Self-efficacy and work engagement: A causal chain model

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Abstract

Purpose – This study investigated the mediating roles of work and family demands and work–life balance on the relationship between self-efficacy (to regulate work and life) and work engagement. Specifically, it sought to explain how self-efficacy influences employees’ thought patterns and emotional reactions, which in turn enable them to cope with work and family demands, and ultimately achieve work–life balance and work engagement.

Design/methodology/approach – Structural equation modelling (SEM) of survey data obtained from 1,010 employees from four different organisations within Australia was used to test the hypothesised chain mediation model.

Findings – The SEM results supported the hypothesised model. Self-efficacy was significantly and negatively related to work and family demands, which were in turn negatively associated with work–life balance. Work–life balance, in turn, enabled employees to be engaged in their work.

Research limitations/implications – The findings supported the key tenets of social cognitive theory and conservation of resources (COR) theory and demonstrated how self-efficacy can lead to work–life balance and engagement despite the presence of role demands. Study limitations (e.g., cross-sectional research design) and future research directions were also discussed.

Originality/value – This study incorporated COR theory with social cognitive theory to facilitate better understanding of how self-efficacy enhances work–life balance and work engagement through a self-fulfilling cycle in which employees achieve what they believe they can accomplish, and in the process, build other skills and personal resources to manage work and family challenges.

Keywords – Self-efficacy, Role demands, Work–life balance, Work engagement, Social cognitive theory, Conservation of resources theory

Paper type – Research paper

Self-efficacy and work engagement: Test of a chain model

1. Introduction

The current research is built on concepts of positive psychology in the workplace to investigate factors that enable employees to flourish at work. Specifically, it is focused on work engagement, which has been associated with various workplace indicators such as job satisfaction, involvement, reduced burnout (Bakker *et al.*, 2008), and job performance (Xanthopoulou *et al.*, 2009). Defined as ‘a positive, fulfilling, work-related state of mind’ (Schaufeli *et al.*, 2002, p. 74), work engagement has also emerged as an influential variable in determining organisational success—not only does it influence employee satisfaction, loyalty, and productivity, it also predicts customer satisfaction, firm reputation, and overall stakeholder value (Demerouti and Cropanzano, 2010). However, research on work engagement is still nascent—while numerous scholars have examined the construct along with work-related antecedents and outcomes (e.g., Christian *et al.*, 2011), few have investigated the relationships among work engagement, work–family constructs, and psychosocial resources.

Figure 1. Hypothesised chain mediation model

Work engagement is important to work–family research because it is a psychological process that assesses the quality of participation in role activities (Macey *et al.*, 2009). Scholars have proposed that the underlying work–family linkage mechanisms can lead to stress and

pressure, especially when demands in both roles are incompatible (Greenhaus and Beutell, 1985). However, other scholars (e.g., Greenhaus and Powell, 2006) have argued that participation in work and family roles may also bring about advantages, as one role may provide resources from which the other role benefits. Among several work–family constructs, work–life balance remains one of the least studied and underdeveloped concepts due to the lack of theoretical grounding and empirical assessments (Greenhaus and Allen, 2011). In this study, the positive aspect of work–life balance is considered to acknowledge that multiple life roles may also enhance health, well-being and performance across various life domains (Greenhaus and Powell, 2006), thereby contributing to improved work engagement.

Work–life balance and work engagement are examined along with two antecedents—self-efficacy and role demands. Role demands are well-documented sources of pressure experienced by employees when they seek to maintain a balance between their work and non-work responsibilities (Voydanoff, 2004). While studies (e.g., Greenhaus and Beutell, 1985) have previously assumed that demand is a negative experience highly predictive of work–family conflict, individuals may also perceive demand as a neutral or positive experience (Boyar *et al.*, 2007). Boyar *et al.* (2007) suggested that individuals may be indifferent towards, or receptive of, role demands because they perceive them to be part of their work and family roles. Although demands in one domain may prevent employees from meeting the demands of the other, resulting in work–family conflict, the work–family interface does not exist until one domain starts affecting the other (Edwards and Rothbard, 2005). In other words, role demands do not always lead to work–family conflict.

Drawing on Bandura's (1986) social cognitive theory and Hobfoll's (1989) conservation of resources (COR) theory, it is proposed that building psychosocial resources (e.g., self-efficacy)

creates a resource reserve that influences employees' perceptions and interpretations of their work and family demands, which ultimately assists them in coping with their role demands. Employees often have to cope with multiple demands arising from their careers, social relationships, marital partnerships and parenthood, and a strong sense of self-efficacy can contribute to the attainment of balance among various demands. Moreover, self-efficacy is indicative of a person's motivation and willingness to expend effort consistent with one's ability (Bandura, 1986). However, while numerous scholars have established that self-efficacy leads to a range of positive outcomes (e.g., increased job performance, goal orientation and work engagement), limited research has focused on the underlying psychological and cognitive mechanisms involved in these relationships. Hence, the present study investigated a chain-mediation model to understand how self-efficacy is related to employees' attainment of work-life balance and work engagement despite the existence of role demands (see Figure 1).

