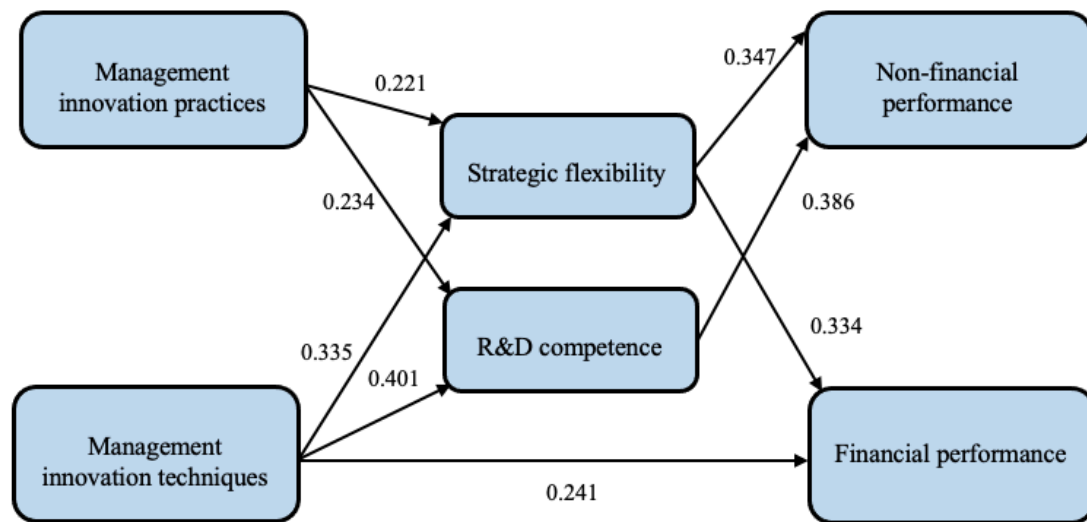
\* Standardized regression weights

#### **4.4.3.1 The association between organisational dynamic capabilities and organisational performance**

As shown in Table 4.5 and Figure 4.2, there is a significant positive association between the two organisational dynamic capabilities, strategic flexibility and R&D competence, with organisational performance. Specifically, strategic flexibility was found to be positively associated with both financial performance ( $\beta = 0.386$ ,  $p = 0.000$ ) and non-financial performance ( $\beta = 0.347$ ,  $p = 0.000$ ), thereby providing support for *Hypothesis 4*. However, while there was a significant positive association between R&D competence and non-financial

performance ( $\beta = 0.334$ ,  $p = 0.000$ ), R&D competence was not associated with financial performance. Hence, *Hypothesis 5* is partially supported.

**Figure 4.2 The results of the SEM**



#### **4.4.3.2 The mediating effect of organisational dynamic capabilities in the association between management innovation and organisational performance**

Regarding the direct impact of management innovation on organisational performance, a positive significant association was found between management innovation techniques and financial performance ( $\beta = 0.241$ ,  $p = 0.000$ ), while no association was identified with non-financial performance. In addition, no significant association was found between management innovation practices with either financial performance or non-financial performance. Therefore, partial support is provided for *Hypothesis 1*. Based on these results, the impact of management innovation techniques on financial performance is exerted both directly and indirectly through strategic flexibility, while the impact on non-financial performance is

indirect through both strategic flexibility and R&D competence. Further, the impact of management innovation practices on financial performance only occurs indirectly through strategic flexibility, while the impact on non-financial performance occurs indirectly through both strategic flexibility and R&D competence.

Bootstrapped regression analysis with bias-corrected confidence intervals method was performed to assess these mediating relationships (MacKinnon et al., 2002), with the results presented in Table 4.6. First, the results in Panel “A” show that strategic flexibility mediates the association between management innovation practices and management innovation techniques with both financial and non-financial performance, as the confidence interval of the lower bounds (LB) and upper bounds (UB) do not cross zero at the level of 95 per cent. Therefore, *Hypothesis 6* is supported.

**Table 4.6 Bootstrapped regression analysis of the mediating effect of strategic flexibility and R&D competence in the association between management innovation and organisational performance**

	Financial performance			Non-financial performance		
	LB (95% CI)	UB (95% CI)	P-value	LB (95% CI)	UB (95% CI)	P-value
<i>Panel A: Strategic flexibility</i>						
Management innovation practices	0.021	0.197	0.008	0.028	0.248	0.010
Management innovation techniques	0.056	0.250	0.000	0.088	0.311	0.000
<i>Panel B: R&amp;D competence</i>						
Management innovation practices	-	-	-	0.018	0.282	0.025
Management innovation techniques	-	-	-	0.126	0.366	0.000

**Notes:** LB = Lower Bounds; UB = Upper Bounds; CI = Confidence interval

Secondly, the results in Panel “B” show that R&D competence mediates the relationships between management innovation practices and management innovation techniques with non-financial performance. Given that R&D is not associated with financial performance, it does not mediate the association between either management innovation practices or techniques with financial performance. Therefore, *Hypothesis 7* is partially supported.

## **4.5 Discussion and conclusion**

### **4.5.1 Discussion**

This study aimed to contribute to the literature examining the effectiveness of management innovation by providing an empirical insight into the mediating role of organisational dynamic capabilities, strategic flexibility and R&D competence, in the association between management innovation and organisational performance. The findings reveal that the association between management innovation practices and financial performance is fully mediated by strategic flexibility, while the association with non-financial performance is fully mediated by both strategic flexibility and R&D competence. Further, the association between management innovation techniques and financial performance is partially mediated by strategic flexibility, while its association with non-financial performance is fully mediated by both strategic flexibility and R&D competence. These findings provide an empirical insight into the crucial role of organisational dynamic capabilities in facilitating the effectiveness of management innovation, in respect to the impact on organisational performance.

Further, by highlighting the mediating role of organisational dynamic capabilities, these findings extend previous literature that has demonstrated the importance of the role of organisational dynamic capabilities for organisational performance (Mu et al., 2018; Ko & Liu, 2017; Chen et al., 2017; Danneels, 2012; Celuch & Murphy, 2010; Nadkarni & Narayanan,

2007; Teece et al., 1997). In particular, it was found that strategic flexibility exhibits a significant positive influence on financial and non-financial performance, while R&D competence positively influences non-financial performance. Therefore, it is crucial for managers to enhance their organisations' strategic flexibility and R&D competence due to their valuable contribution in enhancing organisational performance. Specifically, organisations should enhance their ability to effectively respond to changing environmental conditions and technological advancements and effectively take advantage of emerging market opportunities and counter market threats (Nuhu et al., 2019; Celuch & Murphy, 2010; Nadkarni & Herrmann, 2010; Barney, 1991). Furthermore, to carry out technological transformations that effectively improve non-financial performance, organisations need to identify and explore opportunities to apply new technologies (Danneels, 2008, 2012, 2016).

Given that organisational dynamic capabilities are important for enhancing organisational performance, this study examines the role of management innovation as an antecedent which enhances organisational dynamic capabilities. Specifically, the findings indicate that management innovation practices and techniques exhibit positive effects on strategic flexibility and R&D competence. This confirms the uniqueness of management innovation as a firm-specific resource, the effectiveness of which is reinforced through organisational dynamic capabilities (Volberda et al., 2013; Mol & Birkinshaw, 2009; Teece, 2007; Hamel, 2006). In particular, it was revealed that the greater extent of use of management innovation practices (i.e., with respect to rules and procedures, employees' tasks and functions, management systems and performance assessments, and new management structures) and management innovation techniques, with respect to the implementation of the six management techniques (i.e., TQM, BSC, ABM, Benchmarking, EMA, and VCA), enhances the ability of organisations

to be strategically flexible and to be effective in exploring new technologies (i.e., R&D competence).

Finally, the extent of use of management innovation techniques was found to exhibit a direct positive impact on financial performance. Specifically, the greater use of management techniques enhances financial performance. Such findings are consistent with Baird et al. (2019) who found that management innovation techniques were directly associated with performance, and previous literature that has advocated the importance of management innovation for enhancing performance (Nieves, 2016; Walker et al., 2011; Mol & Birkinshaw, 2009). However, although no direct associations were identified between management innovation practices and either financial or non-financial performances, management innovation practices can still enhance financial and non-financial performances through their impact on strategic flexibility and R&D competence. Therefore, managers should also consider using management innovation practices to a greater extent.

Despite the absence of a direct association between management innovation practices and management innovation techniques with non-financial performance, previous literature has claimed that the extent of use of management innovation can improve other objectives other than financial performance such as reputation and legitimacy, employee satisfaction, quality of work, and environmental performance (Volberda et al., 2013; Martin et al., 2012; Sapprasert & Clausen, 2012; Mol & Birkinshaw, 2006). Therefore, future research may further explore the impact of using management innovation on non-financial measures, and explore alternative mediators or moderators (Khosravi et al., 2019).

### 4.5.2 Conclusion

The findings of this study present several theoretical contributions and practical implications. First, the findings highlight the important role of dynamic organisational capabilities as mediators of the association between management innovation and organisational performance. Specifically, the findings suggest that while management innovation techniques exhibit a direct positive influence on financial performance, the impact on non-financial performance occurs indirectly through strategic flexibility and R&D competence. Furthermore, the influence of management innovation practices on both financial and non-financial performances is fully mediated by strategic flexibility and R&D competence. For managers, these findings suggest that when evaluating decisions regarding the effectiveness and outcomes of management innovations, the role of organisational dynamic capabilities, particularly strategic flexibility and R&D competence, should be taken into consideration. From a theoretical perspective, future research on the effectiveness of management innovation should consider the mediating role of organisational dynamic capabilities. Such studies could examine how different levels of organisational dynamic capabilities interact to enhance the effectiveness of management innovation in terms of its impact on organisational performance (Khosravi et al., 2019; Walker et al., 2011). Furthermore, future studies may also look to identify additional antecedents that can enhance strategic flexibility and R&D competence, and thereby subsequently enhance their impact on organisational performance.

Secondly, the findings extend previous literature on the effectiveness of management innovation. In particular, the findings highlight the crucial role of management innovation in enhancing dynamic organisational capabilities. The positive influences of both dimensions of management innovation (practices and techniques) on strategic flexibility and R&D competence highlights the importance of implementing new management procedures and roles,

new employees' tasks and functions, and new management systems and structures (i.e., management innovation practices), and adopting the six identified management techniques.

Accordingly, from a practical perspective, managers should look for new opportunities to alter the way they manage their organisations to increase their extent of management innovation, thereby enhancing their dynamic organisational capabilities (i.e., strategic flexibility and R&D competence) and enhancing organisational performance.

#### **4.6 Limitations and recommendations for future research**

The findings of this study are subject to the normal limitations associated with the use of the survey method, including poor response rates, social desirability bias, and common method bias. Despite these limitations, the overall findings illuminate the theoretical and practical issues relevant to the association between management innovation and organisational performance. However, given that this study used cross-sectional data, the lack of direct associations between management innovation and organisational performance might be attributed to the timeframe required for the impact of management innovation to take effect on performance. Therefore, future research should conduct studies using longitudinal data to comprehensively investigate this association. Future studies may also conduct a more detailed investigation into the influence of specific management techniques or practices on strategic flexibility and R&D competence. Finally, future research might further investigate how the influence of management innovation on organisational performance transpires through other organisational dynamic capabilities (i.e., additional mediators).



## References

- Akgün, A. E., Ince, H., Imamoglu, S. Z., Keskin, H., & Kocoglu, İ. (2014). The mediator role of learning capability and business innovativeness between total quality management and financial performance. *International Journal of Production Research*, 52(3), 888–901.
- Anand, G., & Ward, P. T. (2004). Fit, flexibility and performance in manufacturing: coping with dynamic environments. *Production and Operations Management*, 13(4), 369–385.
- Anderson, J., & Gerbing, D. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, 103(3), 411–423.
- Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science*, 16(1), 74–94.
- Baird, K., Su, S., & Munir, R. (2019). Levers of control, management innovation and organisational performance. *Pacific Accounting Review*, 31(3), 358–375.
- Bantel, K. A. (1997). Performance in adolescent, technology-based firms: Product strategy, implementation, and synergy. *The Journal of High Technology Management Research*, 8(2), 243–262.
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99–120.
- Barney, J. (1996). The resource-based theory of the firm. *Organization Science*, 7(5), 469.
- Birkinshaw, J., Hamel, G., & Mol, M. (2008). Management innovation. *Academy of Management Review*, 33(4), 825–845.
- Birkinshaw, J., & Mol, M. (2006). How management innovation happens. *MIT Sloan Management Review*, 47(4), 81–88.
- Bock, A., Opsahl, T., George, G., & Gann, D. (2012). The effects of culture and structure on strategic flexibility during business model innovation. *Journal of Management Studies*, 49(2), 279–305.
- Brozovic, D. (2018). Strategic flexibility: A review of the literature. *International Journal of Management Reviews*, 20(1), 3–31.

- Celuch, K., & Murphy, G. B. (2010). SME Internet use and strategic flexibility: the moderating effect of IT market orientation. *Journal of Marketing Management*, 26(1–2), 131–145.
- Celuch, K., Murphy, G. B., & Callaway, S. K. (2007). More bang for your buck: Small firms and the importance of aligned information technology capabilities and strategic flexibility. *The Journal of High Technology Management Research*, 17(2), 187–197.
- Cepeda, G., & Vera, D. (2007). Dynamic capabilities and operational capabilities: A knowledge management perspective. *Journal of Business Research*, 60(5), 426–437.
- Chen, Q., Wang, C.-H., & Huang, S.-Z. (2020). Effects of organizational innovation and technological innovation capabilities on firm performance: evidence from firms in China's Pearl River Delta. *Asia Pacific Business Review*, 26(1), 72–96.
- Chen, Y., Wang, Y., Nevo, S., Benitez, J., & Kou, G. (2017). Improving strategic flexibility with information technologies: insights for firm performance in an emerging economy. *Journal of Information Technology*, 32(1), 10–25.
- Chung, H. F. L., Wang, C. L., Huang, P., & Yang, Z. (2016). Organizational capabilities and business performance: When and how does the dark side of managerial ties matter? *Industrial Marketing Management*, 55, 70–82.
- Collis, D. J. (1994). Research note: how valuable are organizational capabilities? *Strategic Management Journal*, 15(S1), 143–152.
- Cyert, R., & March, J. (1963). A behavioral theory of the firm. Englewood Cliffs, NJ.
- Damanpour, F. (2010). An integration of research findings of effects of firm size and market competition on product and process innovations. *British Journal of Management*, 21(4), 996–1010.
- Damanpour, F., & Aravind, D. (2012). Managerial innovation: Conceptions, processes, and antecedents. *Management and Organization Review*, 8(2), 423–454.
- Damanpour, F., & Evan, W. (1984). Organizational innovation and performance: the problem of "organizational lag". *Administrative Science Quarterly*, 29(3), 392–409.
- Damanpour, F., Sanchez-Henriquez, F., & Chiu, H. (2018). Internal and external sources and the adoption of innovations in organizations. *British Journal of Management*, 29(4), 712–730.

