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**Opportunities to Participate in Formal and Informal Vocational Learning Activities and
Work-Related Outcomes in Small Professional Services Businesses**

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Abstract

Small businesses are characterised by resources constraints, therefore their managers need to know the exact nature of additional benefits, beyond knowledge and skill acquisition, that might accrue from employee participation in different types of learning activities. However, research that simultaneously examines the attitudinal and behavioural outcomes of opportunities to participate in formal and informal learning activities is sparse, especially in small businesses. The present study addresses this area of neglect by exploring associative relationships between opportunities for employees to participate in (1) formal learning activities and (2) informal learning activities and three important work-related outcomes: affective commitment; innovative behaviours; and work engagement. Data from 203 respondents in small professional services businesses were analysed and the results provide preliminary evidence that opportunities to participate in each type of learning activity is associated with differing outcomes. Opportunities to participate in formal learning activities was positively associated with heightened levels of affective commitment, work engagement and innovative behaviours, while opportunities to participate informal learning activities was positively related to work engagement. We provide suggestions for future research and outline practical implications of our analysis.

Key words: formal learning, informal learning, affective commitment, innovative behaviours, work engagement, small business

Introduction

Within organisations, the provision of formal and informal learning experiences comprises a central component of the organisation's array of human resource management (HRM) practices that collectively constitute its HRM system (Bowen and Ostroff 2004). The overall goal of the HRM system is to attract, develop, and retain talented employees (Holland, Sheehan and De Cieri 2007). HRM practices within the system that strategic HRM theorists have found to be related to organisational performance are known as 'HR enhancing practices' and these practices include, for example, training, incentive pay and employee participation (Rauch and Hatak 2016). According to strategic HRM theory, HR-enhancing practices positively influence employees' ability, motivation and opportunity to perform for the benefit of the organisation (Paauwe 2009). Some studies located in smaller enterprises have found a positive relationship between adoption of HR-enhancing practices and organisational performance and these studies include measures that assess the presence of training opportunities (e.g., Lai, Saridakis, and Johnstone 2017; Sheehan 2014; Wu et al. 2015). In sum, HR-enhancing practices have been shown to improve organisational performance in terms of outcomes such as employee retention, labour productivity and financial performance, and practices aimed at building workforce knowledge and skills are highly influential within HR-enhancing practices (Rauch and Hatak 2016).

Given the important contribution that workforce development can make to organisational and national economic performance, several studies have been conducted within Australia through the National Centre for Vocational Education Research

(NCVER) (e.g., Billett et al. 2015) and through global agencies such as the Organisation for Economic Co-operation and Development (OECD) (e.g., Field et al. 2010) with the aim of identifying effective models for continuing vocational and education training. In view of the large knowledge and skills base vested in small businesses (Storey 2018), some of these studies and several others have sought to identify strategies that might engage small businesses in structured vocational education and training activities that meets the needs of small businesses (e.g., Baumeler and Lamamra 2018; Dawe and Nguyen 2007). Employees in small businesses are much less likely to get access to employer-provided, structured T&D opportunities than their counterparts in large businesses (Shah 2017). It has long been recognised that small businesses are reluctant to engage with taught courses and that there is a need to look for other approaches to support learning in small businesses (Billett, Ehrich, and Hernon-Tinning 2003; Holden and Hamblett 2001; Matlay 1997). One such approach involves helping owner-managers to develop the competencies needed to be effective enablers of informal learning (Kitching 2008).

Views differ on the relative merits of employee involvement in formal, structured training and development (T&D) activities and employee involvement in informal learning activities (e.g., Clardy 2018; McGuire and Gubbins 2010; Van Der Heijden et al. 2009). A widely held view is that informal learning activities make by far the greatest contribution to the formation of individuals' vocational skills and knowledge (Clardy 2018; Jeong et al. 2018). However, there are several potential constraints on the efficacy of informal workplace learning (Cerasoli et al. 2018; Billett 1995). For example, informal learning can cause detrimental work practices to persist and employees may learn bad habits or the wrong lessons (Cerasoli et al. 2018; Poel 2014). Reviews of T&D literature have identified the multiple benefits of formal, structured T&D for individuals, teams, organisations, and society (e.g., Aguinis and Kraige 2009). Nevertheless, as Grossman and Salas (2011, 103) noted, "Although organisations invest billions of dollars in training every year, many trained competencies reportedly fail to transfer to the workplace". This phenomenon, known as the 'transfer problem', constitutes a major problem for organisations, because trainees are not changing their behaviour and improving their performance after participation in costly T&D programs (Saks and Burke 2012).

This paper contributes to the theoretical conversations in the literature on the relative merits of employee involvement in formal, structured T&D activities and employee involvement in informal learning activities. We do so by exploring associative relationships between opportunities for employees to participate in (1) formal learning activities and (2) informal learning activities and three important work-related outcomes: affective commitment; innovative work behaviours (IWBs); and work engagement.

In terms of addressing limitations of the literature, the present study is significant for two main reasons. First, the study focuses on small professional services businesses, which is a setting that has received limited research attention (Nolan and Garavan 2016). In these businesses, employee access to continuous learning is particularly important, because employees' knowledge and skills are the key sources of competitive advantage (Barney 1991). Second, quantitative studies that examine relations between employees' opportunities to learn and affective and behavioural outcomes in small businesses are rare, but such studies are warranted because several distinguishing characteristics of small businesses are likely to affect the process and outcomes of workplace learning (Coetzer et al. 2017; Kelliher and Henderson 2006).

From a practical viewpoint, this line of inquiry is also important for at least two reasons. First, beyond knowledge and skill acquisition, managers need to know the exact nature of additional benefits that might accrue from employee participation in different types of learning activities. For example, managers who are concerned about employee retention may prefer to encourage employee participation in the types of learning activities that might also enhance employees' affective organisational commitment (Meyer 2017). On the other hand, managers who are mainly concerned about improving employees' job performance may prefer to encourage employee participation in the types of learning activities that might also foster their work engagement (Bakker 2017). Second, in some organisations, such as small businesses, there are limitations on employee access to formal learning activities due to budgetary constraints and because it is problematic to 'backfill' when employees are away from work for training (Billett et al. 2015). Managers in these organisations may be motivated to purposefully promote and support informal learning activities rather than leaving it to chance if they are aware that informal learning can be leveraged to develop important knowledge and skills and other valued outcomes, such as the outcomes of learning that we examine in the present study.