This study has both theoretical and practical importance. Social cognitive theory is used to explain how self-efficacy influences employees' thought patterns and emotional reactions when they are dealing with work and family demands. In addition, COR theory is incorporated to show how self-efficacy enhances work-life balance and work engagement, through a self-fulfilling cycle in which employees accomplish what they strongly believe they can accomplish, and in the process, build other skills and personal resources to manage their work and family challenges.

The resulting positive emotions (e.g., pride, contentment, interest) and experiences (e.g., job promotion, increased job performance, positive relationships) have long-term benefits because they assist individuals to build other physical, intellectual, social and psychological resources, which ultimately increase their overall well-being. Finally, role demands and work-life balance are examined from a more subjective and perceptual lens. In doing so, cultural differences and

perceptions of work–life balance are acknowledged, as individuals tend to view work and family differently based on their cultural traditions, family structures and societal institutions. A better understanding of how self-efficacy enhances employees' work–life balance and work engagement is also provided, thereby bridging the discrepancy between practitioners' interest in work engagement and academic research on the similar topic.

2. Theoretical foundations and development of hypotheses

2.1 Conservation of resources (COR) theory

Resources refer to objects, states, conditions, personal characteristics, energies and other things that are valued by individuals or act as a means for them to obtain valued objectives (Hobfoll, 1989). The value of resources differs among individuals and is highly influenced by their personal experiences and circumstances (Hobfoll, 2001). Based on the assumption that employees have limited time, energy and other resources, COR theory proposes that individuals: (1) generally seek to accumulate and protect resources to cope with challenges and prevent themselves from facing negative consequences; and (2) invest the resources they have in order to build further resources (Hobfoll, 2001). Specifically, individuals tend to invest their extra resources in positive endeavours, which enhance overall well-being, and ultimately result in an accumulation of resources (Hobfoll, 2001).

2.2 Self-efficacy and work–life balance

COR theory emphasises the roles of psychological resources (e.g., self-efficacy) and resources related to survival (e.g., health) as being crucial to overall resource management and maintenance, and suggests that individuals tend to acquire such primary resources instinctively (Hobfoll, 2001). Employees who are self-efficacious are better positioned for resource gains, while employees with low or without self-efficacy are more likely to experience resource losses (Hobfoll, 2001). That is, self-efficacy can facilitate the building of other resources, and the lack

thereof can deplete the existing pool of resources as individuals dwell on their personal failures and deficiencies. This is consistent with a number of studies (e.g., Demerouti *et al.*, 2004; Xanthopoulou *et al.*, 2009) which have found that initial resource gains tend to lead to future resource gains, while initial resource losses tend to lead to future resource losses.

The current research considered self-efficacy in the context of employees' work and non-work experiences (self-efficacy to regulate work and life), and defined the construct as 'the belief that one has in one's own ability to achieve a balance between work and non-work responsibilities, and to persist and cope with challenges posed by work and non-work demands' (Chan *et al.*, 2015, p. 4). Work-life balance is defined as 'the individual perception that work and non-work activities are compatible and promote growth in accordance with an individual's current life priorities' (Kalliath and Brough, 2008, p. 326). This definition of work-life balance emphasises the management of expectations and subjective perceptions of balance, and recognises that these perceptions may evolve over time in response to changing life priorities (Kalliath and Brough, 2008). Self-efficacy (to regulate work and life) is examined as an antecedent of work-life balance since the construct not only affects how people feel and act, but also how they perceive situational characteristics such as work and family demands (Bandura, 1986). Coupled with past successful experiences, the psychosocial resource has been found to nurture other important personal resources such as self-confidence, self-esteem and self-control (Bandura, 1986). Correspondingly, self-efficacious employees are able to exercise personal control over their own functioning and persevere through obstacles to achieve work-life balance, yielding hypothesis 1: *H1*. Self-efficacy (to regulate work and life) is positively related to work-life balance.

2.3 Mediating roles of work and family demands

Employees' feelings and attitudes towards both their work and family demands are crucial in determining their life outcomes. Demand is defined as a perception of the level and intensity of responsibilities within the work and family domains (Boyar *et al.*, 2007). Specifically, work demand refers to the perception of demand levels in the work domain, and family demand refers to the perception of demand levels in the family domain (Boyar *et al.*, 2007). Previously, work demand has been found to be crucial to men's well-being, while family demand was considered to be a determinant of women's well-being (Michel *et al.*, 2011). However, recent scholarship suggests the converging roles of men and women, which means that stressors that influence their well-being are overlapping, and their respective role demands are becoming more similar (Michel *et al.*, 2011). Consequently, it is proposed that both work and family demands affect the well-being of men and women to the same extent. This is in line with a shift from gender-based role differentiation to gender equality in modern society.