- Damanpour, F., Walker, R., & Avellaneda, C. (2009). Combinative effects of innovation types and organizational performance: A longitudinal study of service organizations. *Journal of Management Studies*, 46(4), 650–675.
- Danneels, E. (2002). The dynamics of product innovation and firm competences. *Strategic Management Journal*, 23(12), 1095–1121.
- Danneels, E. (2008). Organizational antecedents of second-order competences. *Strategic Management Journal*, 29(5), 519–543.
- Danneels, E. (2012). Second-order competences and Schumpeterian rents. *Strategic Entrepreneurship Journal*, 6(1), 42–58.
- Danneels, E. (2016). Survey measures of first- and second-order competences. *Strategic Management Journal*, 37(10), 2174–2188.
- Das, T., & Elango, B. (1995). Managing strategic flexibility: key to effective performance. *Journal of General Management*, 20(3), 60–75.
- Dillman, D. (2007). Mail and internet surveys: The tailored design method (2nd ed.). John Wiley & Sons Inc.
- Easterby-Smith, M., Lyles, M., & Peteraf, M. (2009). Dynamic capabilities: Current debates and future directions. *British Journal of Management*, 20, S1–S8.
- Eisenhardt, K. M., & Martin, J. A. (2000). Dynamic capabilities: what are they? *Strategic Management Journal*, 21(10/11), 1105–1121.
- Fane, G., Vaghefi, M., Deussen, C., & Woods, L. (2003). Competitive advantage the Toyota way. *Business Strategy Review*, 14(4), 51–60.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50.
- Gebauer, H. (2011). Exploring the contribution of management innovation to the evolution of dynamic capabilities. *Industrial Marketing Management*, 40(8), 1238–1250.
- Grewal, R., & Tansuhaj, P. (2001). Building organizational capabilities for managing economic crisis: The role of market orientation and strategic flexibility. *Journal of Marketing*, 65(2), 67–80.

- Griffith, R., Redding, S., & Reenen, J. Van. (2004). Mapping the two faces of R&D: Productivity growth in a panel of OECD industries. *Review of Economics and Statistics*, 86(4), 883–895.
- Gunday, G., Ulusoy, G., Kilic, K., & Alpkan, L. (2011). Effects of innovation types on firm performance. *International Journal of Production Economics*, 133(2), 662–676.
- Hamel, G. (2006). The why, what, and how of management innovation. *Harvard Business Review*, 84(2), 72–84.
- Hamel, G., & Breen, B. (2007). *The Future of Management*. Harvard Business Press.
- Harman, H. H. (1967). *Modern factor analysis*. University of Chicago.
- Heij, C., Volberda, H., Van den Bosch, F., & Hollen, R. (2020). How to leverage the impact of R&D on product innovation? The moderating effect of management innovation. *R&D Management*, 50(2), 277–294.
- Helfat, C., Finkelstein, S., Mitchell, W., Peteraf, M., Singh, H., Teece, D., & Winter, S. (2007). *Dynamic capabilities: Understanding strategic change in organizations*. John Wiley & Sons.
- Helfat, C., & Winter, S. (2011). Untangling dynamic and operational capabilities: Strategy for the (N) ever-changing world. *Strategic Management Journal*, 32(11), 1243–1250.
- Hitt, M., Keats, B., & DeMarie, S. (1998). Navigating in the new competitive landscape: Building strategic flexibility and competitive advantage in the 21st century. *The Academy of Management Executive*, 12(4), 22–42.
- Jansen, J., Van Den Bosch, F., & Volberda, H. (2006). Exploratory innovation, exploitative innovation, and performance: Effects of organizational antecedents and environmental moderators. *Management Science*, 52(11), 1661–1674.
- Johnson, J., Lee, R., Saini, A., & Grohmann, B. (2003). Market-focused strategic flexibility: Conceptual advances and an integrative model. *Journal of the Academy of Marketing Science*, 31(1), 74–89.
- Kaynak, E., & Kara, A. (2004). Market orientation and organizational performance: A comparison of industrial versus consumer companies in mainland China using market orientation scale (MARKOR). *Industrial Marketing Management*, 33(8), 743–753.

- Khosravi, P., Newton, C., & Rezvani, A. (2019). Management innovation: A systematic review and meta-analysis of past decades of research. *European Management Journal*, 37(6), 694–707.
- Ko, W. W., & Liu, G. (2017). Environmental strategy and competitive advantage: The role of small-and medium-sized enterprises' dynamic capabilities. *Business Strategy and the Environment*, 26(5), 584–596.
- Kogut, B., & Parkinson, D. (1998). Adoption of the multidivisional structure: Analyzing history from the start. *Industrial and Corporate Change*, 7(2), 249–273.
- Lee, C.-Y. (2009). Competition favors the prepared firm: Firms' R&D responses to competitive market pressure. *Research Policy*, 38(5), 861–870.
- Lin, H., Chen, M., & Su, J. (2017). How management innovations are successfully implemented? An organizational routines' perspective. *Journal of Organizational Change Management*, 30(4), 456–486.
- Lin, H., & Su, J. (2014). A case study on adoptive management innovation in China. *Journal of Organizational Change Management*, 27(1), 83–114.
- Liu, Y. (2013). Sustainable competitive advantage in turbulent business environments. *International Journal of Production Research*, 51(10), 2821–2841.
- MacKinnon, D., Lockwood, C., Hoffman, J., West, S., & Sheets, V. (2002). A comparison of methods to test mediation and other intervening variable effects. *Psychological Methods*, 7(1), 83–104.
- Magnier-Watanabe, R., & Benton, C. (2017). Management innovation and firm performance: The mediating effects of tacit and explicit knowledge. *Knowledge Management Research and Practice*, 15(3), 325–335.
- Martin, R., Muûls, M., De Preux, L. B., & Wagner, U. J. (2012). Anatomy of a paradox: Management practices, organizational structure and energy efficiency. *Journal of Environmental Economics and Management*, 63(2), 208–223.
- Mol, M., & Birkinshaw, J. (2006). Against the flow: Reaping the rewards of management innovation. *European Business Forum*, 27, 24–29.
- Mol, M., & Birkinshaw, J. (2008). Giant steps in management: Creating innovations that change the way we work. Harlow: Financial Times Prentice Hall.

- Mol, M., & Birkinshaw, J. (2009). The sources of management innovation: When firms introduce new management practices. *Journal of Business Research*, 62(12), 1269–1280.
- Montes, F. J. L., Moreno, A. R., & Fernández, L. M. M. (2004). Assessing the organizational climate and contractual relationship for perceptions of support for innovation. *International Journal of Manpower*, 25(2), 167–180.
- Mu, J., Bao, Y., Sekhon, T., Qi, J., & Love, E. (2018). Outside-in marketing capability and firm performance. *Industrial Marketing Management*, 75, 37–54.
- Nadkarni, S., & Herrmann, P. (2010). CEO personality, strategic flexibility, and firm performance: The case of the Indian business process outsourcing industry. *Academy of Management Journal*, 53(5), 1050–1073.
- Nadkarni, S., & Narayanan, V. K. (2007). Strategic schemas, strategic flexibility, and firm performance: The moderating role of industry clockspeed. *Strategic Management Journal*, 28(3), 243–270.
- Nieves, J. (2016). Outcomes of management innovation: An empirical analysis in the services industry. *European Management Review*, 13(2), 125–136.
- Nuhu, N. A., Baird, K., & Appuhami, R. (2019). The impact of management control systems on organisational change and performance in the public sector. *Journal of Accounting & Organizational Change*, 15(3), 473–495.
- Nunnally, J. (1978). Psychometric Theory. In *McGraw-Hill*.
- Pérez-Pérez, M., López-Fernández, M. C., & Obeso, M. (2019). Knowledge, renewal and flexibility: exploratory research in family firms. *Administrative Sciences*, 9, 1–18.
- Perez-Valls, M., Cespedes-Lorente, J., & Moreno-Garcia, J. (2016). Green practices and organizational design as sources of strategic flexibility and performance. *Business Strategy and the Environment*, 25(8), 529–544.
- Peteraf, M. (1993). The cornerstones of competitive advantage: A resource-based view. *Strategic Management Journal*, 14(3), 179–191.
- Pil, F., & MacDuffie, J. (1996). The adoption of high-involvement work practices. *Industrial Relations: A Journal of Economy and Society*, 35(3), 423–455.

- Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879–903.
- Roberts, E. (1999). In defence of the survey method: An illustration from a study of user information satisfaction. *Accounting and Finance*, 39(1), 53–77.
- Sanchez, R. (1995). Strategic flexibility in product competition. *Strategic Management Journal*, 16(S1), 135–159.
- Santos-Vijande, M. L., López-Sánchez, J. Á., & Trespalacios, J. A. (2012). How organizational learning affects a firm's flexibility, competitive strategy, and performance. *Journal of Business Research*, 65(8), 1079–1089.
- Saprasert, K., & Clausen, T. H. (2012). Organizational innovation and its effects. *Industrial and Corporate Change*, 21(5), 1283–1305.
- Shimizu, K., & Hitt, M. (2004). Strategic flexibility: Organizational preparedness to reverse ineffective strategic decisions. *The Academy of Management Executive*, 18(4), 44–59.
- Shin, S., & Aiken, K. D. (2012). The mediating role of marketing capability: evidence from Korean companies. *Asia Pacific Journal of Marketing and Logistics*, 24(4), 658–677.
- Stam, E., & Wennberg, K. (2009). The roles of R&D in new firm growth. *Small Business Economics*, 33(1), 77–89.
- Su, S., & Baird, K. (2018). The role of leaders in generating management innovation. *The International Journal of Human Resource Management*, 29(19), 2758–2779.
- Teece, D. (1980). The diffusion of an administrative innovation. *Management Science*, 26(5), 464–470.
- Teece, D. (2007). Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal*, 28(13), 1319–1350.
- Teece, D. (2012). Dynamic capabilities: Routines versus entrepreneurial action. *Journal of Management Studies*, 49(8), 1395–1401.

- Teece, D. (2014). The foundations of enterprise performance: Dynamic and ordinary capabilities in an (economic) theory of firms. *Academy of Management Perspectives*, 28(4), 328–352.
- Teece, D., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7), 509–533.
- Ulrich, D., & Lake, D. (1991). Organizational capability: Creating competitive advantage. *Academy of Management Perspectives*, 5(1), 77–92.
- Vaccaro, I., Jansen, J., Van Den Bosch, F., & Volberda, H. (2012). Management innovation and leadership: The moderating role of organizational size. *Journal of Management Studies*, 49(1), 28–51.
- Volberda, H., Van Den Bosch, F., & Heij, C. (2013). Management innovation: Management as fertile ground for innovation. *European Management Review*, 10(1), 1–15.
- Walker, R., Chen, J., & Aravind, D. (2015). Management innovation and firm performance: An integration of research findings. *European Management Journal*, 33(5), 407–422.
- Walker, R., Damanpour, F., & Devece, C. (2011). Management innovation and organizational performance: The mediating effect of performance management. *Journal of Public Administration Research and Theory*, 21(2), 367–386.
- Wang, C., & Ahmed, P. (2007). Dynamic capabilities: A review and research agenda. *International Journal of Management Reviews*, 9(1), 31–51.
- Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, 5(2), 171–180.
- Wilden, R., & Gudergan, S. P. (2015). The impact of dynamic capabilities on operational marketing and technological capabilities: investigating the role of environmental turbulence. *Journal of the Academy of Marketing Science*, 43(2), 181–199.
- Wind, J., & Mahajan, V. (1997). *Issues and opportunities in new product development: An introduction to the special issue*. 34(1), 1–12.
- Winter, S. (2003). Understanding dynamic capabilities. *Strategic Management Journal*, 24(10), 991–995.



- Worren, N., Moore, K., & Cardona, P. (2002). Modularity, strategic flexibility, and firm performance: a study of the home appliance industry. *Strategic Management Journal*, 23(12), 1123–1140.
- Xiu, L., Liang, X., Chen, Z., & Xu, W. (2017). Strategic flexibility, innovative HR practices, and firm performance. *Personnel Review*, 46(7), 1335–1357.
- Young-Ybarra, C., & Wiersema, M. (1999). Strategic flexibility in information technology alliances: The influence of transaction cost economics and social exchange theory. *Organization Science*, 10(4), 439–459.
- Zahra, S., Sapienza, H., & Davidsson, P. (2006). Entrepreneurship and dynamic capabilities: A review, model and research agenda. *Journal of Management Studies*, 43(4), 917–955.
- Zaltman, G., Duncan, R., & Holbek, J. (1973). *Innovations and organizations*. New York; Toronto: Wiley.
- Zhou, K., & Wu, F. (2010). Technological capability, strategic flexibility, and product innovation. *Strategic Management Journal*, 31(5), 547–561.

## **Appendix 4A: Questionnaire items**

### **Management innovation**

#### *Managerial innovation practices*

The six items of this scale were adapted from Vaccaro et al. (2012).

1. Rules and procedures within our organisation are regularly renewed.
2. We regularly make changes to our employees' tasks and functions.
3. Our organisation regularly implements new management systems.
4. The policy with regard to employee compensation has been changed in the last three years.
5. The intra- and inter-departmental communication structure within our organisation is regularly restructured.
6. We continuously alter certain elements of the organisational structure.

#### *Managerial innovation techniques*

The six items of this scale were adapted from Su and Baird (2018).