Theoretical framework and hypotheses development

In the following sub-sections we use theory and research to advance conceptual arguments for relations between opportunities for employees to participate in the two types of learning activities (i.e. formal and informal) and three potential positive 'side-effects' of participation in learning: work engagement; affective commitment; and innovative work behaviour (IWB). In regard to IWB, we examine the direct effects of opportunities to learn on IWB, and the indirect effects through affective commitment and work engagement.

Opportunities to learn and work engagement

To develop theoretical arguments for a link between opportunities to learn through formal and informal learning activities and work engagement, we draw on Job Demand-Resources (JD-R) theory (Bakker and Demerouti 2017). The theory posits that an amalgam of job resources and personal resources predicts job performance via work engagement (Bakker and Albrecht 2018). Therefore, job resources and personal resources are two broad categories of the 'drivers of work engagement' (Bakker and Demerouti 2008; Schaufeli and Bakker 2004). In JD-R theory, job demands (e.g., work pressure, emotional demands) are aspects of the job that require sustained physical and/or psychological effort (Xanthopoulou et al. 2007). On the other hand, job resources (e.g., autonomy, social support, learning opportunities) are features of the job that: (a) are beneficial in accomplishing work-related goals; (b) lessen job demands and related physiological and psychological costs; and (c) fuel personal learning and development (Bakker and Demerouti 2007). Job resources are *intrinsically* motivating, because they help to fulfil the needs for autonomy, relatedness and competence (Van den Broeck et al. 2008). Additionally, job resources are *extrinsically* motivating, because they help achieve work-related goals (Bakker and Albrecht, 2018). Job resources are particularly significant and increase motivational potential when employees contend with high job demands (Bakker and Demerouti 2007). Job demands predict exhaustion, while job resources initiate a motivational process that leads to work engagement and subsequently to higher performance (Bakker 2017; Bakker et al. 2004; Bakker and Demerouti 2008). Personal resources include characteristics such as optimism, resilience and self-efficacy (Xanthopoulou et al. 2007). However, in this paper we focus solely on job resources and

contend that opportunities to learn through participation in T&D events and opportunities to learn through practice and social interaction with colleagues and supervisors constitute important job resources and are thus ‘drivers’ of work engagement. Although opportunities for learning is a highly suggested antecedent of engagement, the empirical evidence to support this assertion is sparse (Wollard and Shuck 2011).

Research on work engagement suggests that high levels of work engagement is beneficial for employee well-being as well as the organisation’s bottom-line (Bakker 2017). Based on previous research on work engagement, which suggests that opportunities to learn constitute an important job resource that fuels work engagement, the following hypothesis is proposed:

Hypothesis 1: Both opportunities to participate in formal, structured T&D activities and opportunities to participate in informal learning activities (i.e. practice-based and interactional learning) will be positively related to work engagement.

Opportunities to learn and affective commitment

Affective commitment refers to an individual’s emotional attachment to an organisation, identification with the organisation and its goals, and involvement in the organisation (Meyer 2017). Therefore, affective commitment is conceptually distinct from work engagement, because affective commitment is conceptualised as a state of positive attachment to the larger work organisation (Macey and Schneider 2008). The key referent of work engagement is the job, not the organisation (Macey and Schneider 2008).

In a meta-analytic review, which included a review of the antecedents of organisational commitment, Meyer et al. (2002) found that work experiences related to perceived organisational support (POS) was the most influential antecedent variable associated with affective organisational commitment. Employees’ POS refers to their “general beliefs concerning how much the organisation values their contributions and cares about their well-being” (Eisenberger et al. 2001, 42). Meyer et al. (2002) used the results of their meta-analysis to argue that managers who are seeking to engender employees’ affective organisational commitment, must first show their own commitment through fostering a supportive work environment. Such a work environment would include the provision of opportunities for employees to participate in formal, structured T&D events (Grossman and Salas 2011).

Most employees would view opportunities to participate in formal, structured T&D as organisation-provided benefits, because T&D can improve their job performance, career prospects, and employability (Aguinis and Kraiger 2009). Access to formal, structured T&D may motivate employees to reciprocate through positive organisational behaviours, such as higher levels of in-role and extra-role performance, as well as displaying greater loyalty to the organisation (Meyer et al., 2002; Wayne, Shore, and Linden 1997). Given that small businesses are characterised by resource constraints (Josefy et al. 2015), access to formal, structured T&D opportunities will be highly valued by their staff and stimulate a strong sense of obligation and felt need to reciprocate (Pajo et al. 2010). In sum, based on the results of prior studies of antecedents and consequences of affective commitment (Meyer et al. 2002), it could reasonably be argued that participation in formal, structured T&D activities will contribute to more affectively committed employees.

By contrast, opportunities to learn informally through participation in practice and social interaction are unlikely to contribute to employees' affective commitment. This is because, as Eraut (2004, 249) has noted, "informal learning is largely invisible, because much of it is either taken for granted or not recognised as learning." In other words, informal learning is commonly viewed as just "part of the job", or simply as a means for "doing the job properly" (Tannenbaum 2010, 306). Similarly, Billett et al. (2015, 34) has asserted that "much of the learning arising through wholly work-based experiences across working lives remains unrecognised." Accordingly, we propose the following:

Hypothesis 2: Opportunities to participate in formal, structured T&D activities, but not opportunities to participate in informal learning activities, will be positively related to employees' affective commitment.

Opportunities to learn and innovative work behaviours

Learning is frequently referred to as a key driver of innovation, either as input to innovation, or as an integral part of the innovation process (e.g., Olsen 2016; Sung and Choi 2014). Fundamentally, IWB involves "employees finding, suggesting and implementing new and beneficial work-related ideas" (De Spiegelare et al. 2014, 319). Thus, innovation is widely viewed as a multi-stage process with different behaviours needed at each stage. De Jong and Den Hartog (2010) identified four categories of IWBs: (1) idea exploration (e.g., searching for ways to improve current products, services, and processes); (2) idea generation (e.g., combining and reorganising existing concepts to solve problems or improve performance); (3) idea championing (e.g., seeking support, building coalitions); and (4) idea implementation (e.g., developing new products or work processes, testing, and modifying them). However, innovation processes are typified by discontinuous activities, rather than separate, sequential stages (Scott and Bruce 1994). Thus, there are multiple ways in which staff can contribute to innovation processes in organisations, because they can be involved in any combination of the IWBs.