There is emerging consensus that job demands affect a mix of positive and negative outcomes (Boyar *et al.*, 2007). In particular, Van den Broeck *et al.* (2010) has distinguished between two types of job demands—job challenges and hindrances. They argued that when confronted with certain job demands, employees may feel a lack of control and experience negative emotions, both of which interfere with employees' overall well-being and hinder their job performance (Nahrgang *et al.*, 2011). These job demands have been referred to as job hindrances. On the other hand, job challenges are demands that may deplete resources, but have the potential to enable individuals to secure more rewards and gains at the same time. Gains subsequently enable individuals to replenish the depleted resources, buffering the negative effects of potentially demanding roles or tasks, and providing individuals with opportunities for personal growth (Nahrgang *et al.*, 2011). Job challenges are considered positive motivational

forces which tend to elicit problem-focused coping and involvement, while job hindrances tend to trigger avoidance behaviour and job withdrawal (Van den Broeck *et al.*, 2010). Job challenges can lead to job satisfaction which has the potential to spill over to employees' other life domains, while job hindrances disturb employees' work–life balance by eliciting negative emotions (Van den Broeck *et al.*, 2010). Because self-efficacious employees tend to view role demands as neutral or positive experiences, they are thus better positioned for resource gains, such as achieving work–life balance. Hence, the hypothesis 2 is proposed:

H2. The relationship between self-efficacy (to regulate work and life) and work–life balance will be mediated by work and family demands.

2.4 Work demand, family demand, and work engagement

Work engagement is characterised by vigour, dedication and absorption (Schaufeli *et al.*, 2002, p. 74). Vigour refers to high levels of energy and mental resilience while working, willingness to invest effort in one's work, and persistence in the face of difficulties; dedication refers to being highly involved in one's work and experiencing a sense of significance, enthusiasm, inspiration, pride and challenge; and absorption refers to fully concentrating and being happily engrossed in one's work, such that time passes quickly and one has difficulty detaching oneself from work (Schaufeli *et al.*, 2002). Engaged employees are energetic, enthusiastic and fully immersed in their work. Research on the consequences of work engagement has shown that it effects several positive work outcomes such as job satisfaction, low absenteeism, low turnover, and high organisational commitment and performance (Bakker *et al.*, 2008). Xanthopoulou *et al.* (2009) also found that engaged employees tend to score higher on extra-role performance and are more willing to help others, exhibiting higher levels of prosocial work behaviour. Understanding the

antecedents and implications of work engagement is thus important for organisations because a disengaged workforce can be costly.

Despite the centrality of work in people's lives, both work and non-work factors have been found to have an impact on work engagement. Several empirical studies (e.g., Schaufeli *et al.*, 2009) have shown that work demand predicts work engagement. However, the specific nature of the association between work demand and work engagement is not clear (Sawang, 2012). Depending on the nature of the demands (i.e., challenges or hindrances), work demand can be positively or negatively associated with work engagement both concurrently and over time. Some studies (e.g., Bakker *et al.*, 2008) concluded that work demand has no effect on work engagement, while other studies (e.g., Schaufeli *et al.*, 2009) found a linear relationship between work demand and work engagement. In another study by Sawang (2012), a quadratic relationship between work demand and work engagement was found. Sawang (2012) explained that work must be demanding enough to engage employees, but not excessive, otherwise employees will either become bored, disengaged, or exhausted.

Family demand is also included as an antecedent to work engagement because employees tend to bring their 'whole selves' to work, such that what happens after work is just as important as what happens in the workplace (Michel *et al.*, 2011). Although it is generally assumed that married employees are likely to have more family demands than single employees, research has also found that a spouse can be a source of support for the employee. Many studies have conceptualised demands using objective measures such as number of hours worked, number of dependents and marital status. However, perceptions have been found to mediate the effects of objective measures on outcomes (Edwards and Rothbard, 2005), hence the current research focused on perceptions rather than objective measures of demands.

As a proximal determinant of human motivation, affect and behaviour that operates through the exercise of personal agency, self-efficacy effects a range of positive outcomes by assisting individuals to obtain their goals (Bandura, 1986). Importantly, self-efficacious employees are able to take advantage of opportunities at work and overcome challenges because they are driven by tenacity, determination and a belief in future success (Bresó *et al.*, 2011). Recent research on self-efficacy has also suggested that self-efficacy predicts anticipated work–family conflict (Michel *et al.*, 2011). This notion is supported by Bandura (1986) who had earlier posited that an individual’s level of self-efficacy can mitigate strain by reducing perceptions of and reactions to stressors. Depending on the individual’s preferences and sense of self-efficacy, some employees may identify with the demands stemming from their work and family domains as integral to their personal identity (Boyar *et al.*, 2007). Furthermore, based on COR theory, self-efficacious employees are less vulnerable to resource loss and more capable of gaining resources. Therefore, when employees are confronted with role demands, it is hypothesised that some employees are able to overcome them to achieve work engagement, yielding hypotheses 3a and 3b:

H3a. Depending on how the employee views work demand (i.e., challenge or hindrance), work demand is positively or negatively related to work engagement.