1. Total Quality Management
2. Balanced Scorecard
3. Activity-Based Management
4. Benchmarking
5. Environmental Management Accounting
6. Value Chain Analysis

### **Strategic flexibility**

The six items of this scale were adapted from Celuch et al. (2007).

1. Resource reallocation needs.
2. The need to modify business partnerships (e.g., strategic alliance, outsourcing relationship, etc.).
3. Emerging market opportunities.
4. Emerging market threats.
5. Changing environmental conditions.
6. Changing technology needs.

### **R&D competence**

The six items of this scale were adapted from Danneel (2008).

1. Setting up new types of production facilities, operations or work/task processes.
2. Applying technology we have not used before.
3. Assessing the feasibility of new technologies.
4. Recruiting talents in technical areas we are not familiar with.
5. Developing promising new technology.
6. Implementing new types of production or work/task processes.

### **Organisational performance**

The six items of this instrument were adapted from Kaynak and Kara (2004).

1. Profit goals have been achieved.
2. Sales goals have been achieved.
3. Return on investment goals have been achieved.
4. Our product(s)/service(s) are of a higher quality than that of our competitors.
5. We have a higher customer retention rate than our competitors.
6. We have a lower employee turnover rate than our competitors.

## Appendix 4B: CFA statistics

### Management innovation

Constructs and items	Factor loading	t-value	SE	Cronbach alpha
<i>Management innovation practices</i>				0.869
1. Rules and procedures within our organisation are regularly renewed.	0.627	NA	NA	
2. We regularly make changes to our employees' tasks and functions.	0.792	7.661	0.167	
3. Our organisation regularly implements new management systems.	0.825	7.836	0.180	
4. The policy with regard to employee compensation has been changed in the last three years.	0.597	6.203	0.173	
5. The intra- and inter-departmental communication structure within our organisation is regularly restructured.	0.716	7.114	0.170	
6. We continuously alter certain elements of the business unit's structure.	0.710	7.083	0.167	

**Goodness-of-fit:** CMIN/DF = 2.109; GFI = 0.968; AGFI = 0.903; CFI = 0.981; RMSEA = 0.085

<i>Management innovation techniques</i>				0.890
1. Total Quality Management	0.695	NA	NA	
2. Balanced Scorecard	0.789	8.727	0.131	
3. Activity Based Management	0.769	8.532	0.126	
4. Benchmarking	0.739	8.243	0.122	
5. Environmental Management Accounting	0.755	8.348	0.139	
6. Value Chain Analysis	0.754	8.341	0.136	

**Goodness-of-fit:** CMIN/DF = 1.614; GFI = 0.973; AGFI = 0.929; CFI = 0.990 RMSEA = 0.063

## Organisational dynamic capabilities

### Strategic flexibility

Construct and items	Factor loading	t-value	SE	Cronbach alpha
				0.904
The need to modify business partnerships (e.g., strategic alliance, outsourcing relationship, etc.).	0.809***	9.973	0.109	
Emerging market opportunities.	0.849***	11.553	0.098	
Emerging market threats.	0.902***	11.386	0.107	
Changing environmental conditions.	0.727***	11.214	0.084	
Changing technology needs.	0.767***	NA	NA	

**Goodness-of-fit:** CMIN/DF = 1.242; GFI = 0.991; AGFI = 0.953; CFI = 0.998; RMSEA = 0.040

### R&D competence

Construct and items	Factor loading	t-value	SE	Cronbach alpha
				0.917
1. Setting up new types of production facilities, operations or work/task processes.	0.765***	NA	NA	
2. Applying technology we have not used before.	0.753***	10.988	0.088	
3. Assessing the feasibility of new technologies.	0.867***	11.371	0.099	
4. Recruiting talents in technical areas we are not familiar with.	0.762***	9.802	0.103	
5. Developing promising new technology.	0.779***	10.054	0.122	
6. Implementing new types of production or work/task processes.	0.879***	11.541	0.106	

**Goodness-of-fit:** CMIN/DF = 1.712; GFI = 0.977; AGFI = 0.932; CFI = 0.992; RMSEA = 0.068

## **CHAPTER 5**

# **CONCLUSION**

Given the increase in business-related challenges, organisations are seeking to innovate the way they manage and control their organisational processes, operations and activities to improve or maintain organisational performance and competitiveness (Volberda et al., 2013; Vaccaro et al., 2012; Walker et al., 2011; Damanpour et al., 2009; Birkinshaw et al., 2008; Mol & Birkinshaw, 2006). Consequently, the focus on management innovation as a pathway to organisational success and/or survival has become a central phenomenon for both academics and practitioners. However, despite the importance of management innovation for organisations, there is a lack of comprehensive empirical analyses of the antecedents and effectiveness of management innovation (Khosravi et al., 2019; Walker et al., 2015; Volberda et al., 2013; Damanpour & Aravind, 2012; Vaccaro et al., 2012). Therefore, this study sought to examine the influence of various organisational (employee empowerment, organisational identification, and employee organisational commitment) and institutional factors (DiMaggio and Powell's (1983) coercive, mimetic, and normative pressures) on the extent of use of management innovation. In addition, the study examined the effectiveness of management innovation by examining the effect of management innovation on competitive advantage, organisational performance, and two organisational dynamic capabilities, namely, strategic flexibility and research and development (R&D) competence.

The remainder of this chapter is organised as follows. Section 5.1 outlines the key findings of the study. Section 5.2 discusses the contributions of the findings to the literature, and section 5.3 highlights the practical implications of the findings. Finally, section 5.4 discusses the limitations of the study and presents recommendations for future research.

## **5.1 Summary of the key findings**

### **5.1.1 The factors influencing management innovation**

The findings provide an empirical insight into the organisational and institutional antecedents of management innovation. Specifically, the findings provide an empirical insight into the influence of employee empowerment, organisational identification, employee organisational commitment, and institutional pressures, on management innovation with the findings summarised in Table 5.1.

**Table 5.1 Summary of the key findings regarding the factors influencing the extent of use of management innovation**

Antecedents	Influence on the extent of use of management innovation
Employee empowerment	➤ Increases the extent of use of management innovation in respect to both management practices and techniques.
Organisational identification	➤ Increases the extent of use of management innovation in respect to the use of management techniques.
	➤ Mediates the association between employee empowerment and management innovation techniques.
Employee organisational commitment	➤ Increases the extent of use of management innovation in respect to the use of management practices.
	➤ Mediates the association between employee empowerment and management innovation practices.
	➤ Increases the extent of use of management innovation in respect to the use of both management practices and techniques.
Institutional pressures	➤ Promotes the use of management innovation in respect to the use of both management practices and techniques.
	➤ Pressures forced by the government and industry regulations reduce the extent of use of management innovation in respect to the use of management techniques.
	➤ Mimetic pressures neither promote or discourage the use of management innovation practices and techniques.
	➤ Promotes the extent of use of management innovation in respect to the use of both management practices and techniques.



In addition, the findings revealed that organisational identification (employee organisational involvement) mediates the association between employee empowerment and management innovation techniques (practices). Specifically, the greater the empowerment experienced by employees, the stronger their identification with organisations and, accordingly, the higher the probability of their increased extent of use of management innovation techniques. Further, the greater the empowerment experienced by employees, the stronger their commitment to their organisation, and therefore, the more likely that they will use management innovation practices to a higher extent. These findings highlight the role of employees in driving and promoting the use of management innovation.

In respect to the institutional factors, internal coercive pressures, external coercive pressures, and normative pressures were found to influence the extent of use of management innovation. In particular, internal coercive pressures and normative pressures were significantly positively associated with the extent of use of management innovation practices and techniques. Alternatively, external coercive pressures were found to be significantly negatively associated with the extent of use of management innovation techniques. Such outcomes are consistent with previous studies highlighting the importance of the institutional environment in explaining the motivation for using management innovation (dos Santos et al., 2020; Volberda, Van Den Bosch, & Mihalache, 2014; Walker et al., 2011; Birkinshaw et al., 2008; DiMaggio & Powell, 1983; Tolbert & Zucker, 1983).

### **5.1.2 The effectiveness of management innovation**

Table 5.2 summarises the findings in respect to the effectiveness of management innovation, specifically the impact on competitive advantage, organisational dynamic capabilities and organisational performance. First, the extent of use of management innovation practices and

techniques is significantly positively associated with competitive advantage, reinforcing the claims in the literature that management innovation is an important source of competitive advantage (Lin et al., 2016; Damanpour & Aravind, 2012; Mol & Birkinshaw, 2006, 2009; Hamel, 2006; Birkinshaw & Mol, 2006). The findings are also consistent with previous studies that report the positive effect of management innovation on organisational outcomes, such as improved organisational productivity (Mol & Birkinshaw, 2009), and enhanced learning capability and product innovation (Nieves, 2016).

**Table 5.2 Summary of the key findings regarding the effectiveness of management innovation**

Dimensions of management innovation	Impact of management innovation		
	Organisational dynamic capabilities	Organisational performance	Competitive advantage
Management innovation practices	➤ Facilitate the development of strategic flexibility and R&D competence.	➤ Enhance financial and non-financial performance indirectly through organisational dynamic capabilities i.e., strategic flexibility and R&D competence.	➤ Enhance competitive advantage for organisations.
Management innovation techniques	➤ Facilitate the development of strategic flexibility and R&D competence.	➤ Enhance financial performance. ➤ Enhance non-financial performance indirectly through organisational dynamic capabilities i.e., strategic flexibility and R&D competence.	➤ Enhance competitive advantage for organisations.

Secondly, the extent of use of management innovation practices and techniques is significantly positively associated with two organisational dynamic capabilities, strategic flexibility and R&D competence. This result indicates that using new management practices or techniques facilitates the strategic flexibility of organisations (i.e., their ability to respond to unexpected environmental changes) and their R&D competence (i.e., their ability to explore new technological opportunities). Hence, such findings highlight the uniqueness and importance of

management innovation as a firm-specific resource that influences organisational dynamic capabilities (Volberda et al., 2013; Mol & Birkinshaw, 2009; Birkinshaw et al., 2008; Teece, 2007; Hamel, 2006).

Finally, the impact of management innovation on organisational performance (financial and non-financial) is contingent on the development of strategic flexibility and R&D competence. In particular, the effect of management innovation practices and techniques on financial and non-financial performance is mediated by strategic flexibility and R&D competence (see Table 5.3). Specifically, strategic flexibility mediates the associations between management innovation practices with financial and non-financial performance, and the associations between management innovation techniques with financial and non-financial performance. Further, R&D competence mediates the relationship between management innovation practices and non-financial performance and the relationship between management innovation techniques and non-financial performance. These findings are consistent with previous studies that reported an indirect association between management innovation and organisational performance (Baird et al., 2019; Magnier-Watanabe & Benton, 2017; Nieves, 2016; Walker et al., 2011). Further, these findings are consistent with prior studies confirming the role of organisational dynamic capabilities in enhancing the performance of organisations (Nuhu et al., 2019; Mu et al., 2018; Ko & Liu, 2017; Chen et al., 2017; Akgün et al., 2014; Santos-Vijande et al., 2012; Shin & Aiken, 2012; Nadkarni & Narayanan, 2007).

In addition, the findings revealed a direct significant positive association between management innovation techniques and financial performance, which is consistent with Baird et al. (2019), who reported a direct positive association between the use of management innovation techniques and organisational performance. These findings further highlight the importance of

using management accounting techniques such as TQM, BSC, ABM, Benchmarking, EMA, and VCA as a means of enhancing organisational performance.

**Table 5.3 Summary of the key findings regarding the mediating role of organisational dynamic capabilities**

Organisational dynamic capabilities	Mediating effect	
	Association between management innovation and financial performance	Association between management innovation and non-financial performance
Strategic flexibility	➤ Fully mediates the association between management innovation practices and financial performance.	➤ Fully mediates the association between management innovation practices and non-financial performance.
	➤ Partially mediates the association between management innovation techniques and financial performance.	➤ Fully mediates the association between management innovation techniques and non-financial performance
R&D competence	➤ R&D is not associated with financial performance, and therefore, it does not mediate the association between management innovation (practices and techniques) with financial performance.	➤ Fully mediates the association between management innovation practices and non-financial performance.
		➤ Fully mediates the association between management innovation techniques and non-financial performance

## 5.2 Contributions to the literature

This thesis contributes to the management innovation, contingency-based and strategic management literature in several ways. First, the study expands the extant contingency-based and management innovation literature by examining the antecedents of management innovation and providing an empirical insight into the influence of organisational (employee empowerment, organisational identification, and employee organisational commitment) and institutional (coercive, and normative pressures) factors on the extent of use of management

innovation. In particular, the findings provide evidence of the positive role of employee empowerment, organisational identification, employee organisational commitment (involvement and attachment), internal coercive pressures and normative pressures in enhancing the extent of use of management innovation practices and techniques. Further, the findings provide evidence of the negative influence of external coercive pressures on the extent of use of management innovation techniques. Such findings are congruent with prior research which emphasises the importance of contingency factors in facilitating and enhancing the extent of use of management innovation (Baird et al., 2019; Heyden et al., 2018; Su & Baird, 2018; Nieves & Segarra-Ciprés, 2015; Mol & Birkinshaw, 2014; Černe et al., 2013; Hecker & Ganter, 2013; Vaccaro et al., 2012).

Secondly, the findings contribute to the scant management innovation literature examining the effectiveness of management innovation in respect to enhancing organisational performance. In particular, the study highlights the important mediating role of organisational dynamic capabilities (strategic flexibility and R&D competence) in the association between management innovation and organisational performance. Specifically, while in line with previous studies a direct association was found between management innovation techniques and financial performance, it was also found that the influence of management innovation on organisational performance transpires indirectly, due to the influence of management innovation on these organisational dynamic capabilities, which in turn exhibit a significant positive impact on performance. At the same time, such findings serve to extend the strategic management literature by providing an insight into the important role of strategic flexibility and R&D competence in directly contributing to organisational performance and mediating the association between management innovation (practices and techniques) and organisational performance (financial and non-financial).