Research has identified several conditions in the work environment that can act as stimulants or obstacles to innovation (Montani, Odoardi, and Battistelli 2014). One important condition is access to job resources, including access to learning opportunities (Choi 2004). As Hammond et al. (2011, 92) noted, "As individuals gain knowledge and experience, they build a larger and more integrated repository of response possibilities, which include ideas, facts, and cognitive scripts, from which to draw creative ideas to problems." Therefore, access to leading-edge knowledge through employee participation in T&D activities can increase a firm's propensity to innovate (Bauernschuster, Falck, and Heblich 2009). Similarly, employee enactment of IWBs is likely to be facilitated when employees are afforded opportunities to engage in practice-based and interactional learning. Consistent with the foregoing arguments, we propose:

Hypothesis 3: Both opportunities to participate in formal, structured T&D activities and opportunities to participate in informal learning activities will be positively related to employees' propensity to enact IWBs.

Mediators of the opportunities to learn-IWB relationship

Previously, we argued that opportunities to learn through participation in T&D activities, but not opportunities to learn through informal learning activities, would enhance employees'

affective commitment. Employees who are affectively committed to their work organisation are likely to be concerned about the organisation's sustainability and thus demonstrate a propensity to enact IWB, because such behaviours are beneficial to the organisation (Jafri 2010; Xerri and Brunetto 2013). Likewise, work engagement has been linked to IWB, both conceptually and empirically. To illustrate, Macey and Schneider (2008), contend that engagement has three facets: trait engagement, psychological state engagement, and behavioural engagement. The authors believe that psychological state engagement (e.g., feelings of vigour and absorption) is an antecedent of behavioural engagement and that engagement behaviours include IWBs. In a study involving 84 female school principals and 190 teachers, Bakker and Xanthopoulou (2013) demonstrated empirically that engagement is linked to IWB. They found positive associations between principals' levels of work engagement and teachers' ratings of principals' creative task performance. Creativity is a fundamental element of IWB, particularly at the start of the innovation process when work-related problems or performance deficiencies become apparent and ideas are generated to address a perceived need for innovation (de Jong and den Hartog 2010). Accordingly, we propose the following:

Hypothesis 4(a): The positive relationship between opportunities to participate in formal, structured T&D events and employees' propensity to enact IWBs will be mediated by both work engagement and affective commitment.

Hypothesis 4(b): The positive relationship between opportunities to participate in informal learning activities and employees' propensity to enact IWBs will be mediated by work engagement.

Figure 1 illustrates our research model.

(Insert Figure 1 here)

Method

Participants and procedures

Participants were employees occupying professional roles in privately-owned and operated professional services businesses with 5-50 employees. We purposefully chose these participants for essentially three reasons. First, they are knowledge workers and are required to remain abreast of industry trends, maintain their technical knowledge, and develop the vocational skills required to perform their role (van Rooij and Merkebu 2015). Second, there has been limited research on human resource development in small and medium professional service businesses (Nolan and Garavan 2016). Third, as noted, there is scant research located in businesses with fewer than 50 employees that examines associative relationships between opportunities for employees to participate in formal learning activities and informal learning activities and work-related outcomes.

We used business directories and internet searches to identify suitable businesses in Perth, Western Australia. The businesses included accounting and finance firms, engineering consultancies, property agencies, and other types of professional services firms. The researchers personally visited the identified businesses and met with the owner/manager to explain the nature and purpose of the research, and to request their participation by allowing access to their employees. On occasion, one of the researchers would also meet with the

employees to explain the nature and purpose of the study. Depending on the size of the business and the business owner's permission, up to 10 questionnaire packages were left with the businesses which had agreed to participate. Each package contained an information letter, questionnaire, and envelope for the completed questionnaire. The participants were told to read the information letter and then complete the survey in their spare time. Participating employees were told to place the completed questionnaire in the envelope provided and seal it. The participant's name was not requested in order to ensure confidentiality. The sealed envelopes were left with the businesses' receptionists for collection by the researchers on an agreed date. A total of 52 small businesses were visited with 39 agreeing to participate. A total of 232 completed questionnaires were received. Of the returned questionnaires, 203 (86%) were fully completed and usable.

Measures

Formal learning: Opportunities to participate in formal, structured T&D events was measured using six items adopted from Pajo et al. (2010). Participants were asked to indicate the number of times in the last 12 months that they had participated in six different types of T&D events, such as training courses run by outside companies, and formal coaching or mentoring programs. The six T&D events comprised three types of training events and three types of development events. Responses were captured on a 7-point scale ranging from 0 to 'more than 5'. **In this study, we recorded a reliability of 0.856 for formal learning.**

Informal learning: Opportunities to participate in informal learning activities was measured using the 12-item Learning Potential of the Workplace (LPW) scale, which was developed by Nikolova et al. (2014). Opportunities to learn independently through practice was assessed using the three LPW scale items relating to learning through reflection (e.g., "In my work I am given the opportunity to contemplate about different work methods") and the three items relating to learning through experimentation (e.g., "In my job I can try different work methods even if that does not deliver any useful results"). Opportunities to learn through social interaction was assessed using the three LPW scale items relating to learning from colleagues (e.g., "My colleagues advise me if I don't know how to carry out certain tasks"), and the three items relating to learning from the workplace supervisor (e.g., "My supervisor helps me to see my mistakes as a learning experience"). Responses were coded 1 = 'strongly disagree' through to 7 = 'strongly agree'. In the present study, we recorded a reliability of .888 for learning through reflection, 0.805 for learning through experimentation, 0.855 for learning from colleagues, and 0.858 for learning from the workplace supervisor.

Affective commitment: We measured affective commitment by using six items from the scale developed by Meyer and Allan (1991). Examples of items are as follows: "I would be very happy to work at this company until I retire" and "I do not feel emotionally attached to this company." Responses were coded 1 = 'strongly disagree' through to 7 = 'strongly agree'. In the present study we recorded a reliability of 0.80.

Innovative work behaviour (IWB): Participants enactment of IWBs was measured using six items that assessed the key IWBs identified by de Jong and den Hartog (2010) and a 7-point frequency scale ranging from 'never' to 'always'. The behaviours included idea exploration, generation, championing, and implementation. Sample items are as follows: "In your job how often do you... acquire new knowledge externally to improve the way you do your job; make suggestions to improve current products or services; convince people to

support an innovative idea; and systematically introduce innovative ideas into work practices”. The α reliability was 0.92 in this study. This scale relied upon the self-rating of individuals’ IWBs, which was considered appropriate based on prior studies such as Ng and Feldman (2010) and Prieto and Pe’rez-Santana (2014). Moreover, employees are better placed than supervisors to know how innovative ideas are generated, championed and implemented (Ng and Feldman 2013; Montani et al. 2014). Furthermore, research has found that self-rating and supervisor-rating results converge (Ng and Feldman 2013).