H3b. Depending on how the employee views family demand (i.e., challenge or hindrance), family demand is positively or negatively related to work engagement.

2.5 Mediating role of work–life balance

The relationship between work–life balance and work outcomes has rarely been put through rigorous theory development or testing (Eby *et al.*, 2005). Existing studies have tended to rely on psychological contract and social exchange theory to account for the workplace implications

of work–life balance (Parkes and Langford, 2008). The current theoretical model is based on the argument that even if work and non-work demands are positive (challenges) or negative (hindrances) to employees’ work–life balance, an employee is capable of achieving work–life balance through self-efficacy beliefs. Self-efficacy can also buffer the negative effects of stressors on individuals, as self-efficacious individuals have been shown to perceive demands as opportunities for further skills development and challenges to overcome (Grau *et al.*, 2001). Additionally, in choosing to examine work–life balance as one of two mediators linking self-efficacy to work engagement, the current research draws attention to a much broader concept involving not just married employees, employees with children, or working mothers, but working individuals at large, whether or not they are married or have familial obligations. Correspondingly, a chain of “gains” from self-efficacy to work engagement through work and family demands and work–life balance is proposed, yielding hypothesis 4:

H4. The relationship between work and family demands and work engagement will be mediated by work–life balance.

3. Method

3.1 Participants and procedure

Self-reported data were collected using an online questionnaire, which was sent to four organisations (one university, two public sector organisations and one private sector organisation) in Australia. Respondents had a diverse range of occupations spanning areas such as education, health, policy, finance, accounting, and administrative support, from entry-level to experienced employees, which enhanced the ability of this study to be representative of the general workforce. The link to the survey was first provided using electronic mail to the human resources (HR) leads in each of the four organisations. The HR leads subsequently distributed the link to all employees

via electronic mail. To reduce non-response bias, electronic mails were sent twice to the HR leads to remind participants to complete the questionnaire. Reminder electronic mails were also sent one week before the survey closing date.

The response rates ranged from 25% to 45% across all four organisations. The low response rates were due to organisational changes taking place within each organisation in the aftermath of the global financial crisis, which were beyond the researchers' control. The final sample ($N = 1,010$) consisted of 36.5% males ($n = 365$) and 63.5% females ($n = 635$). Their ages ranged from 17.0 to 71.0 years, and there was a slight negative skew in the age of the participants, with an average age of 41.1 years ($SD = 11.1$ years). The majority (71.1%, $n = 716$) of respondents were married or cohabiting, while 19.7% ($n = 198$) were single or had never married, and the remaining 8.2% ($n = 83$) were divorced, separated or widowed. The average tenure was 8.1 years ($SD = 7.9$ years), and approximately 66.7% ($n = 673$) of respondents had either a university or postgraduate qualification. The respondents spent an average of 39.2 hours ($SD = 10.6$ hours) working per week.

[Insert Table I]

3.2 Measures

Self-efficacy to regulate work and life. Self-efficacy to regulate work and life was measured using a newly validated five-item scale (Chan *et al.*, 2015). The scale sought to assess the confidence level of respondents in regulating their work and non-work domains based on the centrality of efficacy beliefs in their lives. A sample item is 'How confident are you in achieving your ideal work–life balance?' Each item had a scale ranging from 0 = cannot do at all to 100 = highly certain can do, and higher scores meant that employees were more likely to believe in their own ability to cope with work–life challenges. Cronbach's alpha for this scale was .96.

Work demand. Work demand was measured using Boyar *et al.*'s (2007) five-item measure of job demands. A sample item is 'My work demands a lot from me'. Respondents indicated their agreement with each item on a five-point scale ranging from 1 = strongly disagree to 5 = strongly agree, with higher scores representing higher levels of work demand. Cronbach's alpha for this scale was .91.

Family demand. Family demand was measured using Boyar *et al.*'s (2007) four-item measure of family demands. A sample item is 'I have to work hard on family-related activities'. Respondents indicated their agreement with each item on a five-point scale ranging from 1 = strongly disagree to 5 = strongly agree, with higher scores representing higher levels of family demands. Cronbach's alpha for this scale was .86.