Finally, the study also contributes to the strategic management literature examining the sources of competitive advantage by providing an empirical insight into the association between management innovation and competitive advantage. The findings here reveal that the extent of use of management innovation practices and techniques are both positively related to competitive advantage. These findings support the argument in prior research that management innovation is an important source of competitive advantage (Damanpour & Aravind, 2012; Mol & Birkinshaw, 2006, 2009; Birkinshaw et al., 2008; Teece, 2007; Hamel, 2006; Birkinshaw & Mol, 2006)

### **5.3 Practical implications**

Important implications for practice can be drawn from this study. The study accentuates the role of organisational and institutional factors in facilitating and enhancing the extent of use of management innovation in organisations. In respect to the organisational factors, the study highlights the important role of employee empowerment, organisational identification, and employee organisational commitment in enhancing the extent of use of management innovation (both practices and techniques). First, the study provides managers with an insight into the role of employee empowerment in enhancing the use of both management innovation practices and techniques. Accordingly, the finding imply that managers should empower their employees so as to promote the use of management innovation to a greater extent. In particular, managers are advised to delegate authority on making decisions and exercising control to their employees in order to enhance the extent of use of management innovation. They should also ensure that the collaboration of employees in the decision-making process is direct and implemented through formal rules and procedures. Further, they should also exchange vital information and knowledge with their employees to stimulate their innovative behaviour,

thereby clearing the way for the more active use of management innovation in managing their tasks.

Secondly, the study highlights the role of organisational identification in enhancing the extent of use of management innovation techniques. Therefore, managers need to enhance organisational identification with their employees or maintain desirable levels in order to enhance the extent of use of management innovation techniques. In particular, managers should ensure the congruence between an organisation's values and goals and those of employees, as a means of facilitating an increase in their extent of use of management innovation techniques. Finally, the study also provides an insight into the influence of employee organisational commitment on management innovation. Specifically, the findings suggest that managers should focus on attempting to increase the level of commitment of their employees in order to increase their extent of use of management innovation practices.

The findings suggest that implementing empowerment practices is one way in which organisations can enhance both organisational identification and employee commitment and subsequently increases the extent of use of management innovation. Hence, as previously discussed managers should attempt to enhance the empowerment of their employees. Given the positive influence of organisational identification and employee organisational commitment on the extent of use of management innovation, managers are also advised to consider focusing on other factors which may influence employees identification with their organisation and commitment to their organisation, such as organisational culture (Lee et al., 2015; Su et al., 2009; Lok et al., 2005; Lok & Crawford, 2001) and perceived organisational support (Edwards & Peccei, 2010; Su et al., 2009; Rhoades et al., 2001).

In respect to the institutional factors, the findings are useful for managers in making them aware of how various types of institutional pressure influence the extent of use of management innovation, both positively and negatively. Managers should be aware of their institutional environment and understand the nature of specific institutional pressures and how they affect their capability to use management innovation. Hence, managers need to continually scan their institutional environment to gain a greater understanding of how specific institutional pressures influence their need to implement management innovations, and how such pressures can be utilised by top management to influence employees' extent of use of management innovation. Specifically, managers should apply coercive pressures to their employees in order to encourage them to implement management innovation (practices and techniques) to a greater extent. For example, managers could renew their strategic plans frequently as this promotes the use of management innovation practice and techniques and/or apply direct pressure to engage in management innovation (i.e., internal coercive pressures). Managers should also be conscious of government and industry regulations (i.e., external coercive pressures), and how these regulations inhibit organisations from using specific management innovation techniques including TQM, BSC, ABM, Benchmarking, EMA and VCA. In addition, managers need to be aware of and monitor how new requirements for corporate governance and/or the issue of new accounting standards (i.e., normative pressures) exert a positive influence on the extent of use of management innovation. Similarly, managers should also be aware of how the compliance with international financial reporting and auditing standards and following the recommendations of professional bodies, experts and trade associations (i.e., normative pressures) exhibits a positive influence on the extent of use of management innovation (practices and techniques).



The study also provides practical insights into the positive impact of management innovation on organisational outcomes (competitive advantage and both financial and non-financial performance). Specifically, managers should advocate for the increased the extent of use of management innovation (both practices and techniques) to enhance their competitive advantage. Managers should also focus on using more management techniques to enhance their financial performance. In addition, the findings highlight the importance of using management innovation, both management innovation practices and techniques, in enhancing the capabilities of strategic flexibility and R&D competence. In particular, managers should use management innovation practice and techniques to a greater extent to enhance strategic flexibility and R&D competence, and subsequently enhance financial and non-financial performance. In addition, given strategic flexibility and R&D competence are important for the enhancement of organisational performance, managers are advised to consider other factors that may enhance these capabilities, and therefore, enhance organisational performance. For instance, evidence has shown that strategic flexibility is influenced by the availability of a variety of strategic options (Combe et al., 2012; Nadkarni & Narayanan, 2007; Sanchez, 1995, 1997), a suitable organisational culture (Hatum & Pettigrew, 2006; Hitt et al., 1998), organisational learning (Santos-Vijande et al., 2012), and human resource capabilities (Singh et al., 2013). In addition, the extent to which an organisation is willing to scarify its current resources to explore new opportunities, the extent of efforts to scan the business environment, and the availability of slack resources are found to enhance R&D competence (Danneels, 2008).

#### **5.4 Limitations and recommendations for future research**

This study is subject to several limitations. First, the findings may have been affected by the typical shortcomings associated with the mail survey method, which may influence the

generalisability of the findings. In particular, despite using Dillman's (2007) Tailored Designed Method (TDM), the study achieved a poor response rate of 9.6% for the mail survey. In addition, given that this study used a self-reported questionnaire, with only one participant from each targeted organisation (i.e., middle-level manager) required to complete the questionnaire, the findings are subject to potential social desirability and common method bias, which could have affected the accuracy of the findings. However, the data were tested using Harman's single factor test, with the results indicating that no single factor emerged to explain most of the variance (i.e., less than the recommended threshold of 50%) (Podsakoff et al., 2003). Finally, the analysis of the findings was based on cross-sectional data and therefore, the results cannot illuminate the causality relationships between the independent and dependent variables.

This study offers a number of future research avenues. First, researchers can strengthen the validity of the measurements used in this study and improve the generalisability of the findings by collecting data from respondents at different management levels. In addition, future research may address the issue regarding the use of cross-sectional data by adopting a longitudinal design for data collection, thereby enabling the derivation of detailed empirical evidence of causality. Using longitudinal data may also enable researchers to comprehensively expound on the contributions of management innovation use in respect to organisational performance and competitive advantage. Further, this would facilitate the distinction between the contribution of management innovation to short-term and long-term organisational performance (Khosravi et al., 2019). Future studies may also investigate the consequences of management innovation for organisational performance under different environmental conditions (Khosravi et al., 2019; Volberda et al., 2013). Future research may also examine the impact of management innovation on other outcomes, especially non-financial outcomes, and the impact on other types of innovation. For instance, previous studies have paid attention to the link between

management innovation with technological innovation, which one precedes the other, and whether their relationship is complementary (Khosravi et al., 2019; Volberda et al., 2013; Damanpour et al., 2009).

Secondly, as given the findings of this study were based on data collected from Australia, future studies can obtain data from different countries to further validate the study's research model. In particular, testing the proposed model of this study in the context of a developing country may provide a unique insight given the potential influence of several unique contextual factors such as national and organisational culture and economic systems. Further, future studies may examine other organisational drivers that may stimulate the use of management innovation. Future studies may also consider the impact of the potential interaction between different organisational drivers on management innovation. Finally, given this study examined the extent of use of management innovation at the business unit level, future research may explore the hypothesised relationships and the integration between different levels of management innovation across different levels of analysis including the business unit level and organisational level of analysis (Khosravi et al., 2019).

## REFERENCES

- Abrahamson, E. (1991). Managerial fads and fashions: The diffusion and rejection of innovations. *Academy of Management Review*, 16(3), 586–612.
- Abrahamson, E. (1996). Management fashion. *Academy of Management Review*, 21(1), 254–285.
- Abrahamson, E., & Bartner, L. R. (1990). When do bandwagon diffusions roll? How far do they go? And when do they roll backwards?: A computer simulation. *Academy of Management Best Paper Proceedings*, 155–159.
- Ahearne, M., Mathieu, J., & Rapp, A. (2005). To empower or not to empower your sales force? An empirical examination of the influence of leadership empowerment behavior on customer satisfaction and performance. *Journal of Applied Psychology*, 90(5), 945–955.
- Akgün, A. E., Ince, H., Imamoglu, S. Z., Keskin, H., & Kocoglu, İ. (2014). The mediator role of learning capability and business innovativeness between total quality management and financial performance. *International Journal of Production Research*, 52(3), 888–901.
- Anand, G., & Ward, P. T. (2004). Fit, flexibility and performance in manufacturing: coping with dynamic environments. *Production and Operations Management*, 13(4), 369–385.
- Anderson, J., & Gerbing, D. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, 103(3), 411–423.
- Ang, S., & Cummings, L. L. (1997). Strategic response to institutional influences on information systems outsourcing. *Organization Science*, 8(3), 235–256.
- Ansari, S., Fiss, P., & Zajac, E. (2010). Made to fit: How practices vary as they diffuse. *Academy of Management Review*, 35(1), 67–92.
- Ansari, S., Reinecke, J., & Spaan, A. (2014). How are practices made to vary? Managing practice adaptation in a multinational corporation. *Organization Studies*, 35(9), 1313–1341.
- Armbruster, H., Bikfalvi, A., Kinkel, S., & Lay, G. (2008). Organizational innovation: The challenge of measuring non-technical innovation in large-scale surveys. *Technovation*, 28(10), 644–657.

- Arneson, H., & Ekberg, K. (2006). Measuring empowerment in working life: a review. *Work*, 26(1), 37–46.
- Ashforth, B., Harrison, S., & Corley, K. (2008). Identification in organizations: An examination of four fundamental questions. *Journal of Management*, 34(3), 325–374.
- Ashforth, B., & Mael, F. (1989). Social identity theory and the organization. *Academy of Management Review*, 14(1), 20–39.
- Ax, C., & Bjørnenak, T. (2005). Bundling and diffusion of management accounting innovations—the case of the balanced scorecard in Sweden. *Management Accounting Research*, 16(1), 1–20.
- Ax, C., & Greve, J. (2017). Adoption of management accounting innovations: Organizational culture compatibility and perceived outcomes. *Management Accounting Research*, 34, 59–74.
- Babakus, E., Yavas, U., Karatepe, O., & Avci, T. (2003). The effect of management commitment to service quality on employees' affective and performance outcomes. *Journal of the Academy of Marketing Science*, 31(3), 272–286.
- Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science*, 16(1), 74–94.
- Baird, K., Su, S., & Munir, R. (2018). The relationship between the enabling use of controls, employee empowerment, and performance. *Personnel Review*, 47(1), 257–274.
- Baird, K., Su, S., & Munir, R. (2019). Levers of control, management innovation and organisational performance. *Pacific Accounting Review*, 31(3), 358–375.
- Baird, K., & Wang, H. (2010). Employee empowerment: Extent of adoption and influential factors. *Personnel Review*, 39(5), 574–599.
- Bantel, K. A. (1997). Performance in adolescent, technology-based firms: Product strategy, implementation, and synergy. *The Journal of High Technology Management Research*, 8(2), 243–262.
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99–120.
- Barney, J. (1996). The resource-based theory of the firm. *Organization Science*, 7(5), 469.

- Barreto, I., & Baden-Fuller, C. (2006). To conform or to perform? Mimetic behaviour, legitimacy-based groups and performance consequences. *Journal of Management Studies*, 43(7), 1559–1581.
- Bartels, J., Peters, O., de Jong, M., Pruyn, A., & van der Molen, M. (2010). Horizontal and vertical communication as determinants of professional and organisational identification. *Personnel Review*, 39(2), 210–226.
- Benders, J., Batenburg, R., & Van der Blonk, H. (2006). Sticking to standards; technical and other isomorphic pressures in deploying ERP-systems. *Information & Management*, 43(2), 194–203.
- Benders, J., & Van Veen, K. (2001). What's in a fashion? Interpretative viability and management fashions. *Organization*, 8(1), 33–53.
- Bhatnagar, J. (2012). Management of innovation: role of psychological empowerment, work engagement and turnover intention in the Indian context. *The International Journal of Human Resource Management*, 23(5), 928–951.
- Birkinshaw, J., Hamel, G., & Mol, M. (2008). Management innovation. *Academy of Management Review*, 33(4), 825–845.
- Birkinshaw, J., & Mol, M. (2006). How management innovation happens. *MIT Sloan Management Review*, 47(4), 81–88.
- Bock, A., Opsahl, T., George, G., & Gann, D. (2012). The effects of culture and structure on strategic flexibility during business model innovation. *Journal of Management Studies*, 49(2), 279–305.
- Bowen, D., & Lawler III, E. (2006). The empowerment of service workers: What, why, how, and when. *Managing Innovation and Change*, 33, 155–169.
- Bowonder, B., Dambal, A., Kumar, S., & Shirodkar, A. (2010). Innovation Strategies for Creating Competitive Advantage. *Research-Technology Management*, 53(3), 19–32.
- Braunscheidel, M., Hamister, J., Suresh, N., & Star, H. (2011). An institutional theory perspective on Six Sigma adoption. *International Journal of Operations & Production Management*, 31(4), 423–451.
- Brozovic, D. (2018). Strategic flexibility: A review of the literature. *International Journal of Management Reviews*, 20(1), 3–31.

- Cadwallader, S., Jarvis, C. B., Bitner, M. J., & Ostrom, A. (2010). Frontline employee motivation to participate in service innovation implementation. *Journal of the Academy of Marketing Science*, 38(2), 219–239.
- Callan, V. (1993). Individual and organizational strategies for coping with organizational change. *Work & Stress*, 7(1), 63–75.
- Camisón, C., & Villar-López, A. (2014). Organizational innovation as an enabler of technological innovation capabilities and firm performance. *Journal of Business Research*, 67(1), 2891–2902.
- Celuch, K., & Murphy, G. B. (2010). SME Internet use and strategic flexibility: the moderating effect of IT market orientation. *Journal of Marketing Management*, 26(1–2), 131–145.
- Celuch, K., Murphy, G. B., & Callaway, S. K. (2007). More bang for your buck: Small firms and the importance of aligned information technology capabilities and strategic flexibility. *The Journal of High Technology Management Research*, 17(2), 187–197.
- Cepeda, G., & Vera, D. (2007). Dynamic capabilities and operational capabilities: A knowledge management perspective. *Journal of Business Research*, 60(5), 426–437.
- Černe, M., Jaklič, M., & Škerlavaj, M. (2013). Management innovation in focus: The role of knowledge exchange, organizational size, and IT system development and utilization. *European Management Review*, 10(3), 153–166.
- Chen, Q., Wang, C.-H., & Huang, S.-Z. (2020). Effects of organizational innovation and technological innovation capabilities on firm performance: evidence from firms in China's Pearl River Delta. *Asia Pacific Business Review*, 26(1), 72–96.
- Chen, Y., Wang, Y., Nevo, S., Benitez, J., & Kou, G. (2017). Improving strategic flexibility with information technologies: insights for firm performance in an emerging economy. *Journal of Information Technology*, 32(1), 10–25.
- Chiwamit, P., Modell, S., & Scapens, R. (2017). Regulation and adaptation of management accounting innovations: The case of economic value added in Thai state-owned enterprises. *Management Accounting Research*, 37, 30–48.
- Cho, H., & Pucik, V. (2005). Relationship between innovativeness, quality, growth, profitability, and market value. *Strategic Management Journal*, 26(6), 555–575.

- Chong, V., & Eggleton, I. (2007). The impact of reliance on incentive-based compensation schemes, information asymmetry and organisational commitment on managerial performance. *Management Accounting Research*, 18(3), 312–342.
- Chung, H. F. L., Wang, C. L., Huang, P., & Yang, Z. (2016). Organizational capabilities and business performance: When and how does the dark side of managerial ties matter? *Industrial Marketing Management*, 55, 70–82.
- Clark, T. (2004). Strategy viewed from a management fashion perspective. *European Management Review*, 1(1), 105–111.
- Coelho, F., & Augusto, M. (2010). Job Characteristics and the Creativity of Frontline Service Employees. *Journal of Service Research*, 13(4), 426–438.
- Collis, D. J. (1994). Research note: how valuable are organizational capabilities? *Strategic Management Journal*, 15(S1), 143–152.
- Colwell, S., & Joshi, A. (2013). Corporate ecological responsiveness: Antecedent effects of institutional pressure and top management commitment and their impact on organizational performance. *Business Strategy and the Environment*, 22(2), 73–91.
- Combe, I., Rudd, J., Leeflang, P., & Greenley, G. (2012). Antecedents to strategic flexibility: Management cognition, firm resources and strategic options. *European Journal of Marketing*, 46(10), 1320–1339.
- Conger, J., & Kanungo, R. (1988). The empowerment process: Integrating theory and practice. *Academy of Management Review*, 13(3), 471–482.
- Cook, J., & Wall, T. (1980). New work attitude measures of trust, organizational commitment and personal need non-fulfilment. *Journal of Occupational Psychology*, 53(1), 39–52.
- Cooper, D., Ezzamel, M., & Qu, S. (2017). Popularizing a management accounting idea: The case of the balanced scorecard. *Contemporary Accounting Research*, 34(2), 991–1025.
- Crossan, M., & Apaydin, M. (2010). A Multi-Dimensional Framework of Organizational Innovation: A Systematic Review of the Literature. *Journal of Management Studies*, 47(6), 1154–1191.
- Cyert, R., & March, J. (1963). A behavioral theory of the firm. Englewood Cliffs, NJ.



- Damanpour, F. (1991). Organizational innovation: A meta-analysis af effects of determinants and moderators. *Academy of Management Journal*, 34(3), 555–590.
- Damanpour, F. (1996). Organizational complexity and innovation: developing and testing multiple contingency models. *Management Science*, 42(5), 693–716.
- Damanpour, F. (2010). An integration of research findings of effects of firm size and market competition on product and process innovations. *British Journal of Management*, 21(4), 996–1010.
- Damanpour, F. (2014). Footnotes to research on management innovation. *Organization Studies*, 35(9), 1265–1285.
- Damanpour, F., & Aravind, D. (2012). Managerial innovation: Conceptions, processes, and antecedents. *Management and Organization Review*, 8(2), 423–454.
- Damanpour, F., & Evan, W. (1984). Organizational innovation and performance: the problem of "organizational lag". *Administrative Science Quarterly*, 29(3), 392–409.
- Damanpour, F., Sanchez-Henriquez, F., & Chiu, H. (2018). Internal and external sources and the adoption of innovations in organizations. *British Journal of Management*, 29(4), 712–730.
- Damanpour, F., & Schneider, M. (2006). Phases of the adoption of innovation in organizations: effects of environment, organization and top managers. *British Journal of Management*, 17(3), 215–236.
- Damanpour, F., & Schneider, M. (2009). Characteristics of innovation and innovation adoption in public organizations: Assessing the role of managers. *Journal of Public Administration Research and Theory*, 19(3), 495–522.
- Damanpour, F., Walker, R., & Avellaneda, C. (2009). Combinative effects of innovation types and organizational performance: A longitudinal study of service organizations. *Journal of Management Studies*, 46(4), 650–675.
- Danneels, E. (2002). The dynamics of product innovation and firm competences. *Strategic Management Journal*, 23(12), 1095–1121.
- Danneels, E. (2008). Organizational antecedents of second-order competences. *Strategic Management Journal*, 29(5), 519–543.

- Danneels, E. (2012). Second-order competences and Schumpeterian rents. *Strategic Entrepreneurship Journal*, 6(1), 42–58.
- Danneels, E. (2016). Survey measures of first- and second-order competences. *Strategic Management Journal*, 37(10), 2174–2188.
- Darnall, N., Henriques, I., & Sadorsky, P. (2008). Do environmental management systems improve business performance in an international setting? *Journal of International Management*, 14(4), 364–376.
- Das, T., & Elango, B. (1995). Managing strategic flexibility: key to effective performance. *Journal of General Management*, 20(3), 60–75.
- de Jong, J., & Den Hartog, D. (2007). How leaders influence employees' innovative behaviour. *European Journal of Innovation Management*, 10(1), 41–64.
- Dent, J. F. (1996). Global competition: challenges for management accounting and control. *Management Accounting Research*, 7(2), 247–269.
- Dewettinck, K., & van Ameijde, M. (2011). Linking leadership empowerment behaviour to employee attitudes and behavioural intentions: Testing the mediating role of psychological empowerment. *Personnel Review*, 40(3), 284–305.
- Dillman, D. (2007). Mail and internet surveys: The tailored design method (2nd ed.). John Wiley & Sons Inc.
- DiMaggio, P., & Powell, W. (1983). The iron cage revisited: Collective rationality and institutional isomorphism in organizational fields. *American Sociological Review*, 48(2), 147–160.
- Donaldson, L. (2001). The contingency theory of organizations. Sage.
- dos Santos, M. G., Borini, F. M., Pereira, R. M., & Raziq, M. M. (2020). Institutional pressures and the diffusion of organisational innovation: Evidence from Brazilian firms. *Technology Analysis & Strategic Management*, 32(7), 869–880.
- Dutton, J., Dukerich, J., & Harquail, C. (1994). Organizational images and member identification. *Administrative Science Quarterly*, 39(2), 239–263.

- Dyer, J., & Singh, H. (1998). The relational view: Cooperative strategy and sources of interorganizational competitive advantage. *Academy of Management Review*, 23(4), 660–679.
- Easterby-Smith, M., Lyles, M., & Peteraf, M. (2009). Dynamic capabilities: Current debates and future directions. *British Journal of Management*, 20, S1–S8.
- Edwards, M. R., & Peccei, R. (2010). Perceived organizational support, organizational identification, and employee outcomes. *Journal of Personnel Psychology*, 9(1), 17–26.
- Eisenberger, R., Cummings, J., Armeli, S., & Lynch, P. (1997). Perceived organizational support, discretionary treatment, and job satisfaction. *Journal of Applied Psychology*, 82(5), 812–820.
- Eisenhardt, K. M., & Martin, J. A. (2000). Dynamic capabilities: what are they? *Strategic Management Journal*, 21(10/11), 1105–1121.
- Evangelista, R., & Vezzani, A. (2010). The economic impact of technological and organizational innovations. A firm-level analysis. *Research Policy*, 39(10), 1253–1263.
- Fane, G., Vaghefi, M., Deusen, C., & Woods, L. (2003). Competitive advantage the Toyota way. *Business Strategy Review*, 14(4), 51–60.
- Fernandez, S., & Moldogaziev, T. (2013). Employee empowerment, employee attitudes, and performance: Testing a causal model. *Public Administration Review*, 73(3), 490–506.
- Fernandez, S., & Pitts, D. (2011). Understanding Employee Motivation to Innovate: Evidence from Front Line Employees in United States Federal Agencies. *Australian Journal of Public Administration*, 70(2), 202–222.
- Fikru, M. (2014). International certification in developing countries: The role of internal and external institutional pressure. *Journal of Environmental Management*, 144, 286–296.
- Flynn, B., Schroeder, R., & Sakakibara, S. (1995). The impact of quality management practices on performance and competitive advantage. *Decision Sciences*, 26(5), 659–691.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50.
- Frumkin, P., & Galaskiewicz, J. (2004). Institutional isomorphism and public sector organizations. *Journal of Public Administration Research and Theory*, 14(3), 283–307.

- Gallego, J., Rubalcaba, L., & Hipp, C. (2012). Organizational innovation in small European firms: A multidimensional approach. *International Small Business Journal: Researching Entrepreneurship*, 31(5), 563–579.
- Ganter, A., & Hecker, A. (2013). Deciphering antecedents of organizational innovation. *Journal of Business Research*, 66(5), 575–584.
- Gautam, T., Van Dick, R., & Wagner, U. (2004). Organizational identification and organizational commitment: Distinct aspects of two related concepts. *Asian Journal of Social Psychology*, 7(3), 301–315.
- Gebauer, H. (2011). Exploring the contribution of management innovation to the evolution of dynamic capabilities. *Industrial Marketing Management*, 40(8), 1238–1250.
- Gondo, M., & Amis, J. (2013). Variations in practice adoption: The roles of conscious reflection and discourse. *Academy of Management Review*, 38(2), 229–247.
- Goodstein, J. (1994). Institutional pressures and strategic responsiveness: Employer involvement in work-family issues. *Academy of Management Journal*, 37(2), 350–382.
- Gosselin, M. (1997). The effect of strategy and organizational structure on the adoption and implementation of activity-based costing. *Accounting, Organizations and Society*, 22(2), 105–122.
- Granlund, M., & Lukka, K. (1998). It's a small world of management accounting practices. *Journal of Management Accounting Research*, 10, 153–179.
- Greasley, K., Bryman, A., Dainty, A., Price, A., Soetanto, R., & King, N. (2005). Employee perceptions of empowerment. *Employee Relations*, 27(4), 354–368.
- Greenwood, R., Suddaby, R., & Hinings, C. R. (2002). Theorizing change: The role of professional associations in the transformation of institutionalized fields. *Academy of Management Journal*, 45(1), 58–80.
- Grewal, R., & Tansuhaj, P. (2001). Building organizational capabilities for managing economic crisis: The role of market orientation and strategic flexibility. *Journal of Marketing*, 65(2), 67–80.
- Griffith, R., Redding, S., & Reenen, J. Van. (2004). Mapping the two faces of R&D: Productivity growth in a panel of OECD industries. *Review of Economics and Statistics*, 86(4), 883–895.

- Guler, I., Guillén, M., & Macpherson, J. M. (2002). Global competition, institutions, and the diffusion of organizational practices: The international spread of ISO 9000 quality certificates. *Administrative Science Quarterly*, 47(2), 207–232.
- Gunday, G., Ulusoy, G., Kilic, K., & Alpkan, L. (2011). Effects of innovation types on firm performance. *International Journal of Production Economics*, 133(2), 662–676.
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (1998). Multivariate data analysis (Vol. 5, Issue 3). Prentice hall Upper Saddle River, NJ.
- Hamel, G. (2006). The why, what, and how of management innovation. *Harvard Business Review*, 84(2), 72–84.
- Hamel, G., & Breen, B. (2007). *The Future of Management*. Harvard Business Press.
- Hammer, M., & Stanton, S. (1999). How process enterprises really work. *Harvard Business Review*, 77, 108–120.
- Harman, H. H. (1967). *Modern factor analysis*. University of Chicago.
- Harrison, E. F. (1995). Strategic planning maturities. *Management Decision*, 33(2), 48–55.
- Hartmann, A. (2006). The role of organizational culture in motivating innovative behaviour in construction firms. *Construction Innovation*, 6(3), 159–172.
- Hatun, A., & Pettigrew, A. M. (2006). Determinants of organizational flexibility: a study in an emerging economy. *British Journal of Management*, 17(2), 115–137.
- Haveman, H. A. (1993). Follow the leader: Mimetic isomorphism and entry into new markets. *Administrative Science Quarterly*, 38(4), 593–627.
- He, H., & Brown, A. D. (2013). Organizational identity and organizational identification: A review of the literature and suggestions for future research. *Group & Organization Management*, 38(1), 3–35.
- He, Z.-L., & Wong, P.-K. (2004). Exploration vs. Exploitation: An Empirical Test of the Ambidexterity Hypothesis. *Organization Science*, 15(4), 481–494.