Work engagement: Participants’ levels of work engagement was measured using the Utrecht Work Engagement Scale-9 (UWES-9), which includes the three dimensions of vigour, dedication and absorption (Schaufeli et al. 2006). In this scale, three items are used to measure each dimension of work engagement. Sample items are as follows: “At my work, I feel bursting with energy” (vigour); “I am enthusiastic about my job” (dedication); and “I am immersed in my work” (absorption). Responses were coded 1 = ‘strongly disagree’ through to 7 = ‘strongly agree’. In this study, the α reliability of the entire nine-item scale was 0.90.

Data analysis

During early data analysis, means and standard deviations were determined and correlations among the study variables were generated. In order to determine the measurement model fit, we conducted a Confirmatory Factor Analysis (CFA) using AMOS version 25 (Hair et al. 2010). We tested six nested models and the goodness of fit of the different models were compared with one another. In this study, we determined the goodness of fit with the following indices: CMIN/DF (χ^2/df) < 0.05; Chi square (χ^2) p value > 0.05; root mean square residual (RMR) < 0.08; goodness-of-fit index (GFI) \geq 0.90; comparative fit index (CFI) \geq 0.90; Tucker-Lewis index (TLI) \geq 0.95; root mean square error of approximation (RMSEA) < 0.05, PCLOSE > 0.05 (Hu and Bentler 1999; Chau 1997). We proceeded with the analysis using the four-factor model because it had the best goodness of fit indices among the six models (see Table 1).

(Insert Table 1 about here)

A two-step hierarchical regression was used to test direct relationships in this study, that is, hypotheses 1, 2, and 3. **We used hierarchical regression in order to determine the amount of variance that the specific variable of interest explains in a criterion variable in each step.** Furthermore, Hayes’ (2013) PROCESS macro (version 3) was used to test the indirect effects and data were bootstrapped to 5000 at 95% bias-corrected confidence intervals. **We used PROCESS macro model in regression because it is considered to be a more rigorous analytical tool for testing mediating effects when compared to path analysis in Structural Equation Modelling (SEM) (Hayes 2013).** Specifically, we used Model 4 to test whether work engagement and affective commitment are mediator variables in the relationship between opportunities to participate in formal T&D and IWB (hypotheses 4a) and whether work engagement is a mediator variable in the relationship between opportunities to participate in informal learning and IWB (hypotheses 4b).

When testing for common method bias (CMB), we were guided by Podsakoff et al. (2003) and used common latent factor (CLF) analysis (i.e., the difference between CFA with no CLF and CFA with CLF). The results suggest that CMB was not a concern, because all the differences were less than 0.2.

Results

Table 2 shows the means, standard deviations, correlations, and CFA results. The results confirm adequate discriminant validity, because: MSVs are above AVEs; AVEs exceed ASVs; and the square root of AVEs exceeds inter-construct correlations (Fornell and Larcker 1981; Hair et al. 2010). The results also show adequate convergent validity, because AVEs and standardised factor loadings exceed 0.50, and CRs exceed AVEs (see Figure 2) (Hair et al. 2010). Furthermore, CRs and Cronbach's α of all the items exceed 0.70, which confirms adequate construct reliability (Hair et al. 2010).

(Insert Table 2 and Figure 2 about here)

Table 3 shows results relating to hierarchical regression of opportunities to participate in formal T&D and opportunities to participate in informal learning on work engagement. In model 1, the results show a significant and positive relationship between opportunities to participate in formal T&D and work engagement. In model 2, the results show significant and positive relationships between: opportunities to participate in formal T&D and work engagement ($\beta = 0.153$, $p < 0.05$); and opportunities to participate in informal learning and work engagement ($\beta = 0.372$, $p < 0.001$). The results suggest that opportunities to participate in informal learning has stronger relationship with work engagement than opportunities to participate in formal T&D, which support hypothesis 1.

Table 3 also shows results relating to hierarchical regression of opportunities to participate in formal T&D and opportunities to participate in informal learning on affective commitment. In model 1, the results indicate a significant and positive relationship between opportunities to participate in formal T&D and work engagement. In model 2, the results show significant and positive relationships between opportunities to participate in formal T&D and affective commitment ($\beta = 0.266$, $p < 0.001$). However, the results show no significant relationship between opportunities to participate in informal learning and affective commitment ($\beta = -0.012$, $p > 0.05$). Thus, opportunities to participate in formal, structured T&D, but not opportunities to participate in informal learning, increases employees' affective commitment. The results support hypothesis 2.

Finally, Table 3 shows the results for hierarchical regression of opportunities to participate in T&D and opportunities to participate in informal learning on IWB. In model 1, the results indicate a significant and positive relationship between opportunities to participate in T&D and IWB. In model 2, the results show significant and positive relationship between opportunities to participate in T&D and IWB ($\beta = 0.247$, $p < 0.001$). However, no significant relationship was found between opportunities to participate in informal learning and IWB. This means that opportunities to participate in T&D, but not opportunities to participate in informal learning, is positively related to IWB. The results partially support hypothesis 3.

(Insert Table 3 about here)

Table 4 shows results for affective commitment and work engagement mediating the opportunities to participate in T&D–IWB relationship. The table also shows results relating to work engagement mediating the opportunities to participate in informal learning–IWB relationship. The results show significant and positive relationships between: affective commitment and IWB; opportunities to participate in T&D and IWB; and opportunities to participate in T&D and affective commitment. In addition, the results show that affective

commitment mediates the relationship between opportunities to participate in T&D and IWB ($B = 0.08$, $LLCI = 0.03$, $ULCI = 0.16$). This result partially supports hypothesis 4a.

The results also indicate significant and positive relationships between: opportunities to participate in T&D and work engagement; opportunities to participate in T&D and IWB; and work engagement and IWB. The results also indicate that work engagement mediates the relationship between opportunities to participate in formal T&D and IWB ($B = 0.03$, $LLCI = 0.01$, $ULCI = 0.08$). Therefore, hypothesis 4a is partially supported.