Work-life balance. Work-life balance was measured using Brough *et al.*'s (2014) four-item scale. Employees were asked to respond to the items by reflecting on their work and non-work activities. Their responses were indicated on a five-point scale ranging from 1 = strongly disagree to 5 = strongly agree, with higher scores representing better perceptions of work-life balance. A sample item is 'I currently have a good balance between the time I spend at work and the time I have available for non-work activities'. Cronbach's alpha for this scale was .94.

Work engagement. Work engagement was measured using the shortened nine-item Utrecht Work Engagement Scale (UWES) developed by Schaufeli *et al.* (2006), which has proven to be relatively stable across time, internally consistent, and cross-nationally valid in multiple studies. The scale was developed based on three aspects of work engagement—vigour, dedication and absorption. Ratings were completed on a seven-point scale ranging from 0 = never to 6 = always. A sample item from the 'vigour' subscale is 'At my work, I feel bursting with energy'. A sample item from the 'dedication' subscale is 'My job inspires me'. Lastly, a

sample item from the ‘absorption’ subscale is ‘I am immersed in my work’. Cronbach’s alpha for this overall scale was .92.

Control variables. Researchers have consistently defined and conceptualised both work and family demands to include variables such as number of hours worked, schedule, marital status, family work hours, number of children at home and dependents at home. Therefore, to limit the risk of spurious effects on the study variables, we controlled for gender (0 = male, 1 = female), marital status (0 = single or not married, 1 = divorced or separated, 2 = married or cohabiting), age, number of hours worked per week, tenure at current company and education level (1 = secondary level, 2 = vocational education and training or diploma level, 3 = college or university level, 4 = postgraduate level).

3.3 Data screening

Data screening was conducted using SPSS (version 22.0). The missing completely at random (MCAR) test conducted resulted in a chi-square = 544.98 (df = 501; $p < .09$), which indicated that the data were indeed MCAR. Of the 1,134 responses gathered, 53 cases (4.7% of the sample) were deleted using listwise deletion because of the presence of multiple missing values. The data were subsequently screened for univariate and multivariate outliers. There were 12 univariate outliers, and the test for multivariate outliers using Mahalanobis distance indicated that there were 59 multivariate outliers. Hence, 71 cases were excluded because they were found to significantly reduce the multivariate normality and overall fit of the hypothesised model. This yielded a final sample size of 1,010 survey participants.

3.4 Analyses

Confirmatory factor analysis (CFA), correlation analysis, and structural equation modelling (SEM) were carried out using AMOS (version 22.0). SEM was performed to determine whether

the hypothesised mediation model was consistent with the data collected. The consistency was evaluated through a model-data fit, which indicated the extent to which the hypothesised relationships among the constructs were plausible. The following fit indices were reported—standardised root mean square residual (SRMR), goodness-of-fit index (GFI), Tucker–Lewis index (TLI), comparative fit index (CFI), parsimony comparative fit Index (PCFI), root mean square error of approximation (RMSEA), along with the chi-square statistic. Values for the GFI, TLI, CFI and PCFI were between 0 and 1, with values closer to 1 representing a better-fitting model. Lastly, a value of .05 or less for SRMR and a value of .08 or less for RMSEA were also indicative of a good-fitting model.

4. Results

4.1 Measurement model

Based on the two-step procedure proposed by Anderson and Gerbing (1988), a measurement model of the latent variables was first estimated using CFA to determine its discriminant validity, followed by a test of the hypothesised structural model using SEM. The standardised parameter estimates were tested for significance, with 95% confidence intervals calculated using the bias-corrected bootstrap method (5,000 re-samples) due to the presence of skewness and kurtosis in the sample. To determine the presence of common method variance (CMV), the common latent factor test was conducted using CFA. The test assumes that a single factor will account for all of the covariance among the variables of interest if CMV is present (Podsakoff and Organ, 1986). As shown in Table II, the fit statistics for the tests of the one-, four- and five-factor measurement models revealed that the five-factor model was the best-fitting model, suggesting that the five scales were distinct. Also, the common latent factor test demonstrated that CMV had minimal effect on the results.

[Insert Table II]

4.2 Correlational analyses

The correlational analyses (see Table III) provided initial support for all hypotheses except hypothesis 3b. Self-efficacy was positively and significantly correlated with work–life balance ($r = .65$, $p < .001$), and work demand was positively and significantly correlated with work engagement ($r = .11$, $p < .01$). Family demand, however, was not significantly correlated with work engagement ($r = -.06$, $p > .05$). Additionally, self-efficacy to regulate work and life was significantly and negatively correlated with both work demand ($r = -.34$, $p < .001$) and family demand ($r = -.17$, $p < .001$). Similarly, both work demand ($r = -.45$, $p < .001$) and family demand ($r = -.17$, $p < .001$) were significantly and negatively correlated with work–life balance. Work–life balance, in turn, was significantly and positively correlated with work engagement ($r = .23$, $p < .001$). The correlations among the constructs indicated that work demand and work–life balance are likely to fully mediate the hypothesised relationship between self-efficacy and work engagement.

[Insert Table III]

Several significant relationships were observed between the control variables and the predictor and outcome variables—self-efficacy and work engagement. Specifically, age, tenure, education level and the number of hours worked per week were found to be significantly correlated with the two variables. To minimise and control for the spurious effects of the control variables on the study variables, all four control variables were included in the test of the hypothesised structural model but were shown to have no significant effect on any of the study variables.

4.3 Structural model

After evaluating the measurement models, the second stage involved testing the relationships among the latent factors. The SEM analysis revealed that the chi-square statistic was significant and the fit indices were satisfactory, indicating that the structural model was a good fit to the observed data. Moreover, the fit indices all fell within the acceptable range as specified in the SEM literature. Additionally, all predicted paths were statistically significant (see Table IV and Figure 2). A closer look at the path estimates of the full mediation model revealed that work and family demands fully mediated the relationship between self-efficacy and work–life balance. Further, work–life balance also fully mediated the relationship between work and family demands and work engagement. These results provide strong support for the hypotheses presented earlier.

[Insert Table IV]

4.4 Full mediation and partial mediation models

The specific nature of the hypothesised chain mediation model was further examined. Specifically, the significant direct effects of self-efficacy on work engagement became non-significant after including both work and family demands and work–life balance as mediators. This finding lent more support to the full mediation model. However, the direct effect of family demand on work–life balance also became non-significant ($r = -.05$, $p > .05$) after a direct path was included between self-efficacy and work–life balance, thereby yielding a partial mediation model (see Figure 3). As shown in Table IV, the fit indices of the partial mediation model were also slightly better than those of the full mediation model.

Figure 2. Structural model (Full mediation)

Note: Values represent standardised regression weights; * $p < .05$, ** $p < .01$, *** $p < .001$.

Figure 3. Structural model (Partial mediation)

Note: Values represent standardised regression weights; * $p < .05$, ** $p < .01$, *** $p < .001$.

5. Discussion

The primary aim of this research was to investigate the roles of self-efficacy and work–life balance in assisting employees to overcome work and family demands to achieve work engagement. The hypothesised chain mediation model was based on social cognitive theory and COR theory. However, while full mediation was supported, the relationship between family demand and work engagement became insignificant when a path linking self-efficacy to work–life balance was included. The findings indicate two possibilities: (1) work and family demands account for some, but not all, of the relationship between self-efficacy and work–life balance; or

(2) as explained in a number of prior studies (e.g., Kossek *et al.*, 2011), work remains central in many people's lives such that family demand has a comparatively weaker influence on work–life balance than work demand. In prioritising work responsibilities, employees may sacrifice their family and personal roles in the process (Kossek *et al.*, 2011). The findings could also indicate that employees are less likely to be affected by demands stemming from the family domain, which further emphasises the need to look beyond objective measures of work–life balance, as employees are unlikely to view both domains equally in the first place.

5.1 Theoretical implications

The current research findings are consistent with previous research and empirical studies based on social cognitive theory and COR theory, showing that self-efficacious employees seek to obtain, retain and protect resources in order to manage their role demands and attain well-being. In this study, psychosocial and cognitive well-being was operationalised through work–life balance and work engagement. Self-efficacious employees are able to obtain their goals, as previous successful experiences have increased their resource pools, enabling them to acquire other resources (Hobfoll, 2001). This generates gain spirals, as the positive emotions, energy, experiences, and other outcomes associated with the enlarged resource pool in turn provide other resources that increase future levels of self-efficacy (Schaufeli *et al.*, 2009). A potential area for further investigation is the feedback path linking work engagement or work–life balance to self-efficacy, as experiencing work engagement or achieving a sense of balance may become another resource that employees can tap on to build other resources (e.g., self-efficacy), thereby contributing to the gain spiral effect.

The current study also emphasised the importance of self-efficacy as a vital personal resource for employees seeking to manage work and family demands to achieve a sense of

work–life balance and, subsequently, work engagement. Self-efficacy equips employees with the ability and confidence to ‘affect, shape, curtail, expand, and temper what happens in their lives’ (Grant and Ashford, 2008, p. 3). Importantly, the present study found that self-efficacy serves as a powerful resource that influences employees’ perceptions and interpretations of work and family demands. Self-efficacy is founded on Bandura’s (1986) triadic reciprocal determinism model, which suggests an interplay of environmental, personal and cognitive factors in affecting outcomes. Hence, it is proposed that future research should look into other relevant social and environmental factors (e.g., organisational culture, family-friendly policies and person–environment fit) that have the potential to influence individuals’ perceptions of work and family demands, work–life balance and work engagement. Incorporating these constructs and other outcomes (e.g., job performance and family functioning) could increase the robustness of the chain mediation model and enrich the current literature on self-efficacy, role demands, balance and engagement.

Work–life balance was also examined in a conceptual framework that specifies its relationships with antecedents (self-efficacy and role demands) and outcomes (work engagement), thereby contributing to the further expansion of the construct’s nomological network. While researchers have studied concepts such as work–family conflict and work–family enrichment extensively, few studies have specifically examined work–life balance as a distinct construct (Kalliath and Brough, 2008). In contrast to previous studies which primarily drew on role strain theory to conceptualise work–life balance, COR theory was used to highlight the fact that each employee has a finite amount of resources with which to manage his or her role demands, and any subsequent gain or depletion of resources will have a direct impact on work–life balance.

Additionally, building on Christian *et al.*'s (2011) seminal work on engagement, the relationships that work engagement has with work–life balance, role demands and self-efficacy were explored, thereby contributing to the on-going incremental refinements to existing models and measures of work engagement. While Schaufeli *et al.*'s (2002) definition and measure of work engagement remain widely used and accepted in academia, Albrecht (2012) pointed out that there may be other dimensions of engagement which have been left out by their conceptualisation. For instance, Macey *et al.* (2009) argued in support of a definition of engagement that encompasses organisational goal alignment. Another broader issue is the divide between academia and practice. Macey *et al.* (2009) indicated that research on and the practice of engagement are progressing along different paths due to the lack of psychometric evidence of engagement measures in academia, and the lack of peer-reviewed analysis of engagement measures in the practitioner domain. Evidently, these are future areas of research to be explored when advancing the discourse on work engagement.

Lastly, although partial support was demonstrated for the mediating effects of family demand on the efficacy–balance relationship, there are many compelling reasons to believe that family demand is as important as work demand when studying the work–family interface and work outcomes. Family-related constructs and concepts remain neglected in the work–family literature, and recent studies (e.g., O'Neill *et al.*, 2009) have shown that employees' and leaders' workplace behaviours are influenced by family matters, organisational factors, as well as individual traits and competencies.

5.2 Practical implications

These findings have potential implications for practice, particularly for human resource management in organisations. Macey *et al.* (2009) remarked that 'rarely has a term resonated as

strongly with business executives as employee engagement has in recent years' (p. xv). Indeed, work engagement remains a hot topic within both the academic and practitioner domains (Albrecht, 2012). This has consequently led to the development of interventions that seek to enhance employees' self-efficacy and work engagement. Despite the benefits of such interventions, Ouwenel *et al.* (2013) indicated that they are only implemented when organisations encounter problems. Following Ouwenel *et al.*'s (2013) recommendations, managers and HR practitioners could implement positive psychology interventions that seek to enhance employees' self-efficacy on a regular basis. In fact, Ouwenel *et al.* (2013) developed a web-based training program with goal-setting and resource-building tools that seek to foster positive emotions, self-efficacy and coping abilities in employees, which together, further enhance employees' work engagement over time.

Employees who experience positive emotions and work engagement have also been found to view their employers as being more supportive of work–family integration (Dunn and O'Brien, 2013). Importantly, having work–life balance and healthy family relationships can assist employees in fulfilling their work roles and responsibilities. Organisations could thus seek to strengthen employees' competency in managing multiple role demands by implementing stress management programs and family-friendly policies, to make work and family demands more compatible. Stress management programs teach employees about the nature and sources of stress, the effects of stress on health, and personal resources and skills to cope with and reduce stress. Family-friendly workplace policies ensure that employees can opt for flexible arrangements around their work and families when fulfilling their role responsibilities. In addition to organisational-level interventions, managers and HR practitioners could provide

training to supervisors to help them manage their teams, as they are the ones dealing with employees directly.

Nevertheless, positive psychology interventions will only be beneficial to organisations if their employees are willing to embrace the implemented changes (Christian *et al.*, 2011). To enhance both work–life balance and work engagement, managers could design jobs that include motivational characteristics and, if necessary, be open to implementing job crafting (Wrzesniewski and Dutton, 2001). With job crafting, employees are able to adjust their work environments, job affiliations, nature of work duties, and variety of tasks performed to suit their needs. Consequently, managers and HR practitioners can enhance engagement in the workplace, as employees are more likely to perceive their work as being meaningful and thereby derive satisfaction from it.

