



**The mediating role of organizational identification and employee organizational commitment on the association between employee empowerment and management innovation**

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Complete List of Authors:	Alshumrani, Salha; Taibah University, Applied College Baird, Kevin; Macquarie University, Accounting and Corporate Governance Munir, Rahat; Macquarie University, Department of Accounting and Corporate Governance
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Keywords:	management innovation, employee empowerment, organizational identification, employee organizational commitment

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**Table 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 Normalization.  
 Rotation converged in 3 iterations.

**Table 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

**Table 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 Normalization.

Rotation converged in 3 iterations.

**Table 4 Descriptive statistics**

Variables	Mean	SD	Minimum	Maximum
Management innovation practices	3.401	0.856	1.00	5.00
Management innovation techniques	3.176	1.086	1.00	5.00
Employee empowerment	3.205	1.088	1.00	5.00
Organisational identification	3.985	0.803	1.00	5.00
Employee organisational involvement	4.113	0.770	1.00	5.00
Employee organisational attachment	2.700	1.095	1.00	5.00

**Table 5 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 6 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

**Table 7 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				

**Table 8 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 95% CI	UB 95% CI	P-value	LB 95% CI	UB 95% CI	P-value
Organisational identification	-	-	-	0.010	0.120	0.013
Employee organisational involvement	0.001	0.141	0.044	-	-	-

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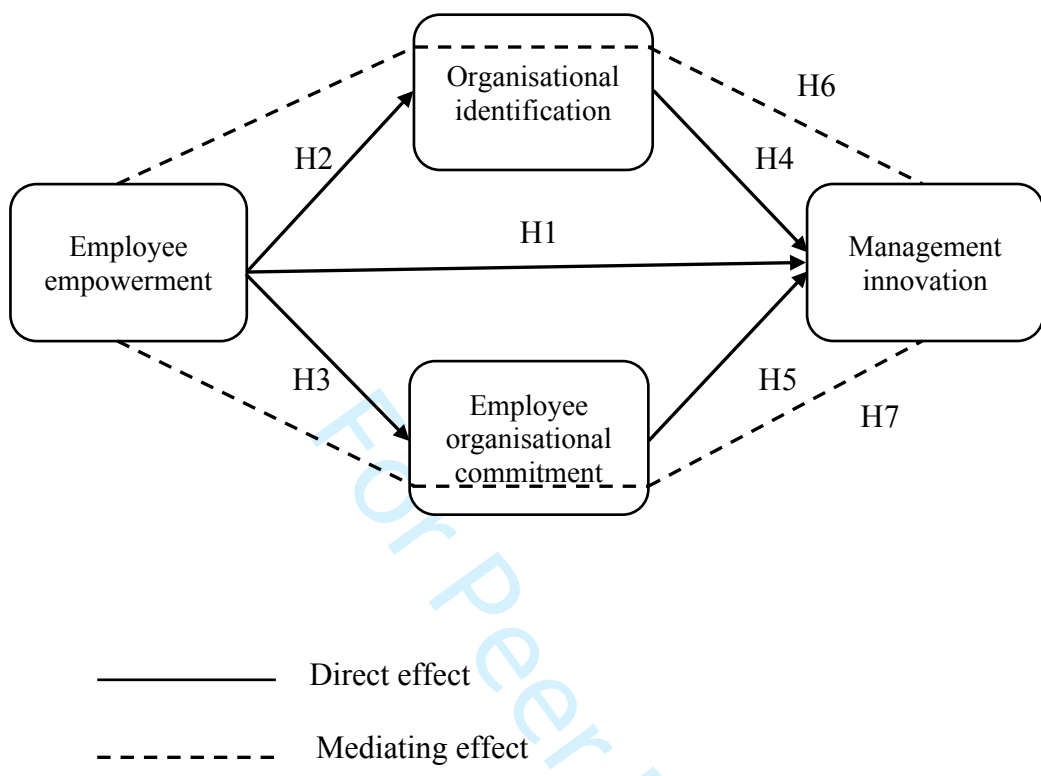
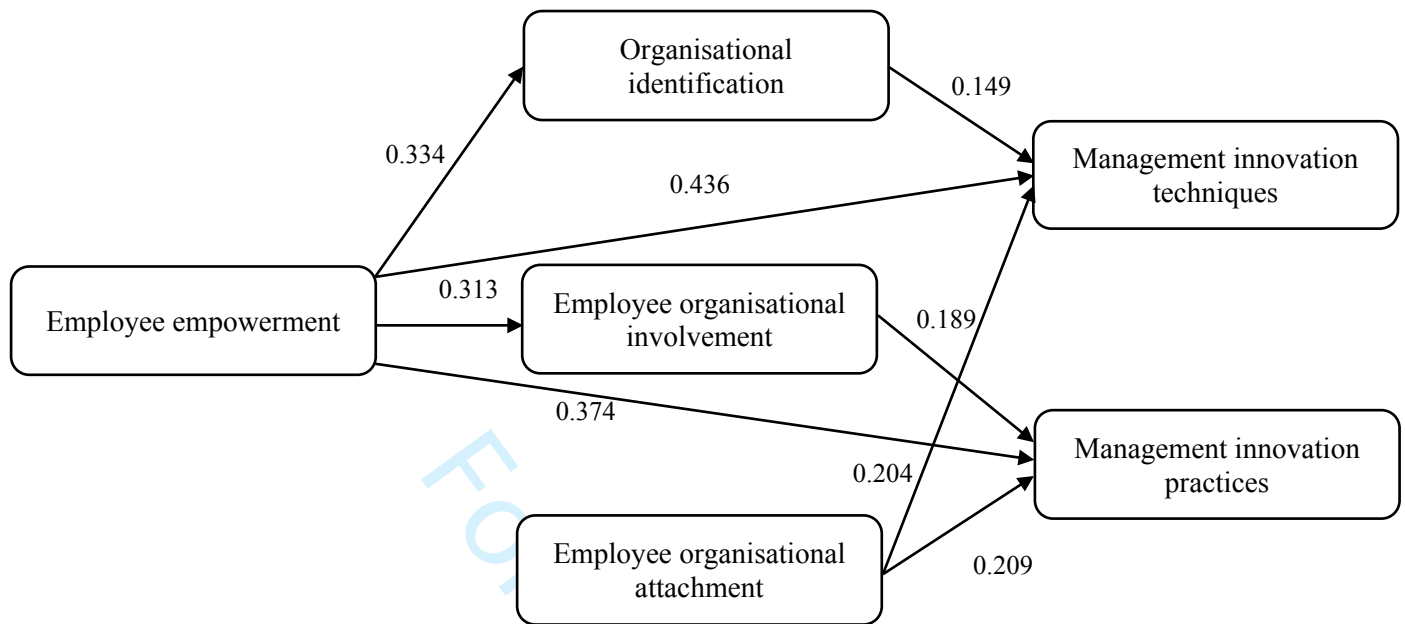