Finally, the results indicate significant and positive relationships between: opportunities to participate in informal learning and work engagement; and work engagement and IWB. However, there was no significant relationship between opportunities to participate in informal learning and IWB. The results also show that work engagement mediates the relationship between opportunities to participate in informal learning and IWB ($B = 0.14$, $LLCI = 0.05$, $ULCI = 0.25$), which supports hypothesis 4 b.

(Insert Table 4 about here)

Discussion

This paper's findings are important in theory and practice. Regarding theory, the results contribute to theoretical conversations about the relative merits of employee participation in formal, structured T&D activities and employee involvement in informal learning activities (see, for example, Clardy 2018; McGuire and Gubbins 2010; Van Der Heijden et al. 2009). From a practical perspective, the results cast light on the additional benefits that might accrue from employee participation in different types of learning activities and these insights enable small business managers to make more informed decisions regarding the provision of support for the different types of learning.

Contributions to literature and future research

In accordance with our reasoning and tenets of JD-R theory (Bakker and Demerouti 2017), the results indicate that both opportunities to participate in formal, structured T&D activities and opportunities to participate in informal learning activities were significantly and positively related to employees' levels of work engagement (Hypothesis 1). However, opportunities to participate in informal learning had a stronger relationship with work engagement levels than opportunities to participate in formal T&D. This finding of differing strengths of association between the two types of learning opportunities and work engagement is plausible, given that employees spend much more time working than in training (Cerasoli et al. 2018). The finding that opportunities for informal learning is positively related to work engagement is particularly important. This is because opportunities for informal learning is a frequently-mentioned antecedent of engagement, but the empirical evidence to support this claim is sparse (Wollard and Shuck 2011). Increasing the empirical evidence for such a link may encourage small business managers to be more proactive in fostering informal workplace learning because of the twin benefits.

Consistent with our conceptual arguments that incorporated reference to the norm of reciprocity, opportunities to participate in formal, structured T&D activities, but not opportunities to participate in informal learning activities, was significantly and positively

related to employees' levels of affective organisational commitment (Hypothesis 2). This result suggests that when employees are afforded opportunities to access formal, structured T&D activities, the employees develop heightened feelings of attachment to and identification with their work organisation (Meyer 2017). As a consequence of such work-related attitudes, and their feelings of being valued by their organisation, employees are likely to reciprocate through positive organisational behaviours, such reduced absenteeism, lower voluntary turnover, increased organisational citizenship behaviour and enhanced work performance (Meyer and Herscovitch 2001). The finding of a link between employees' access to formal, structured T&D activities and their levels of affective commitment is significant, because there is limited research on how access to formal T&D affects work-related attitudes in small businesses. In the few studies that have examined the effects of formal, structured T&D on employees' attitudes in smaller enterprises (e.g., Pajo et al. 2010; Rowden and Conine 2005), the upper firm size limit is typically about 100 employees. **Findings of these studies may not apply to firms with up to 50 employees, because level of participation in formal T&D activity is related to firm size (Dawe and Nguyen 2007).**

In contrast to the explicit nature of learning through formal T&D activities, employees are often unaware of the nature or extent of their informal learning (Halliday-Wynes and Beddie 2009). This is because learning through participation in situated work activities is a natural and mostly autonomous process, often implicit and difficult to distinguish from executing daily goal-directed work activities (Billett 2004; Poell 2014). Thus, as the results of this study show, opportunities to participate in informal learning activities is unlikely to foster employees' affective organisational commitment.

The results revealed a direct and positive relationship between opportunities to participate in T&D activities and levels of IWBs. This result is consistent with the view that employee access to leading-edge knowledge through participation in formal T&D can increase a firm's propensity to innovate (Bauernschuster, Falck, and Heblich 2009). When employees participate in T&D events, their reservoir of new and potentially useful ideas for innovation is expanded through exposure to outside knowledge, diverse perspectives and additional insights (Sung and Choi, 2014). However, contrary to our expectations, opportunities to participate in informal learning was not related to IWB, therefore Hypothesis 3 was partially supported. This result concurs with the contention that "creativity and innovation are not necessarily encouraged by forging close links between work and learning" (Poell 2014, 27). Informal workplace learning typically emanates from the process of completing work tasks and includes learning activities such as observing, reflecting on experience, experimenting and asking others for help with problem-solving (Halliday-Wynes and Beddie 2009). Such informal learning activities that which arises naturally as part of work processes may not be as conducive to stimulating IWBs, when compared to the intensive learning that occurs during formal T&D events.

In line with our reasoning, the results also show that the relationship between opportunities to participate in T&D activities and IWB was mediated by both affective organisational commitment and work engagement (Hypothesis 4a). Affective commitment fosters discretionary work behaviours (Meyer et. al. 2002; Meyer 2017) and in most jobs, being innovative is largely discretionary, extra-role behaviour (Ng and Feldman 2010, 2013). As hypothesised, work engagement also served as a mediator between informal learning and IWB (Hypothesis 4b). This finding is consonant with the view that engaged employees are absorbed in their work, contemplate ways to improve their performance and communicate

with colleagues about work-related improvements and change (Macey and Schneider, 2008; Rees, Alfes, and Gatenby 2013).

The focus and results of the present study have implications for further research. Future studies should assess the generalisability of the results by replicating the study in different small business sectors to rule out the professional services sector as an important contingency factor. Small business employees in the professional services sector may have greater opportunities to participate in both informal learning activities and formal T&D activities than small business employees in other sectors. Opportunities to learn may be a particularly salient job resource for small business employees in the professional services sector, because of the nature of their job demands. Questions arise as to whether opportunities to learn is a salient job resource for small business employees who face a different set of job demands.

Our results indicate that opportunities to participate in formal, structured T&D activities is associated with heightened levels of affective commitment, work engagement and IWBs. A more granular investigation of the types of T&D activities that are associated with the three outcome variables would be beneficial. For example, general training and specific training, and on-the-job training and off-the-job training, may have differing relationships with these outcome variables (Loewenstein and Spletzer, 1999; Ballot, Fakhfakh, and Taymaz 2006).