5.3 Methodological strengths and limitations

This study had several notable strengths and limitations. The common view is that because cross-sectional studies assess putative causes and effects simultaneously, they do not accurately reflect longitudinal mediation effects, so temporal causal relations cannot be established. Although the mediation analysis was conducted at one time point, the large sample of employees from a range of organisations in different industries and the use of CFA and SEM statistical techniques lent confidence and robustness to the results. Coupled with the use of theoretical knowledge to explain the underlying mediation mechanisms, as well as the superior CFA and SEM fit indices, causal inferences can potentially be made based on this study. Nevertheless, future studies should conduct similar or related studies to further investigate the reciprocal causality between work engagement and work–life balance with self-efficacy. Data from similar studies of comparable datasets can also be pooled together to increase statistical power and for testing

invariances (Wunsch *et al.*, 2010). Lastly, Christian *et al.* (2011) also noted that research on work engagement could benefit from time-lagged designs, as the construct is conceptualised as a relatively stable state, at least within a timeframe of a year (Schaufeli *et al.*, 2006).

6. Conclusion

The current research was conducted to explore the underlying relationship linking self-efficacy to work–life balance and ultimately work engagement. Specifically, the hypothesised chain model was grounded in social cognitive theory and COR theory, both of which demonstrated that self-efficacious employees are capable of achieving work–life balance and experiencing work engagement despite the presence of work and family demands. The findings emphasised the importance of self-efficacy as a personal resource which positively affects the way employees perceive role demands. Such positive perceptions, in turn, give rise to causal chain-like synergistic effects which ultimately contribute to employees' work–life balance and work engagement.

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Appendices**Table I.** Demographic characteristics of research sample (N = 1,010)

Variable	Sample
Gender	Male: 36.5% (365) Female: 63.5% (635)
Age	Range: 17.0–71.0 years Mean: 41.1 years SD: 11.1 years
Marital status	Single/Never Married: 19.7% (198) Divorced/Separated/Widow(er): 8.2% (83) Married/Co-habiting: 71.1% (716)
Number of hours worked per week	Range: 1.0–100.0 hours Mean: 39.2 hours SD: 10.6 hours
Tenure at current company	Range: 0.0–42.0 years Mean: 8.1 years SD: 7.9 years
Education level	Secondary: 16.0% (161) TAFE/Diploma: 17.3% (174) University/College: 31.6% (319) Postgraduate: 35.1% (354)

Table II. Results of confirmatory factor analysis (CFA)

Model	χ^2	df	p-value	χ^2/df	SRMR	GFI	TLI	CFI	PCFI	RMSEA
1-factor	12,641.87	321	.00	39.38	.20	.41	.42	.47	.43	.20
4-factor	3,153.25	315	.00	10.01	.10	.80	.86	.88	.79	.09
5-factor	1,266.28	311	.00	4.07	.07	.91	.95	.96	.85	.06

Note: N = 1,010; df = degrees of freedom; GFI = Goodness-of-Fit Index; TLI = Tucker–Lewis Index; CFI = Comparative Fit Index; PCFI = Parsimony Comparative Fit Index; SRMR = Standardised Root Mean Square Residual; RMSEA = Root Mean Square Error of Approximation.

Table III. Descriptive statistics, bivariate correlations, and coefficient alpha reliabilities (N = 1,010)

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11
1. Gender	.63	.48	-										
2. Age	41.12	11.15	-.14***	-									
3. Marital status	1.53	.81	-.06	.28***	-								
4. Education	2.86	1.07	-.07*	.02	.05	-							
5. Tenure	8.10	7.92	-.11***	.52***	.06	-.09**	-						
6. Hours worked per week	39.22	10.63	-.20***	.12***	-.00	.12***	.09**	-					
7. Self-efficacy	60.28	24.42	.07*	-.13***	-.04	.04	-.18***	-.17***	(.96)				
8. Work demands	3.53	1.05	-.09**	.12***	.06	.14***	.15***	.35***	-.34***	(.91)			
9. Family demands	2.85	1.14	.03	.07*	.27***	-.01	.07*	-.12***	-.17***	.12***	(.86)		
10. Work–life balance	3.64	1.15	.03	-.09**	-.04	-.03	-.13***	-.28***	.65***	-.45***	-.17***	(.94)	
11. Work engagement	3.15	1.10	.02	.14***	.11***	.17***	-.01	.18***	.32***	.11**	-.06	.23***	(.92)

Note: * $p < .05$, ** $p < .01$, *** $p < .001$.

Table IV. Results of structural equation modelling (SEM)

Model	χ^2	df	p-value	χ^2/df	SRMR	GFI	TLI	CFI	PCFI	RMSEA
Full Mediation	1,737.48	316	.00	5.50	.14	.89	.93	.94	.85	.07
Partial Mediation	1,377.42	315	.00	4.37	.09	.91	.95	.95	.86	.06

Note: N = 1,010; df = degrees of freedom; GFI = Goodness-of-Fit Index; TLI = Tucker–Lewis Index; CFI = Comparative Fit Index; PCFI = Parsimony Comparative Fit Index; SRMR = Standardised Root Mean Square Residual; RMSEA = Root Mean Square Error of Approximation.