Figure 1: The theoretical model



**Figure 2: The structural model**

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3 **The mediating role of organizational identification and employee organizational**  
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10 **Salha Alshumrani**

11 *Applied College, Taibah University*  
12 *Almadinah Almunawwarah, Saudi Arabia*

13 Email: [sshumrani@taibahu.edu.sa](mailto:s shumrani@taibahu.edu.sa)

14 ORCID: <https://orcid.org/0000-0002-0772-3207>  
15  
16

17 **Kevin Baird**

18 *Department of Accounting and Corporate Governance, Macquarie University*  
19 *Sydney, Australia*

20 Email: [kevin.baird@mq.edu.au](mailto:kevin.baird@mq.edu.au)

21 ORCID: <https://orcid.org/0000-0002-1019-7500>  
22  
23

24 **Rahat Munir**

25 *Department of Accounting and Corporate Governance, Macquarie University*  
26 *Sydney, Australia*

27 Email: [rahat.munir@mq.edu.au](mailto:rahat.munir@mq.edu.au)

28 ORCID: <https://orcid.org/0000-0003-3762-491X>  
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**Abstract**

This study examines the role of employee empowerment as a driver of management innovation and the mediating role of two employee behavioral factors, organizational identification and employee organizational commitment, in the association between employee empowerment and management innovation. Data was collected from 156 middle-level managers in Australian organizations using a mail and online survey questionnaires and analyzed using structural equation modelling. The results show a direct positive association between employee empowerment with both dimensions of management innovation (practices and techniques). Further, organizational identification (employee organizational commitment) were found to partially mediate the association between employee empowerment and management innovation techniques (practices). The findings provide organizations with an insight into the critical role of employee empowerment, organizational identification and employee organizational commitment in influencing the extent of use of management innovation.

**Keywords:** management innovation, employee empowerment, employee behavior

## Introduction

Management innovation refers to “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). Management scholars and practitioners have focused on the importance of management innovation, emphasizing its crucial role in enhancing organizational productivity, developing strategies, and promoting organizational change and renewal (Birkinshaw & Mol, 2006; Birkinshaw *et al.*, 2008; Damanpour & Aravind, 2012; Hamel, 2006; Khosravi *et al.*, 2019). Further, management innovation has been recognized as an important source for organizations to achieve and sustain a competitive advantage and ensure their survival (Alshumrani *et al.*, 2022; Hamel, 2006; Volberda *et al.*, 2014; Wu, 2010).

The importance of management innovation has led organizations to reinvent their management practices and approaches to create successful innovations that have dramatically improved their organizational 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 the 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). 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

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3 management academics, research on management innovation requires further exploration  
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5 (Khosravi et al., 2019; Volberda et al., 2013; Vaccaro et al., 2012; Mol & Birkinshaw, 2009).  
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7 Accordingly, this study aims to contribute to the management innovation literature by  
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9 providing an empirical insight into the factors influencing the extent use of management  
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11 innovation in organizations.  
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16 The focus on the antecedent role of employee empowerment in facilitating management  
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18 innovation is highly relevant due to the recent emphasis on implementing decentralised  
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20 decision-making (Damanpour et al., 2018; Gebauer, 2011; Jansen et al., 2006) and enhancing  
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22 employee knowledge and capabilities (Bowen & Lawler III, 2006). Further, while employees  
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24 are considered to be a key driver of the use of management innovation (Mol & Birkinshaw,  
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26 2014; Volberda et al., 2013; Birkinshaw et al., 2008), there is a dearth of studies that examine  
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28 their role in increasing the extent of use of management innovation (Alshumrani et al, 2022;  
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30 Khosravi et al., 2019; Su & Baird, 2018).  
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37 The study also aims to examine the mediating role of two employee behavior factors in the  
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39 association between employee empowerment and management innovation. Specifically, the  
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41 study examines the mediating role of organizational identification and employee organizational  
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43 commitment on the association between employee empowerment and management innovation.  
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45 The focus on these two factors is pertinent for two reasons. First, the psychological relationship  
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47 between employees and the organization can create positive perceptions about innovation,  
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49 thereby influencing employees' behavioural outcomes. Hence, when employees grow more  
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51 attached to their organization through strong organizational identification and commitment,  
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53 they are more likely to be motivated to utilise management innovations to a greater extent  
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55 (Cadwallader et al., 2010). Secondly, given management innovation has gained considerable  
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57 attention in the literature and within organizations, it is worthwhile to study both the direct and  
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3 indirect influence of employee empowerment (Khosravi et al., 2019; Volberda et al., 2013).

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5 Figure 1 illustrates theoretical model of the study.  
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## 16 **Literature review and hypotheses development**

### 17 ***Management innovation***

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20 Management innovation refers to the introduction and use of new management practices,  
21 managerial processes, organizational structures, management systems and techniques, which  
22 change and improve how managers manage and generate value for their organization (Lin &  
23 Su, 2014; Volberda et al., 2013; Mol & Birkinshaw, 2009; Birkinshaw et al., 2008; Hamel,  
24 2006). Introducing new management practices involves the implementation of principles and  
25 practices that alter the organizational procedures associated with arranging and regulating the  
26 organization's activities and tasks (Volberda et al., 2013; Birkinshaw et al., 2008; Hamel,  
27 2006). Innovation in respect to management processes focuses on routines that govern the work  
28 of managers, such as strategic planning, project management and performance assessment,  
29 including the reward system (Birkinshaw et al., 2008; Hamel, 2006). Changes to management  
30 structures relates to how organizations restructure or rearrange the organizational  
31 communication scheme in which the activities and efforts of their member are organised and  
32 aligned (Volberda et al., 2013; Birkinshaw et al., 2008). Finally, management techniques are  
33 comprised of accounting management tools such as the Balanced Scorecard (BSC), Total  
34 Quality Management (TQM) and Activity-Based Management (ABM) (Alshumrani et al.,  
35 2022; Su & Baird, 2018; Volberda et al., 2013; Birkinshaw et al., 2008; Mol & Birkinshaw,  
36 2008).  
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## Employee empowerment

Employee empowerment involves delegating power and the authority of exercising control and making decisions to lower-level employees (Kruja et al., 2016), thereby enabling employees to become involved in managing organizational activities (Jiang & Liu, 2015). The literature identifies two streams of employee empowerment, structural empowerment which considers the implementation of various organizational and managerial structures, practices and policies that enable empowerment (Dewettinck and van Amejide, 2011), and psychological empowerment which targets individuals' experience or perception of empowerment (Maynard et al., 2012; Greasley et al., 2005; Spreitzer, 1995). This study operationalizes employee empowerment in respect to structural empowerment as it is a more objective and accurate way of assessing the level of empowerment using actual mechanisms (Baird & Wang, 2010).

The study conceptualizes employee empowerment using Pardo del Val and Lloyd's (2003) four dimensions, which focus on the level of collaboration and the characteristics of how empowerment takes place (i.e., collaboration, formalization, directness and degree of influence). The extent of collaboration refers to the level of sharing of power and influence in the decision-making process. Formalization 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 empowerment 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.

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

Employee empowerment entails distributing the responsibility to make effective decisions that improve the quality of organizational processes (Bowen & Lawler III, 2006) 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 organization in enhancing its processes (Gallego et al., 2012). Employee empowerment also has a positive influence on innovativeness (Fernandez & Moldogaziev, 2013; Seibert et al., 2011) through enhancing the innovative behavior of employees (Knol & Van Linge, 2009) and encouraging them to look for new ways to innovate and improve their work (Fernandez & Pitts, 2011). This increases the capacity of employees for creativity in problem solving (Coelho & Augusto, 2010), thereby improving organizational processes.

Empowering employees provides them with the capacity to participate in and contribute to the introduction and implementation of new practices and systems to manage organizational processes and activities (Damanpour et al., 2018; Birkinshaw et al., 2008; Hamel, 2006), 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). Hence, empowered employees are more likely to facilitate the extent of use of management innovation.

**Hypothesis 1:** Employee empowerment will be positively associated with management innovation.

### ***The association between employee empowerment and organizational identification***

Organizational identification is defined as “perceived oneness with an organization and the experience of the organization's successes and failures as one's own” (Mael & Ashforth, 1992, p.103). Organizational identification reflects the underlying behavior of the psychological relationship between employees and their organization (Ashforth et al., 2008). It connects individuals with their organizations, allowing organizational values, norms, and goals to be self-defining for individuals (Lee et al., 2015). When employees identify with their organization, they will be more likely to take the organizational perspective and act in the best interests of their organization (Dutton et al., 1994).

Empowering employees, through sharing the authority to control organizational activities and participate in setting and achieving an organization's goals (Zhang & Bartol, 2010), enables employees to better identify with their organization. Further, as employees are empowered, their trust in their organization will increase and they will have a better relationship with their organization. This is likely to increase their confidence in their ability to enhance organizational performance (Baird et al., 2018; Kirkman & Rosen, 1999) through continuous improvements in effort, due to the perception that their organization values them and their capabilities and skills (Men, 2011; Lee et al., 2004). Consequently, employees will be more willing to act and perform in the best interests of their organization, and therefore, become strongly attached to their organization, exerting more effort towards the achievement of its goals (Lee et al., 2015). Accordingly, we argue that empowering employees will enhance their ability to identify with their organization.

**Hypothesis 2:** Employee empowerment will be positively associated with organizational identification.

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3 ***The association between employee empowerment and employee organizational***  
4 ***commitment***  
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7 The importance of employee organizational commitment is highlighted in the literature with  
8 empirical evidence of its association with various work related attitudes (Shore et al., 1995)  
9 including job performance, employee turnover, job satisfaction, and employee retention (Liang  
10 et al., 2007; Paik et al., 2007). Meyer and Allen (1991) refer to three forms of commitment:  
11 affective commitment (an employee's emotional and psychological attachment to an  
12 organization), continuance commitment (commitment due to the costs and consequences  
13 associated with leaving the organization), and normative commitment (employees' feelings of  
14 obligation to stay with their organization). As both continuance and normative commitment  
15 are out of the organization's control, we focus on affective commitment which is influenced  
16 by employees' attitudes concerning their organization (Su et al., 2009).  
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32 Empowering employees is likely to increase employees commitment toward their organization  
33 for several reasons. First, delegating authority to employees will enhance their responsibility  
34 to make contributions to the decision-making process, thereby leading to employees having  
35 higher confidence in their competencies and their ability to successfully perform work tasks  
36 (Janssen, 2004) and achieve positive outcomes (Seibert et al., 2011; Zhang & Bartol, 2010) i.e.  
37 achieve organizational goals (Men, 2011).  
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48 Secondly, employee empowerment provides employees with an opportunity to participate and  
49 engage in various organizational decisions and to control their tasks and activities (Bowen &  
50 Lawler III, 2006; Menon, 2001; Spreitzer, 1995), which enhances employees' performance. As  
51 a result, employees will be more involved with their jobs and will have higher levels of self-  
52 determination, self-worth, and self-efficacy (Liu et al., 2007; Janssen, 2004) which is expected  
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3 to result in employees exhibiting a higher level of commitment (Lee et al., 2015; Seibert et al.,  
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5 2011; Kirkman & Rosen, 1999).  
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10 **Hypothesis 3:** Employee empowerment will be positively associated with  
11 employee organizational commitment.  
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### 14 *The association between organizational identification and management innovation*

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16 Organizational identification plays an important role in predicting an organization's  
17 innovation, as employees who strongly identify with their organization, are more likely to be  
18 motivated to engage in innovative activities (Hartmann, 2006). Further, from a goal congruence  
19 perspective, the more strongly that employees identify with their organization, the more likely  
20 that they will act and make work choices that benefit the organization's goals (Lee et al., 2015;  
21 Kim et al., 2010). For example, it is more likely that employees will take risks and generate  
22 creative ideas that benefit their organization (Liu et al., 2016). Alternatively, a low degree of  
23 organizational identification, where there are differences in values or miscommunication  
24 between management levels, may constrain management innovation (Heyden et al., 2018).  
25 Therefore, it is argued that the stronger the organizational identification for employees the  
26 greater the extent of use of management innovation in their organization.  
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45 **Hypothesis 4:** Organizational identification will be positively associated with  
46 management innovation.  
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### 51 *The association between employee organizational commitment and management* 52 *innovation*

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55 When employees have higher levels of commitment to their organization, they are more willing  
56 to demonstrate positive work behavior, and more motivated to allocate their time and exert  
57 effort on behalf of the organization (Tsai & Yen, 2018; Chong & Eggleton, 2007). Further,  
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3 employees with high levels of commitment are more likely to be innovative in their workplace  
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5 (Xerri & Brunetto, 2013; Michaelis et al., 2009), suggesting and implementing new ideas with  
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7 the intention to improve the performance of their organization (Jafri, 2010). For example,  
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9 Toyota enhanced employee commitment as a strategy to achieve effective organizational  
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11 performance and subsequently became the leader in the use of innovative management  
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13 practices including lean production and the JIT system. Further, Kwak and Anbari (2006)  
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15 argued that employee organizational commitment is considered to be one of the factors that  
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17 influenced the successful use of Six Sigma, a type of management innovation. Similarly,  
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19 Darnall et al. (2008) maintained that employee commitment to the organization's  
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21 environmental strategy facilitated the use of another type of management innovation, an  
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23 environmental management system. Therefore, it is expected that when employees exhibit a  
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25 high level of organizational commitment, they are more likely to use management innovation  
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27 to a greater extent.  
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35 **Hypothesis 5:** Employee organizational commitment will be positively  
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37 associated with management innovation.  
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41 ***The mediating effect of organizational identification and employee organizational***  
42 ***commitment on the association between employee empowerment and management***  
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46 In line with the previous hypotheses, it is suggested that organizational identification and  
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48 employee organizational commitment will mediate the association between employee  
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50 empowerment and management innovation. Specifically, it is argued that empowering  
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52 employees is operationalised through their perception of strong organizational identification  
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54 and/or a high level of employee organizational commitment, which in turn results in a greater  
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56 extent of use of management innovation.  
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3 **Hypothesis 6:** Organizational identification mediates the association between  
4 employee empowerment and management innovation.  
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9 **Hypothesis 7:** Employee organizational commitment mediates the association  
10 between employee empowerment and management innovation.  
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## 14 **Method**

### 15 *Data collection*

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20 The study utilized the survey method to collect data, using both mail and online questionnaires.  
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22 Middle-level managers were chosen as they possessed the essential knowledge of their  
23 organization's operations in order to complete the questionnaire. The mail survey questionnaire  
24 was structured using Dillman's (2007) Tailored Design Method (TDM) which provides  
25 guidelines in respect to the style and format of the design of the questionnaire and its  
26 distribution procedures.  
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35 First, a random sample of 840 middle-level managers across Australian organizations were  
36 identified in the OneSource database (D&B Hoovers)<sup>1</sup>. The contact information was then  
37 verified by making telephone calls, checking the organizations' websites and the managers'  
38 LinkedIn accounts, with a final sample of 480 managers identified. The mail survey resulted  
39 in forty-six (46) complete questionnaires from the first and second mail-outs, a response rate  
40 of approximately 10%.  
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60 <sup>1</sup> OneSource is a dataset that provides in-depth business information of private and public companies.

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3 Second, an online survey using the Qualtrics platform was conducted with a total of 110  
4 completed questionnaires received. Therefore, a total of 156 completed questionnaires were  
5 available for data analysis.  
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11 Non-response bias for the mail questionnaires was tested by comparing the mean scores of the  
12 independent and dependent variables for the early respondents (i.e., first mail-out) with the late  
13 respondents (i.e., second mail-out) (Roberts, 1999). The results indicated that there were no  
14 significant differences, and therefore non-response bias was not considered to be a problem for  
15 the mail questionnaire. Similarly, in respect to the responses from Qualtrics, the mean scores  
16 for the first 55 responses were compared with the second 55 responses, and no significant  
17 differences were found. In addition, Harman's (1967) single-factor test was performed with the  
18 results revealing that the total variance explained by a single factor was 31.72%, which is below  
19 the recommended threshold of 50% (Podsakoff et al., 2003). Therefore, common method bias  
20 was not considered to be a problem.  
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### 37 **Measurement of variables**

#### 38 ***Management innovation***

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40 The study used Volberda et al.'s (2013) integrative framework to conceptualize and measure  
41 management innovation, which is based on the four dimensions suggested by Birkinshaw et al.  
42 (2008): management practices, management processes, management structure, and  
43 management techniques. The first three dimensions were measured using Vaccaro et al.'s  
44 (2012) six-item scale, with two items used to measure each dimension (using a 5-point Likert  
45 scale with anchors of "1 = Strongly Disagree" and "5 = Strongly Agree"). Consistent with  
46 Alshumrani et al. (2022) and Su and Baird (2018), the fourth dimension was measured based  
47 on the extent of use of six contemporary innovative management accounting techniques: TQM,  
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3 BSC, ABM, Benchmarking, Environmental Management Accounting (EMA), and Value chain  
4 analysis (using a 5-point scale with anchors of “1 = *Not at all*” and “5 = *To a great extent*”).  
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9 Exploratory factor analysis (EFA), with varimax rotation, was conducted on the 12 items used  
10 to measure management innovation. The items loaded onto two dimensions, which accounted  
11 for 63.84% of the total variance (see Table 1). The first dimension measured the use of  
12 management practices, management processes and management structures, and therefore was  
13 labelled “management innovation practices”. The second dimension contained measured the  
14 use of management techniques, and therefore was labelled “management innovation  
15 techniques”.  
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35 Confirmatory factor analysis (CFA) was conducted to determine the validity of the model for  
36 each construct of management innovation (see Appendix). The model for the management  
37 innovation practices dimension achieved an acceptable fit (CMIN/DF = 2.109; GFI = 0.968;  
38 CFI = 0.981; RMSEA = 0.085), with a Cronbach’s alpha score of 0.869, which exceeds the  
39 required 0.70 standard of reliability (Nunnally, 1978). The CFA results for the management  
40 innovation techniques dimension also exhibited a good model fit (CMIN/DF = 1.614; GFI =  
41 0.973; CFI = 0.990; RMSEA = 0.063), with a Cronbach’s alpha score of 0.890. Accordingly,  
42 the two dimensions were measured as the average score for the items loading on each  
43 dimension, with higher (lower) scores reflecting a higher (lower) level of extent of use of  
44 management innovation practices and management innovation techniques.  
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Insert Table 2 about here  
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### ***Employee empowerment***

Employee empowerment was measured using an adapted version of Pardo del Val and Lloyd's (2003) instrument with respondents required to indicate the extent to which current practices in their business unit reflected each aspect of employee empowerment (see Appendix) in respect to front-line staff in their organization (using 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 based on the average score of the four measures, with higher (lower) scores representing higher (lower) levels of employee empowerment.

### ***Organizational identification***

The organizational identification scale was adapted from Mael and Ashforth (1992) with respondents required to indicate the extent to which they agreed with each of the six statements (using a 5-point Likert scale with anchors of "1 = *Strongly disagree*" and "5 = *Strongly agree*"). EFA was conducted with the results indicating that the six items loaded onto one factor. However, CFA indicated that three items had standardized 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). Goodness of fit scores could not be determined as there were only three items.

### ***Employee organizational commitment***

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3 Employee organizational commitment was measured using an adapted version of Cook and  
4 Wall's (1980) scale with respondents required to indicate the extent to which they agreed with  
5 each of the nine statements (using a 5-point Likert scale with anchors of "1 = *Strongly*  
6 *Disagree*" and "5 = *Strongly Agree*").<sup>2</sup> EFA (see Table 3) revealed that the nine items loaded  
7 onto two dimensions, which accounted for 61.04% of the total variance. The first dimension  
8 included six items which reflected the degree of employees' involvement with their  
9 organizations, and therefore was labelled "employee organizational involvement". The second  
10 dimension included three items, which all reflected employees' attachment to their  
11 organization, and hence was labelled "employee organizational attachment".  
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Insert Table 3 about here  
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30 CFA was conducted to assess the validity of these two dimensions. The results for employee  
31 organizational involvement revealed that two items had standardized factor loadings less than  
32 0.6 and hence, they were removed. The remaining four items exhibited a good model fit  
33 (CMIN/DF = 2.709; GFI = 0.991; CFI = 0.995; RMSEA = 0.105) (see Table 2), with a  
34 Cronbach's alpha of 0.872. However, while the goodness of fit measure for employee  
35 organizational attachment could not be determined as there were only three items, the  
36 Cronbach's alpha score of 0.793 supported the reliability of the measure.  
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<sup>2</sup> Reverse Scores. See appendix.

## Results

### *Descriptive statistics*

Table 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 organizational identification is high (mean score = 3.99). Finally, in respect to employee organizational commitment, the mean score for employee organizational involvement is 4.11, while it is much less for employee organizational attachment (2.70).

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Insert Table 4 about here  
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Insert Table 5 about here  
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### **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 5 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 5 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 constructs (Fornell & Larcker, 1981). The results in Table 6 provide support for the discriminant validity.

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Insert Table 5 about here  
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Insert Table 6 about here  
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### *The results of structural equation modelling*

This study used structural equation modelling (SEM) to test its hypotheses, with the results of the path analysis presented in Table 7 and shown in Figure 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>3</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*.

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

Regarding the influence of organizational identification on management innovation, the results show a significant positive association between organizational identification and management innovation techniques ( $\beta = 0.15$ ,  $p = 0.03$ ). Hence *Hypothesis 4* is partially supported. Furthermore, employee organizational involvement is positively associated with management innovation practices ( $\beta = 0.20$ ,  $p = 0.01$ ), and employee organizational attachment exhibited a

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<sup>3</sup> Values of CMIN/DF <5; CF  $\geq$  0.95, GFI < 0.90, AGFI < 0.90 and RMSEA < 0.08 (Hooper et al., 2008; Hu & Bentler, 1999) are considered to be good.

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3 positive association with both management innovation practices ( $\beta = 0.21$ ,  $p = 0.00$ ) and  
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5 management innovation techniques ( $\beta = 0.20$ ,  $p = 0.00$ ). Therefore, *Hypothesis 5* is partially  
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7 supported.  
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23 ***The mediating role of organizational identification and employee organizational***  
24 ***commitment on the association between employee empowerment and management***  
25 ***innovation***  
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28 Bootstrapping with a bias-corrected confidence interval method was used to test the mediating  
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30 effect of organizational identification and employee organizational involvement (MacKinnon  
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32 et al., 2002) in the association between employee empowerment and management innovation.  
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34 Table 8 indicates that organizational identification partially mediates the positive association  
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36 between employee empowerment and management innovation techniques, as the confidence  
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38 interval (CI) (lower bound (LB) of 0.010 and upper bound (UB) of 0.120) does not cross zero.  
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40 Accordingly, *Hypothesis 6* is partially supported. Furthermore, employee organizational  
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42 involvement partially mediates the positive association between employee empowerment and  
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44 management innovation practices, as the CI (LB of 0.001 and UB of 0.141) does not cross zero.  
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46 Hence, *Hypothesis 7* is also partially supported.  
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## Discussion and conclusion

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 organizations, the higher the extent of use of management innovation. Therefore, it is recommended that organizations 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 organizational processes and the management of their departments by using and implementing appropriate management innovations. Hence, organizations should recognize the importance of employee empowerment practices and emphasize the implementation of empowerment practices to enable employees to participate and drive management innovation in their organizations.

The findings also highlight the mediating role of organizational identification and employee organizational commitment in the association between employee empowerment and management innovation. The results reveal that organizational identification and employee organizational involvement partially mediate the association between employee empowerment and management innovation. First, the findings indicate that, in addition to the direct influence of employee empowerment on management innovation techniques, the extent of use of management innovation techniques is also influenced by the indirect effect of employee empowerment through organizational identification. In other words, the impact of employee empowerment on management innovation techniques occurs due to the effect of empowerment

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3 on organizational identification, and the subsequent influence of organizational identification  
4 on management innovation techniques. Specifically, sharing the authority with middle-level  
5 managers and providing them the opportunity to directly collaborate in the decision-making  
6 processes is more likely to enhance their identification with the organization, with their  
7 enhanced organizational identification encouraging them to increase the rate at which they use  
8 and implement management innovations techniques.  
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19 Therefore, it is recommended that organizations should place more emphasis on delegating the  
20 authority of decision making to middle-level managers, so as to provide them with more  
21 flexibility and enable them to introduce innovative ways of managing their tasks. At the same  
22 time, organizations should reflect on the importance of enhancing their employees' level of  
23 organizational identification. Hence, while the promotion of empowerment practices represents  
24 one way in which this can be achieved, organizations should also endeavor to take other actions  
25 to enhance the organizational identification of their employees due to the subsequent positive  
26 influence on management innovation.  
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39 Secondly, employee organizational involvement was found to mediate the association between  
40 employee empowerment and management innovation practices. Hence, in addition to the direct  
41 influence of employee empowerment on management innovation practices, the extent of use  
42 of management innovation practices is also attributable to the indirect effect of employee  
43 empowerment through employee organizational involvement. This finding confirms the  
44 importance of sharing decision-making authority with employees in order to enhance their  
45 commitment to the organization (Seibert et al., 2011; Kirkman & Rosen, 1999). In particular,  
46 open formal channels of exchanging information and ideas between an organization and its  
47 employees, as well as giving employees the opportunity to participate in setting and achieving  
48 organizational objectives will increase their commitment, and subsequently result in enhancing  
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3 their ability to use management innovation practices to a greater extent (Tsai & Yen, 2018).  
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5 Therefore, it is suggested that organizations will benefit from management innovation if they  
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7 develop a workplace that promotes empowerment. Specifically, this will enhance middle-level  
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9 managers' commitment and motivate them to put more time and energy into introducing  
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11 management innovation practices. Further, given the importance of employee organizational  
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13 commitment in enhancing management innovation, organizations should also consider  
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15 engaging in other actions which may enhance the level of employee organizational  
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17 involvement (i.e., commitment).  
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24 Finally, employee organizational attachment, the other dimension of employee organizational  
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26 commitment, was found to be associated with both management innovation practices and  
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28 techniques. Therefore, this result suggests that managers should increase the level of their  
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30 employees' commitment in respect to their attachment, so as to increase their extent of use of  
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32 management innovation, both practices and techniques. However, employee organizational  
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34 attachment was not found to be associated with employee empowerment, and therefore, it does  
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36 not mediate the association between employee empowerment and management innovation.  
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42 The study used a survey and is therefore subject to the usual limitations of that method,  
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44 including social desirability bias, which creates the potential for measurement error, and the  
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46 lack of evidence to enable the establishment of a causal relationship between variables  
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48 (Singleton & Straits, 2010). Hence, while the literature emphasizes the importance of employee  
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50 empowerment for organizational effectiveness (Liu et al., 2007; Spreitzer, 1995) and the results  
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52 highlight the positive influence of employee empowerment on management innovation, future  
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54 research may further investigate this association by conducting in-depth case studies through  
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56 interviews. In addition, while the findings of this study provide empirical evidence of the role  
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58 of employees in using management innovation, future research may explore and investigate the  
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3 influence of other organizational factors on management innovation. Future research may also  
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5 empirically examine the effectiveness of management innovation in terms of its influence on  
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7 organizational performance and other organizational outcomes.  
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For Peer Review

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## Appendix: 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 organization 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 organization 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 organization 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	
<b>Goodness-of-fit:</b> CMIN/DF = 1.592; GFI = 0.990; AGFI = 0.951; CFI = 0.997; RMSEA = 0.062				

### Organizational identification

Constructs and items	Factor loading	t-value	SE	Cronbach alpha
				0.767
1. When I talk about my organization, I usually say 'we' rather than 'they'.	0.624	-	-	
2. This company's successes are my success.	0.764	-	-	
3. When someone praises my organization, it feels like a personal compliment.	0.790	-	-	
<b>Goodness-of-fit:</b> Scores not available as only three items retained				

### Employee organizational commitment

Constructs and items	Factor loading	t-value	SE	Cronbach alpha
<b>Employee organizational involvement</b>				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 organization	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 organization 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 organization 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

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***Employee organizational attachment***

0.779

- |  |       |   |   |
|--|-------|---|---|
| 1. I sometimes feel like leaving this organization for good          | 0.784 | - | - |
| 2. I am not willing to put myself out just to help the organization. | 0.617 | - | - |
| 3. I would not advise a close friend to join my organization         | 0.813 | - | - |

**Goodness-of-fit:** Scores not available as only three items retained

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For Peer Review





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1 message

**Applied Economics** <onbehalf@manuscriptcentral.com>  
Reply-To: olin-appliedeconomics@email.wustl.edu  
To: arienafiah@gmail.com

Sun, Feb 26, 2023 at 2:06 PM

26-Feb-2023

MS Number: APE-2022-0984

Title: "The mediating role of organizational identification and employee organizational commitment on the association between employee empowerment and management innovation"

Dear Professor Ariyani

Thank you for agreeing to review this manuscript. In order to be fair to our authors, we respectfully ask that you complete your review by 12-Mar-2023.

The journal now receives very many more submissions than we have space to publish, therefore we can only take the very best work and the editor would be grateful if you would bear this in mind when reviewing the manuscript. Similarly, if you find the manuscript promising, specific suggestions for reducing its length, in addition to your other comments, would also be welcome. PLEASE DO NOT PUT YOUR RECOMMENDATION in the review.

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Once again, thank you for your help with the journal. It is very much appreciated.

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2 messages

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Thu, Mar 9, 2023 at 11:45 AM

Dear Prof. Nafiah Ariyani

Re: The mediating role of organizational identification and employee organizational commitment on the association between employee empowerment and management innovation APE-2022-0984

Thank you for reviewing this manuscript. We are very grateful for your timely response and continued support of the journal.

We would be interested to hear your experience of reviewing for us today, please click the following link to complete a short survey: <https://survey.alchemer.eu/s3/90329429/Taylor-Francis-peer-review-survey?ac=RAEC>

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**ariyani nafiah** <arienafiah@gmail.com>  
To: RAEC-peerreview@journals.tandf.co.uk

Fri, Mar 10, 2023 at 6:59 AM

Prof. Mark Taylor

Editor, Applied Economics incorporating Applied Financial Economics

Thank you for allowing me to review the APE-2022-0984 manuscript.

Henceforth, please be willing to provide me with the reviewer certificate.

I very much appreciate your help.

Sincerely,

Nafiah Ariyani

[Quoted text hidden]

Dear Editor

Thank you for sending the manuscript to me.

In the following, I submit my comments and suggestions for manuscript ID APE-2022-0984.

The theme of this manuscript is interesting, but it needs to be improved.

All my comments and suggestions on the manuscript are as follows.

1. The introduction needs to lay out more clearly what the gap in the literature is and what platforms it refers to.
2. The authors should add the “Management Implication” section and “Directions for further research.”
3. Words in brackets should be avoided. Give more explanations with concise sentences. For instance: In line 20: 27, etc.
4. Consistent in writing citations. If using pages, all citations must include the page. Customize with templates. For instance: in lines 11 & 18.
5. References need to be updated with newer years.
6. The author should add the study limits

I hope this consideration can help you.

Thank you for trusting me.



Nafiah Ariyani