Regarding opportunities to participate in informal learning activities, our results are suggestive that informal learning opportunities stimulate work engagement. In future studies the observed relationship should be confirmed, perhaps using a different measure. For example, Noe, Tews, and Marand (2013) developed a 9-item scale which asks participants to consider the past three months and indicate how often they engaged in the informal learning during a typical work week. The nine items assess learning from oneself, learning from others and learning from non-interpersonal sources and a five-point frequency scale is provided. This scale assesses engagement in informal learning activities, as opposed to workplace opportunities to participate in informal learning activities. **Thus, there is a shift of focus from gauging the provision of opportunities to learn informally in the workplace, to gauging employees' actual participation in informal learning activities. The 9-item scale could be fruitfully employed to develop an understanding of how small businesses learn to implement a new practice, such as a new goods and services tax (Billett, Ehrich, and Hernon-Tinning 2003).** In future studies, researchers should also control for potential effects of personal resources (e.g., optimism, resilience, self-efficacy), which make unique contributions to explaining variance in work engagement, beyond the effects of job resources, such as opportunities to learn (Bakker and Demerouti 2008; Xanthopoulou et al. 2009). Finally, further research using larger samples should disaggregate the sample into small and larger businesses and test the hypothesised relationships in each context. Such research should also adopt a more multidimensional approach to determining firm size (e.g., value of assets, annual sales revenue) (d'Amboise and Muldowney 1988). Given that formalisation increases with organisation size (Josefy et al. 2015) the separate effects of firm size and formalisation on the hypothesised relationship should be examined using a formalisation scale (see, for example, Podsakoff et al. 1993).

Practical implications

The results suggest that opportunities to participate in informal learning activities is a job resource that fuels employees' work engagement. Given the multiple benefits associated with

high levels of work engagement (Bakker 2017), managers in small businesses would be well advised to foster employees' practice-based learning through the provision of both time for reflection and autonomy for experimentation (Nikolova et al. 2014). Managers who seek to foster interactional learning should be aided by characteristics of small businesses, such as their flat, simple structures, absence of functional silos, spatial and social proximity of staff, and personal and regular employer–employee communication (Coetzer, Kock, and Wallo 2017; Tsai, Sengupta, and Edwards 2007). **Small business managers would benefit from developmental interventions aimed at preparing them to promote effective informal learning (Billett et. al. 2015).** For example, managers should learn when and how to set a learning goal that focuses on knowledge and skill formation (e.g., discover three approaches to increase sales), as opposed to a performance goal that focuses on increasing the individual's motivation to implement the acquired knowledge and skill (e.g., achieve \$1 million sales this year) (Seijts and Latham 2012). **In resource constrained small firms, managers should also learn how to deal with the tensions that inevitably arise between production, learning and training requirements (Baumeler and Lamamra 2018).**

The results provide preliminary evidence that there are positive associations between opportunities to participate in formal, structured T&D activities and employees' affective organisational commitment and their propensity to enact IWBs. These results have important implications for small businesses that are seeking to retain strategically valuable employees through enhancing their sense of commitment to the organisation and/or pursuing an innovation strategy. **However, managers in these businesses, which typically have limited financial and personnel resources, will have to weigh up the observed potential attitudinal and behavioural benefits against the substantial direct and indirect costs of formal T&D (Dawe and Nguyen 2007).** Furthermore, it is important to note that it is systems of HRM practices that create the mutually reinforcing conditions that shape employee attitudes and behaviours, rather than a single practice such as formal T&D (Bowen and Ostroff, 2004).

Limitations and research implications

Practical constraints affected the research design, which subsequently imposed limitations upon the research, therefore the results should be considered in the light of the main limitations. First, participants were recruited using non-random sampling procedure, which limits generalisability of the results. To minimise sample bias, we bootstrapped our sample to 5000 at 95 per cent bias-corrected confidence intervals. Nevertheless, future studies should use a random sampling procedure to minimise sample bias. Second, the data is cross-sectional which rules out causal conclusions, therefore future research should employ quasi longitudinal, or preferably longitudinal designs. For example, given the lack of research on relations between informal learning activities and engagement (Wollard and Shuck 2011), we cannot rule out the possibility that it is work engagement that fosters informal learning. That said, the bulk of empirical evidence suggests that it is job resources, such as learning opportunities, which triggers a motivational process and via work engagement leads to positive outcomes for individuals and organisations (Bakker 2017; Schaufeli 2017). Third, although, our CLF results did not raise any concerns of CMB, future empirical efforts should further mitigate the potential effects of CMB by complementing statistical techniques with procedural techniques (Podsakoff et al. 2003). For example, in the present study self-report measures were used for key constructs, such as IWB. Thus, future studies should complement self-report measures with informant reports from peer and/or supervisor ratings to provide stronger evidence. **Alternatively, when it is not feasible to obtain data from different**

sources, the researcher can create a time lag between the measurement of the predictor and criterion variables (Podsakoff et al. 2003).

Conclusion

Small businesses have been reluctant to engage with the provisions of vocational education and training systems in Australia and other western countries (Dawe and Nguyen 2007; Shah 2017), which poses a challenge for stakeholders seeking to promote learning in small businesses. If owner-managers are aware of the additional benefits that might accrue from employee participation in formal and informal learning activities, they may be more willing to promote workplace learning activities. However, research that simultaneously examines the attitudinal and behavioural outcomes of opportunities to participate in formal and informal learning activities is sparse, especially in small businesses. The present study addresses this area of neglect by exploring associations between these two types of learning activities and affective commitment, work engagement and IWB. The results provide preliminary evidence that opportunities to participate in each type of learning activity is associated with differing outcomes. Future research should build upon this line of inquiry so that managers will better understand the exact nature of additional benefits that might accrue from their employees participating in each type of learning activity.