- Hecker, A., & Ganter, A. (2013). The influence of product market competition on technological and management innovation: Firm-level evidence from a large-scale survey. *European Management Review*, 10(1), 17–33.
- Heij, C., Volberda, H., Van den Bosch, F., & Hollen, R. (2020). How to leverage the impact of R&D on product innovation? The moderating effect of management innovation. *R&D Management*, 50(2), 277–294.
- Helfat, C., Finkelstein, S., Mitchell, W., Peteraf, M., Singh, H., Teece, D., & Winter, S. (2007). *Dynamic capabilities: Understanding strategic change in organizations*. John Wiley & Sons.
- Helfat, C., & Winter, S. (2011). Untangling dynamic and operational capabilities: Strategy for the (N) ever-changing world. *Strategic Management Journal*, 32(11), 1243–1250.
- Heracleous, L. (1998). Strategic thinking or strategic planning? *Long Range Planning*, 31(3), 481–487.
- Heyden, M., Sidhu, J., & Volberda, H. (2018). The Conjoint Influence of Top and Middle Management Characteristics on Management Innovation. *Journal of Management*, 44(4), 1505–1529.
- Hitt, M., Keats, B., & DeMarie, S. (1998). Navigating in the new competitive landscape: Building strategic flexibility and competitive advantage in the 21st century. *The Academy of Management Executive*, 12(4), 22–42.
- Hollen, R., Van Den Bosch, F. A., & Volberda, H. (2014). The challenge of developing new meta-management practices of firms in meta-organizations. In *Behavioral Strategy: Emerging Perspectives* (pp. 105–127). IAP.
- Hooper, D., Coughlan, J., & Mullen, M. R. (2008). Structural equation modelling: Guidelines for determining model fit. *Electronic Journal of Business Research Methods*, 6(1), 53–60.
- Hopper, T., & Major, M. (2007). Extending institutional analysis through theoretical triangulation: regulation and activity-based costing in Portuguese telecommunications. *European Accounting Review*, 16(1), 59–97.
- Hu, L., & Bentler, P. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1–55.

- Huo, B., Han, Z., Zhao, X., Zhou, H., Wood, C., & Zhai, X. (2013). The impact of institutional pressures on supplier integration and financial performance: Evidence from China. *International Journal of Production Economics*, 146(1), 82–94.
- Iverson, R. (1996). Employee acceptance of organizational change: the role of organizational commitment. *International Journal of Human Resource Management*, 7(1), 122–149.
- Jafri, M. (2010). Organizational commitment and employee's innovative behavior: A study in retail sector. *Journal of Management Research*, 10(1), 62–68.
- Jansen, J., Van Den Bosch, F., & Volberda, H. (2006). Exploratory innovation, exploitative innovation, and performance: Effects of organizational antecedents and environmental moderators. *Management Science*, 52(11), 1661–1674.
- Janssen, O. (2003). Innovative behaviour and job involvement at the price of conflict and less satisfactory relations with co-workers. *Journal of Occupational and Organizational Psychology*, 76(3), 347–364.
- Janssen, O. (2004). The barrier effect of conflict with superiors in the relationship between employee empowerment and organizational commitment. *Work & Stress*, 18(1), 56–65.
- Jiang, J., & Liu, C.-W. (2015). High performance work systems and organizational effectiveness: The mediating role of social capital. *Human Resource Management Review*, 25(1), 126–137.
- John, C., Cannon, A., & Poudar, R. (2001). Change drivers in the new millennium: implications for manufacturing strategy research. *Journal of Operations Management*, 19(2), 143–160.
- Johnson, J., Lee, R., Saini, A., & Grohmann, B. (2003). Market-focused strategic flexibility: Conceptual advances and an integrative model. *Journal of the Academy of Marketing Science*, 31(1), 74–89.
- Joo, B.-K., & Shim, J. H. (2010). Psychological empowerment and organizational commitment: the moderating effect of organizational learning culture. *Human Resource Development International*, 13(4), 425–441.
- Jun, M., Cai, S., & Shin, H. (2006). TQM practice in maquiladora: Antecedents of employee satisfaction and loyalty. *Journal of Operations Management*, 24(6), 791–812.

- Junior, M. L., & Godinho Filho, M. (2010). Variations of the kanban system: Literature review and classification. *International Journal of Production Economics*, 125(1), 13–21.
- Kaplan, R. S., & Norton, D. P. (1992). The Balanced Scorecard--Measures That Drive Performance. *Harvard Business Review*, 70(1), 71–79.
- Kaplan, R. S., & Norton, D. P. (1996). *The Balanced Scorecard: Translating Strategy into Action*. Harvard Business School Press.
- Kaynak, E., & Kara, A. (2004). Market orientation and organizational performance: A comparison of industrial versus consumer companies in mainland China using market orientation scale (MARKOR). *Industrial Marketing Management*, 33(8), 743–753.
- Ketokivi, M. A., & Schroeder, R. G. (2004). Strategic, structural contingency and institutional explanations in the adoption of innovative manufacturing practices. *Journal of Operations Management*, 22(1), 63–89.
- Khosravi, P., Newton, C., & Rezvani, A. (2019). Management innovation: A systematic review and meta-analysis of past decades of research. *European Management Journal*, 37(6), 694–707.
- Kim, T., Chang, K., & Jae Ko, Y. (2010). Determinants of organisational identification and supportive intentions. *Journal of Marketing Management*, 26(5–6), 413–427.
- Kimberly, J., & Evanisko, M. (1981). Organizational innovation: The influence of individual, organizational, and contextual factors on hospital adoption of technological and administrative innovations. *Academy of Management Journal*, 24(4), 689–713.
- Kirkman, B., & Rosen, B. (1999). Beyond self-management: Antecedents and consequences of team empowerment. *Academy of Management Journal*, 42(1), 58–74.
- Knol, J., & Van Linge, R. (2009). Innovative behaviour: The effect of structural and psychological empowerment on nurses. *Journal of Advanced Nursing*, 65(2), 359–370.
- Ko, E., Kim, S. H., Kim, M., & Woo, J. Y. (2008). Organizational characteristics and the CRM adoption process. *Journal of Business Research*, 61(1), 65–74.
- Ko, W. W., & Liu, G. (2017). Environmental strategy and competitive advantage: The role of small-and medium-sized enterprises' dynamic capabilities. *Business Strategy and the Environment*, 26(5), 584–596.



- Kogut, B., & Parkinson, D. (1998). Adoption of the multidivisional structure: Analyzing history from the start. *Industrial and Corporate Change*, 7(2), 249–273.
- Kostova, T., & Roth, K. (2002). Adoption of an organizational practice by subsidiaries of multinational corporations: institutional and relational effects. *Academy of Management Journal*, 45(1), 215–233.
- Kraimer, M., Seibert, S., & Liden, R. (1999). Psychological empowerment as a multidimensional construct: A test of construct validity. *Educational and Psychological Measurement*, 59(1), 127–142.
- Kruja, D., Ha, H., Drishti, E., & Oelfke, T. (2016). Empowerment in the hospitality industry in the United States. *Journal of Hospitality Marketing & Management*, 25(1), 25–48.
- Kwak, Y. H., & Anbari, F. (2006). Benefits, obstacles, and future of six sigma approach. *Technovation*, 26(5–6), 708–715.
- Lamm, E., & Gordon, J. (2010). Empowerment, Predisposition to Resist Change, and Support for Organizational Change. *Journal of Leadership & Organizational Studies*, 17(4), 426–437.
- Lee, C.-Y. (2009). Competition favors the prepared firm: Firms' R&D responses to competitive market pressure. *Research Policy*, 38(5), 861–870.
- Lee, E.-S., Park, T.-Y., & Koo, B. (2015). Identifying organizational identification as a basis for attitudes and behaviors: A meta-analytic review. *Psychological Bulletin*, 141(5), 1049–1080.
- Lee, H.-J. (2004). The role of competence-based trust and organizational identification in continuous improvement. *Journal of Managerial Psychology*, 19(6), 623–639.
- Lengnick-Hall, C. A. (1992). Innovation and Competitive Advantage: What We Know and What We Need to Learn. *Journal of Management*, 18(2), 399–429.
- Liang, H., Saraf, N., Hu, Q., & Xue, Y. (2007). Assimilation of enterprise systems: The effect of institutional pressures and the mediating role of top management. *MIS Quarterly*, 31(1), 59–87.
- Lieberman, M. B., & Montgomery, D. B. (1988). First-mover advantages. *Strategic Management Journal*, 9 (S1), 41–58.

- Lillrank, P. (1995). The Transfer of Management Innovations from Japan. *Organization Studies*, 16(6), 971–989.
- Lin, H.-F., Su, J.-Q., & Higgins, A. (2016). How dynamic capabilities affect adoption of management innovations. *Journal of Business Research*, 69(2), 862–876.
- Lin, H., Chen, M., & Su, J. (2017). How management innovations are successfully implemented? An organizational routines' perspective. *Journal of Organizational Change Management*, 30(4), 456–486.
- Lin, H., & Su, J. (2014). A case study on adoptive management innovation in China. *Journal of Organizational Change Management*, 27(1), 83–114.
- Liu, A., Chiu, W., & Fellows, R. (2007). Enhancing commitment through work empowerment. *Engineering, Construction and Architectural Management*, 14(6), 568–580.
- Liu, H., Ke, W., Wei, K. K., Gu, J., & Chen, H. (2010). The role of institutional pressures and organizational culture in the firm's intention to adopt internet-enabled supply chain management systems. *Journal of Operations Management*, 28(5), 372–384.
- Liu, W., Zhang, P., Liao, J., Hao, P., & Mao, J. (2016). Abusive supervision and employee creativity: The mediating role of psychological safety and organizational identification. *Management Decision*, 54(1), 130–147.
- Liu, Y. (2013). Sustainable competitive advantage in turbulent business environments. *International Journal of Production Research*, 51(10), 2821–2841.
- Lok, P., & Crawford, J. (2001). Antecedents of organizational commitment and the mediating role of job satisfaction. *Journal of Managerial Psychology*, 16(8), 594–613.
- Lok, P., Westwood, R., & Crawford, J. (2005). Perceptions of Organisational Subculture and their Significance for Organisational Commitment. *Applied Psychology*, 54(4), 490–514.
- Lucianetti, L., Jabbour, C., Jose, C., Gunasekaran, A., & Latan, H. (2018). Contingency factors and complementary effects of adopting advanced manufacturing tools and managerial practices: Effects on organizational measurement systems and firms' performance. *International Journal of Production Economics*, 200, 318–328.
- MacKinnon, D., Lockwood, C., Hoffman, J., West, S., & Sheets, V. (2002). A comparison of methods to test mediation and other intervening variable effects. *Psychological Methods*, 7(1), 83–104.

- Mael, F., & Ashforth, B. (1992). Alumni and their alma mater: A partial test of the reformulated model of organizational identification. *Journal of Organizational Behavior*, 13(2), 103–123.
- Magnier-Watanabe, R., & Benton, C. (2017). Management innovation and firm performance: The mediating effects of tacit and explicit knowledge. *Knowledge Management Research and Practice*, 15(3), 325–335.
- Malmi, T. (1999). Activity-based costing diffusion across organizations: An exploratory empirical analysis of Finnish firms. *Accounting, Organizations and Society*, 24(8), 649–672.
- Martin, R., Muûls, M., De Preux, L. B., & Wagner, U. J. (2012). Anatomy of a paradox: Management practices, organizational structure and energy efficiency. *Journal of Environmental Economics and Management*, 63(2), 208–223.
- Mathieu, J., & Zajac, D. (1990). A review and meta-analysis of the antecedents, correlates, and consequences of organizational commitment. *Psychological Bulletin*, 108(2), 171–194.
- Maynard, M. T., Gilson, L., & Mathieu, J. (2012). Empowerment—fad or fab? A multilevel review of the past two decades of research. *Journal of Management*, 38(4), 1231–1281.
- Men, L. (2011). Exploring the impact of employee empowerment on organization-employee relationship. *Public Relations Review*, 37(4), 435–437.
- Menon, S. (2001). Employee empowerment: An integrative psychological approach. *Applied Psychology*, 50(1), 153–180.
- Meyer, J., & Allen, N. (1991). A three-component conceptualization of organizational commitment. *Human Resource Management Review*, 1(1), 61–89.
- Meyer, J., & Rowan, B. (1977). Institutionalized organizations: Formal structure as myth and ceremony. *American Journal of Sociology*, 83(2), 340–363.
- Michaelis, B., Stegmaier, R., & Sonntag, K. (2009). Affective commitment to change and innovation implementation behavior: The role of charismatic leadership and employees' trust in top management. *Journal of Change Management*, 9(4), 399–417.
- Mishra, A., & Spreitzer, G. (1998). Explaining How Survivors Respond to Downsizing: The Roles of Trust, Empowerment, Justice, and Work Redesign. *Academy of Management Review*, 23(3), 567–588.

- Mol, M., & Birkinshaw, J. (2006). Against the flow: Reaping the rewards of management innovation. *European Business Forum*, 27, 24–29.
- Mol, M., & Birkinshaw, J. (2008). Giant steps in management: Creating innovations that change the way we work. Harlow: Financial Times Prentice Hall.
- Mol, M., & Birkinshaw, J. (2009). The sources of management innovation: When firms introduce new management practices. *Journal of Business Research*, 62(12), 1269–1280.
- Mol, M., & Birkinshaw, J. (2014). The role of external involvement in the creation of management innovations. *Organization Studies*, 35(9), 1287–1312.
- Montes, F. J. L., Moreno, A. R., & Fernández, L. M. M. (2004). Assessing the organizational climate and contractual relationship for perceptions of support for innovation. *International Journal of Manpower*, 25(2), 167–180.
- Mu, J., Bao, Y., Sekhon, T., Qi, J., & Love, E. (2018). Outside-in marketing capability and firm performance. *Industrial Marketing Management*, 75, 37–54.
- Munir, R., & Baird, K. (2016). Influence of institutional pressures on performance measurement systems. *Journal of Accounting & Organizational Change*, 12(2), 106–128.
- Nadkarni, S., & Herrmann, P. (2010). CEO personality, strategic flexibility, and firm performance: The case of the Indian business process outsourcing industry. *Academy of Management Journal*, 53(5), 1050–1073.
- Nadkarni, S., & Narayanan, V. K. (2007). Strategic schemas, strategic flexibility, and firm performance: The moderating role of industry clockspeed. *Strategic Management Journal*, 28(3), 243–270.
- Naranjo-Gil, D. (2009). The influence of environmental and organizational factors on innovation adoptions: Consequences for performance in public sector organizations. *Technovation*, 29(12), 810–818.
- Nieves, J. (2016). Outcomes of management innovation: An empirical analysis in the services industry. *European Management Review*, 13(2), 125–136.
- Nieves, J., & Segarra-Ciprés, M. (2015). Management innovation in the hotel industry. *Tourism Management*, 46, 51–58.

- Nuhu, N. A., Baird, K., & Appuhami, R. (2019). The impact of management control systems on organisational change and performance in the public sector. *Journal of Accounting & Organizational Change*, 15(3), 473–495.
- Nunnally, J. (1978). Psychometric Theory. In *McGraw-Hill*.
- O'Mahoney, J. (2007). The diffusion of management innovations: The possibilities and limitations of memetics. *Journal of Management Studies*, 44(8), 1324–1348.
- OECD. (2005). Oslo Manual—Guidelines for Collecting and Interpreting Innovation Data. [https://read.oecd-ilibrary.org/science-and-technology/oslo-manual\\_9789264013100-en#page4](https://read.oecd-ilibrary.org/science-and-technology/oslo-manual_9789264013100-en#page4).
- Oliver, C. (1991). Strategic responses to institutional processes. *Academy of Management Review*, 16(1), 145–179.
- Oliver, C. (1997). Sustainable competitive advantage: Combining institutional and resource-based views. *Strategic Management Journal*, 18(9), 697–713.
- Paauwe, J., & Boselie, P. (2005). 'Best practices... in spite of performance': Just a matter of imitation? *The International Journal of Human Resource Management Group*, 16(6), 987–1003.
- Paik, Y., Parboteeah, K. P., & Shim, W. (2007). The relationship between perceived compensation, organizational commitment and job satisfaction: the case of Mexican workers in the Korean Maquiladoras. *The International Journal of Human Resource Management*, 18(10), 1768–1781.
- Palmer, D. A., Jennings, P. D., & Zhou, X. (1993). Late adoption of the multidivisional form by large US corporations: Institutional, political, and economic accounts. *Administrative Science Quarterly*, 38(1), 100–131.
- Pardo del Val, M., & Lloyd, B. (2003). Measuring empowerment. *Leadership & Organization Development Journal*, 24(2), 102–108.
- Pelit, E., Öztürk, Y., & Arslantürk, Y. (2011). The effects of employee empowerment on employee job satisfaction: A study on hotels in Turkey. *International Journal of Contemporary Hospitality Management*, 23(6), 784–802.
- Pérez-Pérez, M., López-Fernández, M. C., & Obeso, M. (2019). Knowledge, renewal and flexibility: exploratory research in family firms. *Administrative Sciences*, 9(4), 87.

- Perez-Valls, M., Cespedes-Lorente, J., & Moreno-Garcia, J. (2016). Green practices and organizational design as sources of strategic flexibility and performance. *Business Strategy and the Environment*, 25(8), 529–544.
- Perry, J. L., & Wise, L. R. (1990). The motivational bases of public service. *Public Administration Review*, 50(3), 367–373.
- Peteraf, M. (1993). The cornerstones of competitive advantage: A resource-based view. *Strategic Management Journal*, 14(3), 179–191.
- Peteraf, M., & Barney, J. (2003). Unraveling the resource-based tangle. *Managerial and Decision Economics*, 24(4), 309–323.
- Pierce, J., & Delbecq, A. (1977). Organization structure, individual attitudes and innovation. *Academy of Management Review*, 2(1), 27–37.
- Pil, F., & MacDuffie, J. (1996). The adoption of high-involvement work practices. *Industrial Relations: A Journal of Economy and Society*, 35(3), 423–455.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879–903.
- Pool, S., & Pool, B. (2007). A management development model: Measuring organizational commitment and its impact on job satisfaction among executives in a learning organization. *Journal of Management Development*, 26(4), 353–369.
- Porter, L., Steers, R., Mowday, R., & Boulian, P. (1974). Organizational commitment, job satisfaction, and turnover among psychiatric technicians. *Journal of Applied Psychology*, 59(5), 603–609.
- Psoinos, A., & Smithson, S. (2002). Employee empowerment in manufacturing: a study of organisations in the UK. *New Technology, Work and Employment*, 17(2), 132–148.
- Raffaelli, R., & Glynn, M. A. (2014). Turnkey or tailored? Relational pluralism, institutional complexity, and the organizational adoption of more or less customized practices. *Academy of Management Journal*, 57(2), 541–562.
- Rees, C. (1999). Teamworking and service quality: the limits of employee involvement. *Personnel Review*, 28(5/6), 455–473.

- Rhoades, L., Eisenberger, R., & Armeli, S. (2001). Affective commitment to the organization: The contribution of perceived organizational support. *Journal of Applied Psychology*, 86(5), 825–836.
- Rhodes, J., Hung, R., Lok, P., Ya-Hui Lien, B., & Wu, C.-M. (2008). Factors influencing organizational knowledge transfer: Implication for corporate performance. *Journal of Knowledge Management*, 12(3), 84–100.
- Riketta, M. (2002). Attitudinal organizational commitment and job performance: a meta-analysis. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, 23(3), 257–266.
- Roberts, E. (1999). In defence of the survey method: An illustration from a study of user information satisfaction. *Accounting and Finance*, 39(1), 53–77.
- Roehrich, J. K., Davies, A., Frederiksen, L., & Sergeeva, N. (2019). Management innovation in complex products and systems: The case of integrated project teams. *Industrial Marketing Management*, 79, 84–93.
- Sanchez, R. (1995). Strategic flexibility in product competition. *Strategic Management Journal*, 16(S1), 135–159.
- Sanchez, R. (1997). Preparing for an uncertain future: Managing organizations for strategic flexibility. *International Studies of Management & Organization*, 27(2), 71–94.
- Santos-Vijande, M. L., López-Sánchez, J. Á., & Trespacios, J. A. (2012). How organizational learning affects a firm's flexibility, competitive strategy, and performance. *Journal of Business Research*, 65(8), 1079–1089.
- Sapprasert, K., & Clausen, T. H. (2012). Organizational innovation and its effects. *Industrial and Corporate Change*, 21(5), 1283–1305.
- Schilke, O. (2014). On the contingent value of dynamic capabilities for competitive advantage: The nonlinear moderating effect of environmental dynamism. *Strategic Management Journal*, 35(2), 179–203.
- Scott, W. R. (1992). Organizations: Rational, natural, and open systems. In *Aufl.*, Englewood Cliffs (NJ).
- Seibert, S., Silver, S., & Randolph, W. (2004). Taking empowerment to the next level: A multiple-level model of empowerment, performance, and satisfaction. *Academy of Management Journal*, 47(3), 332–349.

- Seibert, S., Wang, G., & Courtright, S. (2011). Antecedents and consequences of psychological and team empowerment in organizations: a meta-analytic review. *Journal of Applied Psychology, 96*(5), 981–1003.
- Shimizu, K., & Hitt, M. (2004). Strategic flexibility: Organizational preparedness to reverse ineffective strategic decisions. *The Academy of Management Executive, 18*(4), 44–59.
- Shin, S., & Aiken, K. D. (2012). The mediating role of marketing capability: evidence from Korean companies. *Asia Pacific Journal of Marketing and Logistics, 24*(4), 658–677
- Shore, L. M., Barksdale, K., & Shore, T. H. (1995). Managerial perceptions of employee commitment to the organization. *Academy of Management Journal, 38*(6), 1593–1615.
- Singh, D., Oberoi, J. S., & Ahuja, I. S. (2013). An empirical investigation of dynamic capabilities in managing strategic flexibility in manufacturing organizations. *Management Decision, 51*(7), 1442–1461.
- Singleton, R., & Straits, B. (2010). Approaches to social research (3rd ed.). Oxford University Press.
- Slack, T., & Hinings, B. (1994). Institutional pressures and isomorphic change: An empirical test. *Organization Studies, 15*(6), 803–827.
- Spreitzer, G. (1995). Psychological empowerment in the workplace: Dimensions, measurement, and validation. *Academy of Management Journal, 38*(5), 1442–1465.
- Stam, E., & Wennberg, K. (2009). The roles of R&D in new firm growth. *Small Business Economics, 33*(1), 77–89.
- Stata, R. (1989). Organizational Learning - The Key to Management Innovation. *Sloan Management Review, 30*(3), 63.
- Sturdy, A. (2004). The adoption of management ideas and practices: Theoretical perspectives and possibilities. *Management Learning, 35*(2), 155–179.
- Su, S., & Baird, K. (2018). The role of leaders in generating management innovation. *The International Journal of Human Resource Management, 29*(19), 2758–2779.
- Su, S., Baird, K., & Blair, B. (2009). Employee organizational commitment: the influence of cultural and organizational factors in the Australian manufacturing industry. *The International Journal of Human Resource Management, 20*(12), 2494–2516.



- Tajfel, H. (1978). The achievement of group differentiation. In H. Tajfel (Ed.), *Differentiation between social groups: Studies in the social psychology of intergroup relations* (pp. 61–76). Academic Press.
- Teece, D. (1980). The diffusion of an administrative innovation. *Management Science*, 26(5), 464–470.
- Teece, D. (2007). Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal*, 28(13), 1319–1350.
- Teece, D. (2012). Dynamic capabilities: Routines versus entrepreneurial action. *Journal of Management Studies*, 49(8), 1395–1401.
- Teece, D. (2014). The foundations of enterprise performance: Dynamic and ordinary capabilities in an (economic) theory of firms. *Academy of Management Perspectives*, 28(4), 328–352.
- Teece, D., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7), 509–533.
- Teo, H. H., Wei, K. K., & Benbasat, I. (2003). Predicting intention to adopt interorganizational linkages: An institutional perspective. *MIS Quarterly*, 27(1), 19–49.
- Tolbert, P., & Zucker, L. (1983). Institutional sources of change in the formal structure of organizations: The diffusion of civil service reform, 1880-1935. *Administrative Science Quarterly*, 28(1), 22–39.
- Tsai, C.-F., & Yen, Y.-F. (2018). Moderating effect of employee perception of responsible downsizing on job satisfaction and innovation commitment. *The International Journal of Human Resource Management*, 31(15), 1–25.
- Ulrich, D., & Lake, D. (1991). Organizational capability: Creating competitive advantage. *Academy of Management Perspectives*, 5(1), 77–92.
- Vaccaro, I., Jansen, J., Van Den Bosch, F., & Volberda, H. (2012). Management innovation and leadership: The moderating role of organizational size. *Journal of Management Studies*, 49(1), 28–51.
- Vakola, M., & Nikolaou, I. (2005). Attitudes towards organizational change: what is the role of employees' stress and commitment? *Employee Relations*, 27(2), 160–174.

- Van der Stede, W., Young, S. M., & Chen, C. X. (2005). Assessing the quality of evidence in empirical management accounting research: The case of survey studies. *Accounting, Organizations and Society*, 30(7–8), 655–684.
- van Knippenberg, D. (2000). Work Motivation and Performance: A Social Identity Perspective. *Applied Psychology*, 49(3), 357–371.
- van Knippenberg, D., & Sleenbos, E. (2006). Organizational identification versus organizational commitment: self-definition, social exchange, and job attitudes. *Journal of Organizational Behavior*, 27(5), 571–584.
- Vancouver, J., & Schmitt, N. (1991). An exploratory examination of person-organization fit: Organizational goal congruence. *Personnel Psychology*, 44(2), 333–352.
- Volberda, H. (1996). Toward the flexible form: How to remain vital in hypercompetitive environments. *Organization Science*, 7(4), 359–374.
- Volberda, H., Van Den Bosch, F. A., Mihalache, O., Peeters, C., Massini, S., & Lewin, A. (2014). Sources of Variation in the Efficiency of Adopting Management Innovation: The Role of Absorptive Capacity Routines, Managerial Attention and Organizational Legitimacy. *Organization Studies*, 35(9), 1343–1371.
- Volberda, H., Van Den Bosch, F., & Heij, C. (2013). Management innovation: Management as fertile ground for innovation. *European Management Review*, 10(1), 1–15.
- Volberda, H., Van Den Bosch, F., & Mihalache, O. (2014). Advancing management innovation: Synthesizing processes, levels of analysis, and change agents. *Organization Studies*, 35(9), 1245–1264.
- Walker, R., Chen, J., & Aravind, D. (2015). Management innovation and firm performance: An integration of research findings. *European Management Journal*, 33(5), 407–422.
- Walker, R., Damanpour, F., & Devece, C. (2011). Management innovation and organizational performance: The mediating effect of performance management. *Journal of Public Administration Research and Theory*, 21(2), 367–386.
- Wan, D., Ong, C. H., & Lee, F. (2005). Determinants of firm innovation in Singapore. *Technovation*, 25(3), 261–268.
- Wang, C., & Ahmed, P. (2007). Dynamic capabilities: A review and research agenda. *International Journal of Management Reviews*, 9(1), 31–51.

- Wang, S., Li, J., Song, J., Li, Y., & Sherk, M. (2018). Institutional pressures and product modularity: Do supply chain coordination and functional coordination matter? *International Journal of Production Research*, 56(20), 6644–6657.
- Weerawardena, J., & Mavondo, F. (2011). Capabilities, innovation and competitive advantage. *Industrial Marketing Management*, 40(8), 1220–1223.
- Welch, M. (2011). The evolution of the employee engagement concept: communication implications. *Corporate Communications: An International Journal*, 16(4), 328–346.
- Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, 5(2), 171–180.
- Westphal, J., Gulati, R., & Shortell, S. (1997). Customization or conformity? An institutional and network perspective on the content and consequences of TQM adoption. *Administrative Science Quarterly*, 42(2), 366–394.
- Wilden, R., & Gudergan, S. P. (2015). The impact of dynamic capabilities on operational marketing and technological capabilities: investigating the role of environmental turbulence. *Journal of the Academy of Marketing Science*, 43(2), 181–199.
- Williams, K., Haslam, C., Williams, J., Adcroft, A., & Johal, S. (1993). The myth of the line: Ford's production of the Model T at Highland Park, 1909–16. *Business History*, 35(3), 66–87.
- Wind, J., & Mahajan, V. (1997). *Issues and opportunities in new product development: An introduction to the special issue*. 34(1), 1–12.
- Winter, S. (2003). Understanding dynamic capabilities. *Strategic Management Journal*, 24(10), 991–995.
- Wischnevsky, J. D., & Damanpour, F. (2006). Organizational transformation and performance: An examination of three perspectives. *Journal of Managerial Issues*, 18(1), 104–128.
- Wolfe, R. (1994). Organizational innovation: Review, critique and suggested research directions. *Journal of Management Studies*, 31(3), 405–431.
- Wong, S. K. S. (2013). The role of management involvement in innovation. *Management Decision*, 51(4), 709–729.

- Worren, N., Moore, K., & Cardona, P. (2002). Modularity, strategic flexibility, and firm performance: a study of the home appliance industry. *Strategic Management Journal*, 23(12), 1123–1140.
- Wright, C., Sturdy, A., & Wylie, N. (2012). Management innovation through standardization: Consultants as standardizers of organizational practice. *Research Policy*, 41(3), 652–662.
- Wu, L.-Y. (2010). Which companies should implement management innovation? A commentary essay. *Journal of Business Research*, 63(3), 321–323.
- Xerri, M., & Brunetto, Y. (2013). Fostering innovative behaviour: The importance of employee commitment and organisational citizenship behaviour. *The International Journal of Human Resource Management*, 24(16), 3163–3177.
- Xiu, L., Liang, X., Chen, Z., & Xu, W. (2017). Strategic flexibility, innovative HR practices, and firm performance. *Personnel Review*, 46(7), 1335–1357.
- Young-Ybarra, C., & Wiersema, M. (1999). Strategic flexibility in information technology alliances: The influence of transaction cost economics and social exchange theory. *Organization Science*, 10(4), 439–459.
- Yu, K., Cadeaux, J., & Luo, B. N. (2015). Operational flexibility: Review and meta-analysis. *International Journal of Production Economics*, 169, 190–202.
- Zahra, S., Sapienza, H., & Davidsson, P. (2006). Entrepreneurship and dynamic capabilities: A review, model and research agenda. *Journal of Management Studies*, 43(4), 917–955.
- Zaltman, G., Duncan, R., & Holbek, J. (1973). *Innovations and organizations*. New York; Toronto: Wiley.
- Zhang, X., & Bartol, K. (2010). Linking empowering leadership and employee creativity: The influence of psychological empowerment, intrinsic motivation, and creative process engagement. *Academy of Management Journal*, 53(1), 107–128.
- Zhou, K., & Wu, F. (2010). Technological capability, strategic flexibility, and product innovation. *Strategic Management Journal*, 31(5), 547–561.
- Zhu, W., May, D., & Avolio, B. (2004). The impact of ethical leadership behavior on employee outcomes: The roles of psychological empowerment and authenticity. *Journal of Leadership & Organizational Studies*, 11(1), 16–26.

Zsidisin, G., Melnyk, S., & Ragatz, G. (2005). An institutional theory perspective of business continuity planning for purchasing and supply management. *International Journal of Production Research*, 43(16), 3401–3420.

# APPENDIX 1: SURVEY QUESTIONNAIRE

## MANAGEMENT INNOVATION SURVEY

A

### General information

**1. Please indicate your:**

(a) **Gender:**   ☐ Male   ☐ Female

(b) **Qualifications:**

☐ BA/B.Com   ☐ MA/M.Com/MBA   ☐ CA/CPA   ☐ PhD   ☐ Other (Specify\_\_\_\_\_)

**2. Please indicate what age bracket you fall in:**

☐ 25-35   ☐ 36-45   ☐ 46-55   ☐ Over 55

**3. What is your specific position within your business unit/team?** \_\_\_\_\_

**4. How many years have you worked in your current position (job)?** \_\_\_\_\_ years

**5. What is the approximate number of employees within your business unit? (Please treat part-time employees as fractions of full-time employees).**

☐ Less than 50   ☐ 50-99   ☐ 100-199   ☐ 200-299   ☐ Over 300

**6. Please indicate the main industry in which your organisation operates:**

☐ Manufacturing   ☐ Mining   ☐ Construction   ☐ Consulting  
☐ Health Care & social assistance   ☐ Technology   ☐ Utilities  
☐ Professional & administrative services   ☐ Other (Specify\_\_\_\_\_)

**B** Please indicate the extent to which you agree with the following statements.

	Strongly Disagree		Neutral		Strongly Agree
Rules and procedures within our business unit are regularly renewed.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
We regularly make changes to our employees' tasks and functions.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Our business unit regularly implements new management systems.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
The policy with regard to employee compensation has been changed in the last three years.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
The intra- and inter-departmental communication structure within our business unit is regularly restructured.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
We continuously alter certain elements of the business unit's structure.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

**C** Please indicate the extent to which the following management accounting practices are currently used in your business unit.

	Not at all				To a great extent
Total Quality Management	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Balanced Scorecard	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Activity Based Management	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Benchmarking	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Environmental Management Accounting	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Value Chain Analysis	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

**D** Please indicate the extent to which the following applies to front line staff in your business unit. Front line staff are defined as employees working in the lowest level of the hierarchy within your business unit.

	Not at all					To a great extent
They have a high level of collaboration/involvement in decision making.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
There are official channels or certain norms or rules to guarantee their participation in the decision making process.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
They contribute directly to the decision making process, rather than through intermediaries (e.g., supervisors).	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
They have authority/power to make and implement decisions about tasks.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	

**F** Please indicate the extent to which you agree with the following statements.

	Strongly Disagree	Neutral			Strongly Agree
When someone criticises my organisation, it feels like a personal insult.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
I am very interested in what others think about my organisation.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
When I talk about my organisation, I usually say 'we' rather than 'they'.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
This company's successes are my success.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
When someone praises my organisation, it feels like a personal compliment.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
If a story in the media criticised my organisation, I would feel embarrassed.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5



**E****Please indicate the extent to which you agree with the following statements.**

	Strongly Disagree		Neutral		Strongly Agree
I am quite proud to be able to tell people who it is I work for.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
I sometimes feel like leaving this organisation for good.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
I am not willing to put myself out just to help the organisation.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Even if my organisation was not doing well financially, I would be reluctant to change to another organisation.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
I feel that I am a part of the organisation.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
In my work I like to feel I am applying some effort not just for myself but for the organisation as well.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
The offer of a small increase in remuneration by another employer would not seriously make me think of changing my job.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
I would not advise a close friend to join my organisation.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
I am determined to make a contribution for the good of my organisation.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

**G**

Please indicate how your business unit performs concerning the following.

	Strongly Disagree	Neutral				Strongly Agree	
We have gained strategic advantage over our competitors.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
We have a large market share.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
Overall, we are more successful than our major competitors.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
Our EBIT (earnings before interest and taxes) is continuously above industry average.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
Our ROI (return on investment) is continuously above industry average.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
Our ROS (return on sales) continuously above industry average	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
Our sales growth rate is continuously above industry average.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7

**H**

Please indicate the extent to which following factors have influenced your organisation's adoption of specific management innovations.

	Not at all					To a great extent
An uncertain economic environment.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
Higher economic growth and development.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
Competition in the industry.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
Awareness of best practices in the industry.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
Legitimizing our activities.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
Compliance with industry regulations.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
Compliance with government regulations.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
Compliance with media pressures.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
Compliance with International Financial Reporting Standards and International Auditing Standards.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
Recommendations from professional bodies and experts.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
Recommendations from trade associations.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
New accounting standards.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
New corporate governance requirements.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
Initiatives taken by experienced staff.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
Education and training received by staff.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
Obligation to follow International Standards.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
Pressure from senior management.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
Pressure from the Director.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
Pressure from the Head office.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
New vision, mission or strategic plans.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	

**I** Please indicate the extent to which you agree with the following statements relating to your current business unit... over the last three years.

	Strongly Disagree		Neutral		Strongly Agree
Profit goals have been achieved.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Sales goals have been achieved.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Return on investment goals have been achieved.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Our product(s)/service(s) are of a higher quality than that of our competitors.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
We have a higher customer retention rate than our competitors.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
We have a lower employee turnover rate than our competitors.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

**J** Please indicate the extent to which your business unit has the ability to respond to each of the following:

	Not at all					To a great extent	
Resource reallocation needs.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
The need to modify business partnerships (e.g., strategic alliance, outsourcing relationship, etc.).	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
Emerging market opportunities.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
Emerging market threats.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
Changing environmental conditions.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
Changing technology needs.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7

**K**

**Different business units are good at different things. The following questions ask you to assess your business unit's skills/capabilities in various areas. Please indicate whether you agree that, relative to your competitors, your business unit is good at each of the following.**

	Strongly Disagree			Neutral			Strongly Agree
Setting up new types of production facilities, operations or work/task processes.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
Applying technology, we have not used before.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
Assessing the feasibility of new technologies.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
Recruiting talents in technical areas we are not familiar with.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
Developing promising new technology	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7
Implementing new types of production or work/task processes.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7

**If there is anything else you would like to tell me in relation to your experience with the management innovation in your business unit, please do so in the space provided below.**

Please return your completed survey in the enclosed postage paid envelope to:

Salha Alshumrani

C/- Dr. Rahat Munir, Room 312, Building 4ER,

Department of Accounting and Corporate Governance

Macquarie University, Herring Road, North Ryde

NSW 2109

**Thank you very much for your participation**

## APPENDIX 2: Cover letter for first mail-out Survey

DEPARTMENT OF  
ACCOUNTING AND CORPORATE GOVERNANCE  
*Faculty of Business and Economics*



Chief Investigator's / Supervisor's Name: Rahat Munir  
Chief Investigator's / Supervisor's Title: Professor

### Information Letter

Project Title: The Use and Effectiveness of Management Innovation

You are invited to participate in a study on management innovation. The purpose of the study is to provide an insight into the influence of organisational and institutional factors on the adoption of management innovation in Australian organisations. Further, the study also aims to examine the impact of adopting management innovation on both competitive advantage and performance.

The research is being conducted by Salha Alshumrani to meet the requirements for the degree of PhD in Accounting, under the supervision of Professors Rahat Munir (Ph. 02 98594765, email: rahat.munir@mq.edu.au) and Kevin Baird (Ph. 02 98508532, email: kevin.baird@mq.edu.au) of the Department of Accounting and Corporate Governance, Macquarie University, Sydney Australia.

Participation in this study is entirely voluntary. You are not obliged to participate and if you decide to participate, you are free to withdraw at any time without having to provide a reason and without consequence. Please note that completion and return of the questionnaire will be regarded as consent to use the information for research purposes. If you decide to participate, you do not need to disclose your identity or that of your organisation, and the information you provide will be kept strictly confidential. I ask that you please return the enclosed postcard and questionnaire separately. The purpose of the identification number on the postcard is to alert me that you have completed and returned the survey, thereby avoiding any follow ups. The questionnaire should take approximately 15 minutes to complete.

Any information or personal details gathered in the course of the study are confidential and only the researchers will have access to the data. No individual will be identified in any publication of the results. While a postcard is provided, the purpose of this is to inform us that you have completed the questionnaire, thereby preventing a follow up being sent.

Please return the completed survey in the reply-paid envelope provided. If you would like to receive a copy of the results of this study, please indicate this on the postcard.

Thank you for your assistance.

Yours sincerely,  
Salha Alshumrani

# APPENDIX 3: Cover letter for second mail-out Survey

DEPARTMENT OF  
ACCOUNTING AND CORPORATE GOVERNANCE  
*Faculty of Business and Economics*



## Information Letter

About four weeks ago, I sent you a questionnaire requesting you to participate in the study I am undertaking as a part of my PhD degree at Macquarie University. The topic of the study is 'Management Innovation: The antecedents and impact on organisational effectiveness', conducted under the supervision of Professors Rahat Munir and Kevin Baird. My records indicate that your survey has not yet been returned. However, if you have already returned the questionnaire, please ignore this letter and thank you for your assistance. If you have not yet completed the survey, can you please do so, your assistance will be appreciated. Only a sufficiently high level of participants in this survey will ensure that the results are truly representative and valid.

In case you have misplaced the questionnaire, I have attached another copy of the questionnaire in this mail. If there is any reason as why you are not prepared to complete the survey, could you please let me know by returning a note or by indicating reason on the survey, and return it in the self-addressed envelope provided. Once again, I assure that the information you provide will be completely confidential and anonymous.

If you have any inquiries about the survey, please email Salha Alshumrani on [salha.alshumrani@hdr.mq.edu.au](mailto:salha.alshumrani@hdr.mq.edu.au).

Thank you in advance for your assistance.

Yours sincerely,  
Salha Alshumrani

## APPENDIX 4: Ethical approval letter

Business and Economics Subcommittee  
Macquarie University, North Ryde  
NSW 2109, Australia

02/11/2018

Dear Professor Munir,

**Reference No: 5201835814837**

**Project ID: 3581**

**Title: Management Innovation: The antecedents and impact on organisational effectiveness**

Thank you for submitting the above application for ethical review. The Business and Economics Subcommittee has considered your application.

I am pleased to advise that ethical approval has been granted for this project to be conducted by Salha Alshumrani, and other personnel: Professor Kevin Baird, Mrs Salha Alshumrani.

This research meets the requirements set out in the National Statement on Ethical Conduct in Human Research 2007, (updated July 2018).

### **Standard Conditions of Approval:**

1. Continuing compliance with the requirements of the National Statement, available from the following website: <https://nhmrc.gov.au/about-us/publications/national-statement-ethical-conduct-human-research-2007-updated-2018>.
2. This approval is valid for five (5) years, subject to the submission of annual reports. Please submit your reports on the anniversary of the approval for this protocol. You will be sent an automatic reminder email one week from the due date to remind you of your reporting responsibilities.
3. All adverse events, including unforeseen events, which might affect the continued ethical acceptability of the project, must be reported to the subcommittee within 72 hours.
4. All proposed changes to the project and associated documents must be submitted to the subcommittee for review and approval before implementation. Changes can be made via the Human Research Ethics Management System.

The HREC Terms of Reference and Standard Operating Procedures are available from the Research Services website: <https://www.mq.edu.au/research/ethics-integrity-and-policies/ethics/human-ethics>.

It is the responsibility of the Chief Investigator to retain a copy of all documentation related to this project and to forward a copy of this approval letter to all personnel listed on the project.



Should you have any queries regarding your project, please contact the [Faculty Ethics Officer](#).

The Business and Economics Subcommittee wishes you every success in your research.

Yours sincerely,

Dr Nikola Balnave

Chair, Business and Economics Subcommittee

*The Faculty Ethics Subcommittees at Macquarie University operate in accordance with the National Statement on Ethical Conduct in Human Research 2007, (updated July 2018), [Section 5.2.22].*