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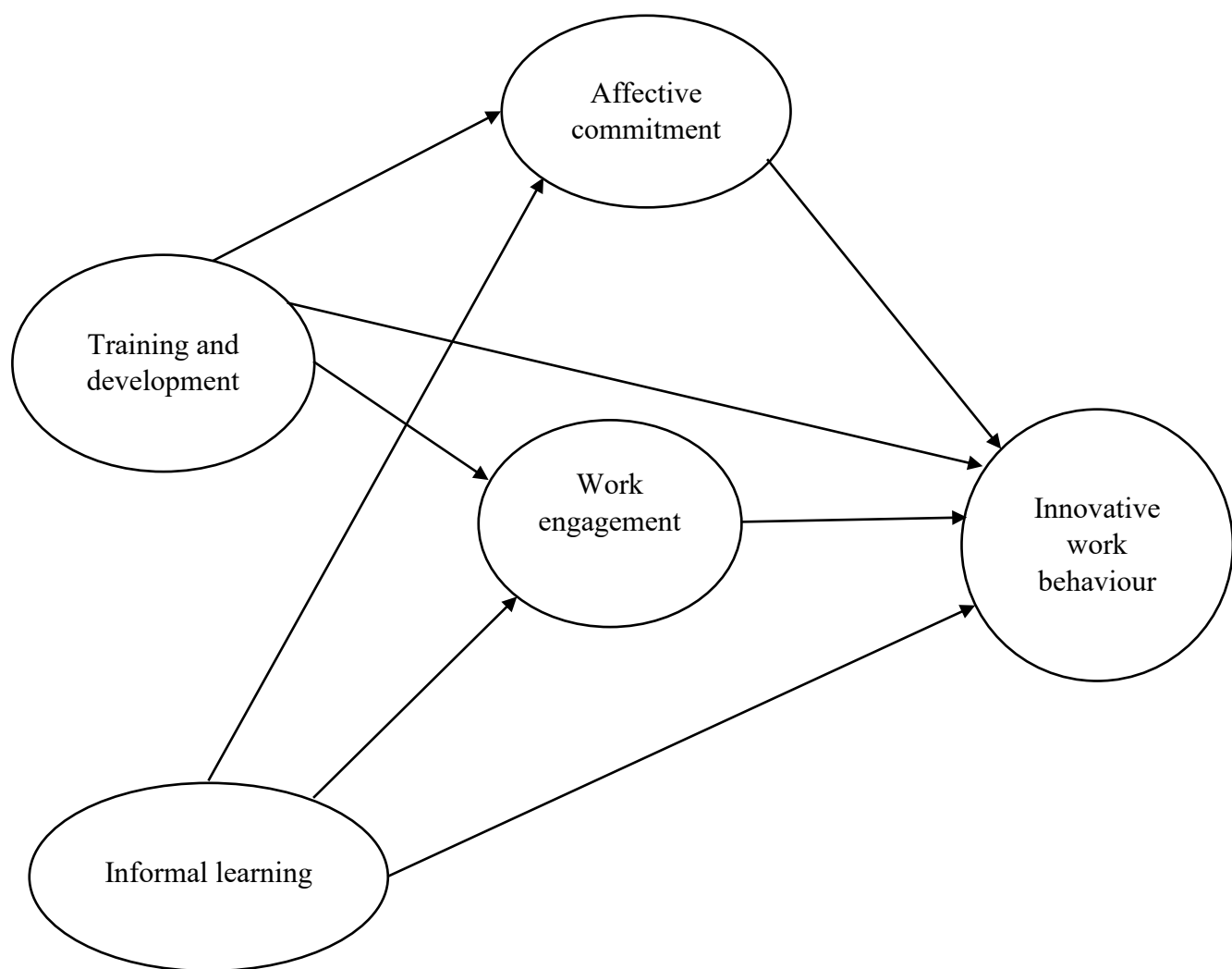


Figure 1. Research model

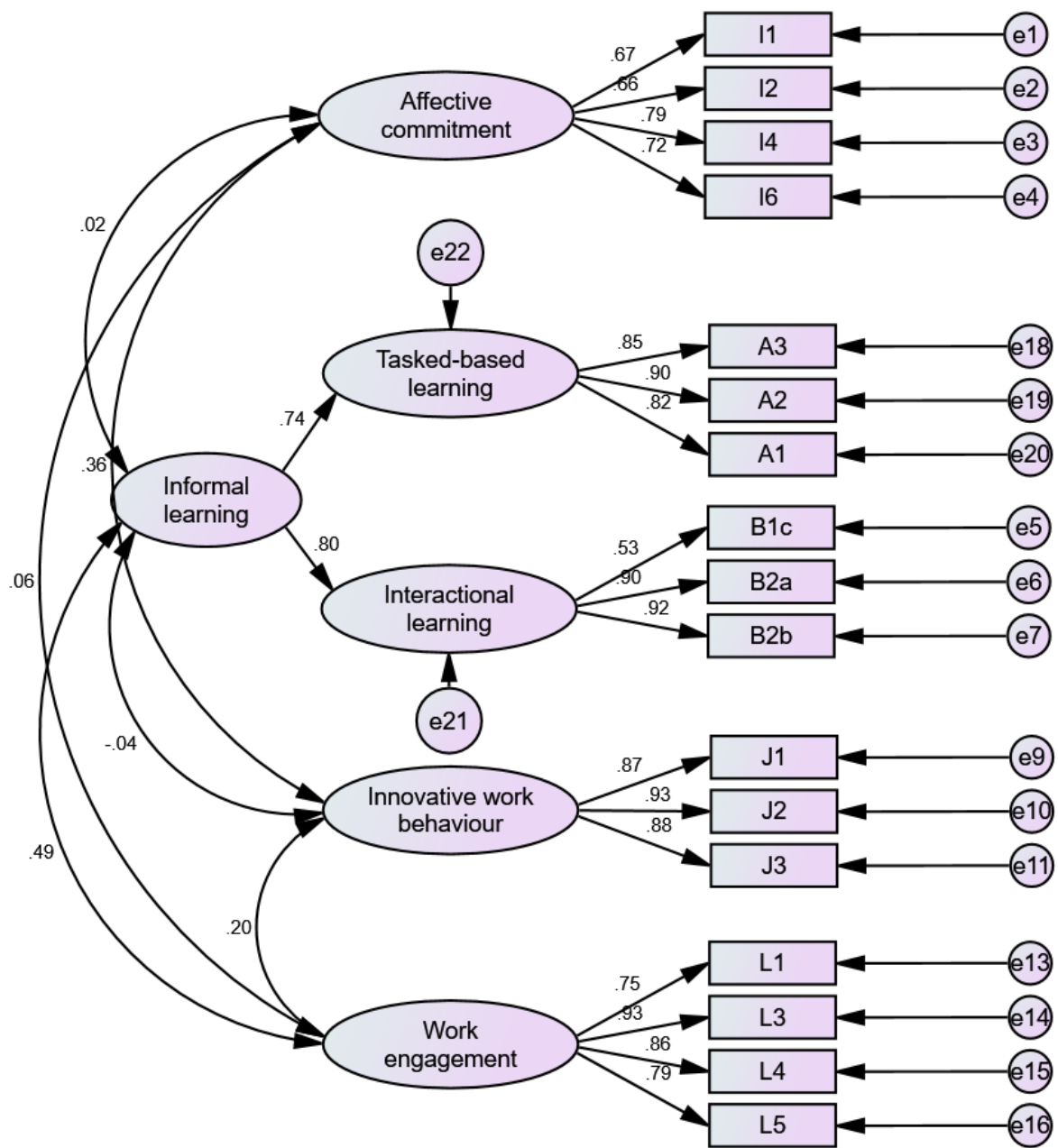


Figure 2. Confirmatory factor analysis of variables under study

Table 1: Alternative model results

Factor models	Components	χ^2	df	χ^2_{diff}	df _{diff}	CFI	TLI	RMSEA	AIC
Four-factor	IL, IWB, WE, and AC	123.486	111	-	-	.994	.992	.024	207.486
Three-factor	(combined IL and AC), IWB, and WE	229.092	114	105.092	3	.942	.931	.071	307.092
Three-factor B	(combined WE and IWB), IL, and AC	593.442	114	469.956	3	.758	.712	.144	671.442
Two-factor A	(combined WE, IWB, and AC), and IL	865.377	116	741.891	5	.622	.557	.179	939.377
Two-factor B	(combined IL and IWB), AC, and WE	491.311	116	367.825	5	.811	.778	.127	565.311
One-factor	(combined IL, IWB, WE, and AC)	885.019	117	761.533	6	.613	.550	.180	957.019

CFI = comparative fit index; χ^2 = chi-square; df = degrees of freedom; diff = difference; TLI = Tucker Lewis index; RMSEA = root mean square error of approximation; AIC = akaike information criterion. IL = informal learning; IWB = innovative work behaviour; WE = work engagement; AC = affective commitment. ***p < .001 (two-tailed).

Table 2: Correlations, means, standard deviations, and confirmatory factor analysis

	Mean	SD	1	2	3	4	5	6	CR	AVE	MSV	ASV	SQRT of AVE
1. Training and development	1.95	1.16							-	-	-	-	-
2. Affective commitment	4.93	1.24	.27***						.80	.51	.13	.04	.71
3. Informal learning	5.76	.90	.05	.00					.75	.60	.0013	.0009	.77
4. Task-based learning	5.83	1.01	.06	-.03	-				.89	.73	-	-	.86
5. Instructional learning	5.68	1.05	.04	.04	-	.53***			.84	.64	-	-	.80
6. Work engagement	5.39	1.31	.17*	.32	.38***	.32***	.35***		.90	.70	.24	.10	.83
7. Innovative work behaviour	4.72	1.47	.25***	.30***	-.01	.00	-.02	-.19**	.92	.80	.13	.06	.90

SD = standard deviation; AVE = average variance extracted; MSV = maximum shared variance; ASV = average shared variance; CR = composite reliability; SQRT = square root. *p < .05; **p < .01; ***p < .001 (two-tailed).

Table 3: Results for hierarchical regression of training and development and informal learning on work engagement

	Work engagement as an outcome variable				Affective commitment as an outcome variable				IWB as an outcome variable			
	B	SE	β	t-value	B	SE	β	t-value	B	SE	β	t-value
Constant	5.013	.178		28.165	4.375	.166		26.410	4.111	.197		20.918
Training and development	.196	.079	.173*	2.490	.285	.073	.265***	3.897	.312	.087	.246***	3.596
	R = .173				R = .265				R = .246			
	R ² = .030		F(1, 201) = 6.199*		R ² = .070		F(1, 201) = 15.187***		R ² = .060		F(1, 201) = 12.928***	
Constant	1.959	.555		3.527	4.467	.558		8.002	4.307	.662		6.505
Training and development	.173	.073	.153*	2.369	.286	.073	.266***	3.891	.313	.087	.247***	3.599
Informal learning	.538	.093	.372***	5.758	-.016	.094	-.012	-.172	-.034	.111	-.021	-.310
	ΔR^2 = .138		F(1, 201) = 20.173***		ΔR^2 = .000		F(1, 201) = 7.572**		ΔR^2 = .000		F(1, 201) = 6.483**	

IWB = innovative work behaviour. * $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed).

Table 4: Results for mediating effects

Outcome variable					95% bootstrapped CI		Outcome variable					95% bootstrapped CI		Outcome variable					95% bootstrapped CI	
		B	SE	t-value	LLCI	ULCI			B	SE	t-value	LLCI	ULCI			B	SE	t-value	LLCI	ULCI
Direct effects																				
<i>AC</i>	Constant	4.38***	.17	26.41	4.05	4.70	<i>WE</i>	Constant	5.01***	.18	28.16	4.66	5.36	<i>WE</i>	Constant	2.23***	.55	4.05	1.14	3.31
	T&D	.29***	.07	3.90	.14	.43		T&D	.20*	.08	2.49	.04	.35		IL	.55***	.09	5.83	.36	.74
	R = .27							R = .17							R = .38					
	R ² = .07			F(1, 201) = 15.19***				R ² = .03			F(1, 201) = 6.20*				R ² = .14			F(1, 201) = 33.36***		
<i>IWB</i>	Constant	2.82***	.40	7.00	2.03	3.62	<i>IWB</i>	Constant	3.28***	.43	7.57	2.43	4.13	<i>IWB</i>	Constant	4.24***	.68	6.23	2.90	5.58
	AC	.29***	.08	3.62	.13	.45		WE	.17*	.08	2.15	.01	.32		WE	.25	.08	2.95	.08	.41
	T&D	.23**	.09	2.61	.06	.40		T&D	.28**	.09	3.20	.11	.45		IL	-.15	.12	--1.23	-.39	.09
	R = .34							R = .29							R = .20					
R ² = .12			F(2, 200) = 13.40***			R ² = .08			F(2, 200) = 8.88***			R ² = .04			F(2, 200) = 4.35*					
<i>IWB</i>	Constant	4.11***	.20	20.92	3.72	4.50	<i>IWB</i>	Constant	4.11***	.20	20.92	3.72	4.50	<i>IWB</i>	Constant	.67***	.67	7.19	3.48	6.11
	T&D	.31***	.09	3.60	.14	.48		T&D	.31***	.09	3.60	.14	.48		IL	-.01	.11	-.11	-.24	.21
	R = .25							R = .25							R = .01					
	R ² = .06			F(1, 201) = 12.93***				R ² = .06			F(1, 201) = 12.93***				R ² = .00			F(1, 201) = .01		
Indirect effects																				
T&D → AC → IWB		.08	.03	-	.03	.16	T&D → WE → IWB		.03	.02	-	.01	.08	IL → WE → IWB		.14	.05	-	.05	.25

IWB = innovative work behaviour; AC = affective commitment; T&D = training and development; IF = informal learning. LLCI = lower level confidence interval; ULCI = upper level confidence interval. * $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed).