Components of burnout as mediators of the influence of work-home conflict on organisational commitment and satisfaction with life

Martina Kotzé

Business School University of the Free State

ABSTRACT

Work-home conflict is a universal phenomenon that has various outcomes for employees and organisations, such as job burnout (emotional exhaustion and cynicism), satisfaction with life, and organisational commitment. The purpose of this study was to explore the relationships between these variables and, more specifically, whether the two main components of burnout mediate the relationship between work-home conflict and affective organisational commitment, and work-home conflict and employees' satisfaction with life. A convenience sample including 212 full-time employees from various South African private and public organisations was included in the study. A survey using a structured questionnaire was used to gather the data. The hypotheses were tested using the covariance-based structural equations modelling software Mplus 8.2. The results showed that the relationship between work-home conflict and affective organisational commitment is mediated by cynicism, but not by emotional exhaustion, whereas the relationship between work-home conflict and satisfaction with life is mediated by emotional exhaustion, but not by cynicism.

INTRODUCTION

As the continuously challenging economic circumstances force organisations to cut costs, work smarter, and attract and retain the best talent, management and employees are pressurised to achieve even more with less (Pradhan, Jena and Kumari, 2016). The 24-hour economy also takes its toll by blurring the boundaries between work and non-work life (Ten Brummelhuis and Bakker, 2012). Work-home domains are two critical aspects of many peoples' lives. The effective management thereof requires conscious effort, time and energy. Despite more and more organisations providing adaptable and flexible workspaces (Deloitte, 2018), many employees are still trying to integrate work and home life more effectively, striving to achieve their potential in both domains. If not successful, the responsibilities and often conflicting demands of these domains may cause intrapersonal and interpersonal conflict, which can result in work-home conflict (Mukanzi and Senaji, 2017). Notwithstanding the findings of some studies indicating that cultural and contextual differences between countries may influence work-home relationships and its outcomes (Mukanzi and Senaji, 2017; Zhai, Wang and Weadon, 2017; Casper, Harris, Taylor-Bianco and Wayne, 2011), there is sufficient evidence to prove that work-home conflict is "a universal phenomenon and may result in a variety of negative outcomes" (Ke and Deng, 2018: 82).

Since continuous work-home conflict is a source of prolonged stress, it often leads to work exhaustion. Work exhaustion results from long-term exposure to demanding situations and subsequently to a higher intention to leave the organisation (Moore, 2000a; 2000b). Researchers operationalise work exhaustion by means of job burnout (Maslach and Jackson, 1981; Moore, 2000b). Past research showed that the antecedents to job burnout are usually situational factors such as role overload, role conflict and role ambiguity (Moore, 2000b; Maslach and Schaufeli, 1993). Therefore, not surprisingly, job burnout is one of the most commonly investigated outcomes of workhome conflict (Lingard and Francis, 2006). Work-home conflict precedes employee burnout, reducing employees' ability to cope with their job demands. This gives rise to a greater sense of work-home conflict and subsequently leads to a further increase in burnout – turning into a 'loss spiral' effect of work pressure, work-home conflict and emotional exhaustion (Demerouti, Bakker and Bulters, 2004). Because burnout interferes with employees' ability to achieve their goals and meet the job demands, it is likely to generate frustration (Moore, 2000b).

However, Pines and Aronson (1988) state that employees' perceptions of the cause of their burnout, and to what or who they attribute the blame, have significant consequences for action, as it will influence their attitudinal and behavioural responses.

Work-home conflict can also influence employees' commitment to their organisation negatively (Hatam, Jalali, Askarian and Kharazmi, 2016; Malik, Awan and Qurat-ul-Ain, 2015). Employees' level of commitment to their organisation has important consequences for the organisation, such as improved performance (Naghneh, Tafreshi, Naderi, Shakeri, Bolourchifard and Goyaghaj, 2017), enhanced employee engagement (Khalid and Khalid, 2015), reduced turnover intention (Chughtai and Zafar, 2006), and increased loyalty to the organisation (Muthuveloo and Rose, 2005). However, the consequences of work-home conflict can also extend beyond work and organisational outcomes, influencing employees' personal lives, i.e., their overall satisfaction with life (Bozkurt, Demirhan and Bal, 2016; Goh, Ilies and Wilson, 2015; Tamini and Kord, 2011; Allen, Herst, Bruck and Sutton, 2000).

From the above, it is evident that work-home conflict can have detrimental organisational and personal outcomes. However, the relationships between work-home conflict and the components of burnout (emotional exhaustion and cynicism), and its influence on organisational commitment and satisfaction of life are unclear. To fill this research gap, the purpose of the present study was to explore these relationships by creating a conceptual model, based on the literature, and test the model empirically. A discussion of the literature that guided the development of the conceptual model and the hypotheses follows.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Work-home conflict

Work-home conflict is an inter-role conflict that can originate at work or at home. Work can interfere with home life (work-home conflict), or home can interfere with work (home-work conflict). In other words, participation in the one domain is more difficult due to participation in the other (Hao, Wang, Liu, Wu and Wu, 2016; Casper et al., 2011; Netemeyer, Boles and McMurrian, 1996; Greenhaus and Beutell, 1985). Researchers usually distinguish between three types of work-home conflict: time-based conflict, where time spent in one domain makes it less possible to participate effectively in the other; strain-based conflict, where strain in one domain interferes with the ability to meet the demands of the other domain; and behaviour-based conflict, where the behaviours required in one domain may be less effective in or counterproductive to the other domain (Zheng and Wu, 2018; Greenhaus and Beutell, 1985). For the purposes of this study, work-home conflict is defined as a situation where the "general demands of,

time devoted to, and strain created by the job" interfere with performing home-related responsibilities (Netemeyer *et al.*, 1996: 401).

Organisational commitment

Employees' affective attitudes towards their organisation are referred to as their affective organisational commitment, and these affective attitudes determine employees' level of investment in and contributions to the organisation (Mercurio, 2015; Casper, Martin, Buffardi and Erdwins, 2002; Meyer and Allen, 1991). Affective organisational commitment characterises employees' relationships with their employers (Jaros, Jermier, Koehler and Sincich, 1993) and subsequently influences their decision to stay or leave the organisation (Casper *et al.*, 2011). Therefore, the challenge of attracting and retaining the best talent brought a renewed focus on employees' affective attitudes.

Organisational commitment was originally conceptualised as consisting of three components: affective commitment (emotional attachment to the organisation), normative commitment (a strong feeling of responsibility to the organisation), and continuous commitment (the result of the calculated perceived economic and social costs of leaving the organisation) (Meyer and Allen, 1991). However, a recent meta-analytic study showed that affective commitment is the essence of the organisational commitment construct, as it influences work behaviours more strongly than other components of commitment, and therefore should drive future research (Mercurio, 2015). Employees displaying affective organisational commitment have feelings of belonging, loyalty and affection towards the organisation as a result of their positive experiences with the organisation. Subsequently, they prefer to stay at the organisation because they want to, and not because they need to (e.g. because of financial considerations) (Casper et al., 2011). Owing to its association with positive work and organisational outcomes, organisations should cultivate employees' affective commitment (Casper et al., 2002).

The relationship between work-home conflict and organisational commitment

Several studies support the notion that there is a relationship between employees' experiences of workhome conflict and their organisational commitment. A study including nurses and paramedics at a hospital in Iran (Hatam *et al.*, 2016) showed a strong, negative statistically significant relationship between work-home conflict and organisational commitment, and indicated that employees who experienced high levels of workhome conflict also experienced low levels of affective organisational commitment. Malik *et al.* (2015) explored work-home conflict in the service sector in Pakistan and found that it was negatively related to affective and normative organisational commitment. A related study found that work-home conflict negatively influences professional commitment (Zheng and Wu, 2018).

Satisfaction with life

Life satisfaction is unique to the person evaluating it, as different people choose different criteria against which to measure their quality of life (McMillan, 2011; Diener, Emmons, Larsen and Griffin, 1985). Overall evaluations of one's life, as well as day-to-day feelings of happiness, contribute to life satisfaction. While present life events and the cognitive interpretations thereof may influence life satisfaction in the short and medium term, peoples' affective disposition and personality can influence life satisfaction in the long term (Pavot and Diener, 2008). However, Costa and McCrae (1980) found that, regardless of the influence of interceding life events, overall life satisfaction tends to be stable over time. While some researchers view life satisfaction as the sum of people's satisfaction with different life domains, such as work, health and marital life (Schimmack, 2008), others (for example, Diener et al., 1985) view life satisfaction as an overall evaluation of a person's life. Nevertheless, the findings of a meta-analytic study by Heller, Watson and Ilies (2004) support the merit of both approaches. Therefore, satisfaction with life goes beyond satisfaction with individual life domains, but it can be affected by specific life domains (De Coning, Rothmann and Stander, 2019).

The relationship between work-home conflict and satisfaction with life

Since individuals' satisfaction with different life domains (e.g. work) is linked to their assessment of their overall quality of life, work-home conflict can, when not managed effectively, influence their overall satisfaction with life (Heller et al., 2004; Kossek and Ozeki, 1998). Past research indicated that those who struggle to manage the conflicting demands between their work- and homelife experience decreased levels of life satisfaction (Goh et al., 2015; Allen et al., 2000). In a sample of knowledge workers, Wolfram and Gratton (2014) found that negative spillover from work to home life was related to lower levels of life satisfaction, while Goh et al. (2015) found that employees' daily perceived workload positively predicted daily work-family conflict, which in turn negatively predicted daily life satisfaction.

The relationship between work-home conflict and burnout

Burnout consists of three interrelated, but separate components. The first is a state of emotional exhaustion that develops in reaction to stressful and demanding working conditions over an extended duration of time. This phase is characterised by a lack of energy and emotional resources to cope with the continued demands (Schutte, Toppinnen, Kalimo and Schaufeli, 2000). The second is cynicism (depersonalisation) – a form of coping by distancing oneself mentally from one's work in order to preserve energy and to protect oneself from further emotional depletion (Maslach, Schaufeli and

Leiter, 2001; Singh and Goolsby, 1994). The third is reduced personal accomplishment - feelings of a lack of achievement and incompetence that follow after emotional exhaustion and cynicism (Maslach et al., 2001; Schutte et al., 2000). However, accumulating evidence suggests that exhaustion and cynicism constitute the core of burnout (Taris, Ybema and Van Beek, 2017; Rothmann, 2008). Therefore, the third component, reduced personal accomplishment, is often excluded in recent job-burnout studies.

According to Lingard and Francis (2006), job burnout is one of the most commonly investigated outcomes of workhome conflict. Past studies show that work-home conflict is positively related to psychological health, including emotional strain (Greenhaus, Allen and Spector, 2006). A study by Piko and Mihalka (2018) measuring workhome conflict, burnout and psychosocial health among Hungarian educators found that burnout, specifically emotional exhaustion and psychosomatic symptoms, has a positive statistically significant correlation with work-home conflict. In a restructuring hospital work environment, Burke and Greenglass (2001) assert that nursing staff who reported greater work-home conflict also reported higher levels of emotional exhaustion and cynicism. Wang, Liu, Wang and Wang (2012) found that work-home conflict is related to emotional exhaustion and cynicism of male and female doctors, whereas Wu, Wu, Li and Dan (2018) found that work-home conflict has a positive statistically significant influence on the job burnout of professionals working in the construction industry. In his study on the banking sector in Pakistan, Rubab (2017) established that work-home conflict has a significant and positive effect on burnout.

The relationship between burnout and organisational commitment, and burnout and satisfaction with life

A meta-analytic examination of the correlates of the different components of burnout (Lee and Ashforth, 1996) showed that emotional exhaustion was positively associated with turnover intentions and negatively associated with organisational commitment, while cynicism was negatively associated with organisational commitment. A study involving employees employed at social security organisations in Iran also showed a negative relationship between burnout and organisational commitment (Haghani, Hazraty and Moosivand, 2016). Gemlik, Sisman and Sigri (2010) conducted a study in the health sector in Turkey and found that emotional exhaustion explained 53.3 per cent of the variance in affective organisational commitment and 32.6 per cent in normative organisational commitment, while cynicism explained 23 per cent of the variance in affective organisational commitment and 17.6 per cent of the variation in normative organisational commitment.

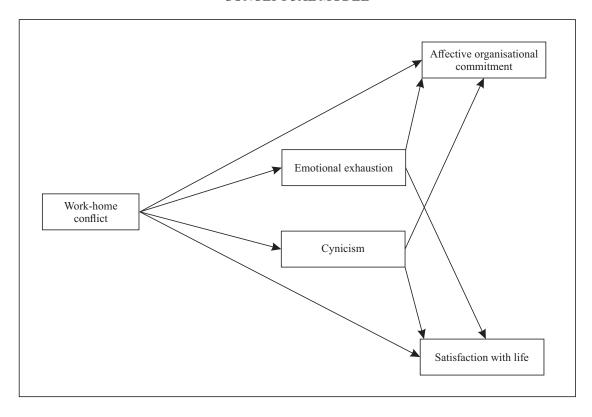
Furthermore, working conditions have an impact on overall satisfaction with life through employees' perceptions of the quality of their non-working and working life.

Therefore, employees' working conditions influence their life satisfaction (Demerouti, Bakker, Nachreiner and Schaufeli, 2000). Past studies show that burnout has a negative influence on satisfaction with life (Bozkurt et al., 2016). Tamini and Kord (2011) explored the influence of burnout on job and life satisfaction among employees employed at a university in India and concluded that cynicism explained 30.9 per cent of the variance in life satisfaction, while emotional exhaustion only explained 6.3 per cent of the variance in life satisfaction. These results are supported by a study by Lambert, Barton-Belessa and Hogan (2015) who investigated the consequences of emotional burnout among correctional staff in a United States mid-western maximum security prison. They found that emotional exhaustion has significant negative associations with life satisfaction. A study including British Columbian physicians in rural areas (Lavanchy, Connelly, Grzybowski, Michalos, Berkowitz and Thommasen, 2004) concluded that emotional exhaustion and depression accounted for 44 per cent of the variance in life satisfaction scores. Another study involving Chinese nurses from three hospitals in Shandong found that there is a negative statistically significant correlation between burnout and satisfaction with life and that every component of job burnout also has a positive statistically significant correlation with negative emotions (Qu and Wang, 2015).

The mediating role of burnout

Several researchers explored the mediating role of burnout in demanding working conditions and organisational and personal outcomes. For instance, Demerouti et al. (2000) investigated the mediating role of burnout between German nurses' working conditions and their satisfaction with life. They found that both components of burnout (emotional exhaustion and cynicism) have significant, negative relationships with satisfaction with life and that burnout plays a mediating role in the relationship between job demands and satisfaction with life. Thanacoody, Bartram and Casimir (2009) conducted a study among Australian healthcare workers in the oncology field to examine the effects of burnout and supervisory social support on the relationship between work-home conflict and intention to leave. They found that burnout mediates the relationship between work-home conflict and intention to leave the organisation. Anwar, Sidin and Javed (2016) found in their study in the manufacturing and services sector in Pakistan that work exhaustion mediates the relationship between work-home conflict and employee turnover intention, while a study by Moore (2000a) including technology professionals showed that burnout partially mediates the effects of workplace factors (such as perceived workload and role conflict) and turnover intention.

FIGURE 1 CONCEPTUAL MODEL



Therefore, based on past research, it is proposed that the components of burnout mediate the negative relationship between work-home conflict and affective organisational commitment and work-home conflict and satisfaction with life (as depicted in Figure 1). Therefore, the following four mediation hypotheses were developed for the study:

- H1: Employees' level of emotional exhaustion mediates the relationship between their work-home conflict and affective organisational commitment such that the indirect effect is negative
- H2: Employees' level of cynicism mediates the relationship between their work-home conflict and affective organisational commitment such that the indirect effect is negative
- H3: Employees' level of emotional exhaustion mediates the relationship between their work-home conflict and satisfaction with life such that the indirect effect is negative
- H4: Employees' level of cynicism mediates the relationship between their work-home conflict and satisfaction with life such that the indirect effect is negative

RESEARCH METHODOLOGY

Sample

A convenience sample of 212 full-time employees from private and public organisations participated in the study. Over fifty-six per cent (56.1%) of the respondents were male and the majority of the respondents (82.4%) were between 26 and 45 years old. Their home languages are indigenous African languages (68.3%), Afrikaans (24%), and English (7.7%). Twenty-eight-point-three per cent (28.3%) of the respondents had more than five years to 10 years of work experience; 26.98 per cent of the respondents had more than 10 years to 15 years of work experience; and 34 per cent of the respondents had more than 15 years of work experience. Only 10.8 per cent of the respondents had five years or less work experience.

Measurement instruments

A questionnaire was compiled with a seven-point Likerttype response scale varying from strongly disagree to strongly agree. The following items were included: five items measuring work-home conflict (e.g. 'The amount of time my job takes up makes it difficult to fulfil home responsibilities') (Netemeyer et al., 1996); three items measuring affective organisational commitment (e.g. 'I feel like part of the family at my organisation') (Meyer, Allen and Smith, 1993); five items measuring satisfaction with life (e.g. 'So far I have gotten the important things I want in life') (Diener et al., 1985); and nine items measured the two burnout scales: Emotional exhaustion (five items) (e.g. 'Working all day is really a strain for me'), and Cynicism (four items)

(e.g. 'I have become less interested in my work since I started this job') from Maslach's Burnout Inventory -General Survey (MBI-GS) (Schaufeli, Martinez, Pinto, Salanova, and Bakker, 2002).

Statistical analysis

To test the hypotheses, the covariance-based structural equations modelling software Mplus 8.2 was used. The assessment of the hypotheses followed the two-step process of first assessing the measurement model for construct validity and then testing the structural model to accept or reject the hypotheses (Bagozzi and Yi, 2012). Before assessing the measurement model for construct validity, the univariate normality of the data collected to measure the constructs in the conceptual model was assessed. Based on the Kolmogorov-Smirnov and Shapiro-Wilk tests using IBM SPSS version 25, it was concluded that for each item the proposition of univariate normality does not hold. Thus, it can also be argued that the data used to measure the constructs do not meet the criterion of multivariate normality. Therefore, to assess the measurement model and the structural model, the MLR estimator was used, as recommended in Muthén and Muthén (2017). The MLR estimator provides maximum likelihood parameter estimates with standard errors and a chi-square test statistic that are robust to non-normality.

The assessment of construct validity of the measurement model comprises the following steps (Bagozzi and Yi, 2012):

- · assessing the internal consistency reliability of the measures based on the composite reliability value (CR);
- · confirming convergent validity based on the strength and statistical significance of the standardised loadings of the items and the average variance extracted (AVE) of each construct; and
- establishing if the constructs are distinct from one another by applying the Fornell-and-Larker criterion to confirm discriminant validity.

Evidence of the internal consistency reliability of the items measuring a construct is a CR value of 0.7 or higher for a construct. For evidence of convergent validity, the standardised loading of each item in the measurement model must be at least 0.5 or higher, the ideal being a standardised loading of 0.7 or higher, and statistically significant (Hair Jr., Black, Babin, Anderson and Tatham, 2006). Further required evidence of convergent validity is an AVE of 0.5 or higher for each construct. Based on the Fornell-and-Larcker criterion, evidence of discriminant validity is apparent when, for each pair of constructs in the measurement model, the square root of the AVE of each construct forming the pair is higher than the correlation between the two constructs. Each aspect of construct validity must be met before the model fit of the measurement model can be evaluated.

In this study, the model fit indices and the recommended cut-off values used to evaluate how well the specified measurement model reproduces the covariance matrix among the indicators included the following – based on the recommendations in Hair *et al.* (2006) – the χ^2 /df ratio must be less than 3.0; the root mean square error of approximation (RMSEA) value must be less than 0.8; and the comparative-fit index (CFI) and the Tucker-Lewis index (TLI) must be higher than 0.9.

In the process of interpreting the results of the structural model to test the hypotheses, the model fit of the structural model was first evaluated using the same model-fit indices and recommended values as in the evaluation of the fit of the measurement model. Acceptable model fit must be established before the standardised path coefficients and p-values can be interpreted to accept or reject the hypotheses. The acceptance of each hypothesis was based on the following criteria, as outlined in Hair *et al.* (2006): first, the sign of the estimated indirect effect must be in the same direction as the hypothesised indirect effect; and second, the p-value (two-tailed) of the indirect effect must be equal to or less than 0.05.

RESULTS

Assessment of the measurement model

Before testing the hypotheses, the measurement model was assessed for internal consistency, convergent validity and discriminant validity, as explained in the section outlining the statistical analysis procedure. Although the model fit of the measurement model was acceptable ($\chi^2/df = 1.704$; RMSEA = 0.058; CFI = 0.938; TLI = 0.928), not all the constructs met the requirements for construct validity. For each construct in the measurement model, the CR value exceeded 0.7. However, the AVE of 'satisfaction with life' was 0.474, below the minimum value of 0.5. Therefore, to improve the AVE of the construct 'satisfaction with life' to above 0.5, the item SWL4 (standardised loading of 0.573; p = 0.000 [two-tailed]) was excluded from the measurement model. After this modification to the measurement model, it was assessed again for construct validity.

In Table 1 the results of the modified measurement model are presented. As seen in Table 1, all standardised

TABLE 1
RESULTS OF THE MODIFIED MEASUREMENT MODEL

Construct	Item	Standardised loading	p-value (two-tailed)	AVE	CR
Emotional exhaustion	EE1	0.826	0.000	0.600	0.882
	EE2	0.741	0.000		
	EE3	0.779	0.000		
	EE4	0.703	0.000		
	EE5	0.818	0.000		
Cynicism	CYN1	0.852	0.000		0.863
	CYN2	0.889	0.000	0.617	
	CYN3	0.784	0.000	0.617	
	CYN4	0.582	0.000		
Work-home conflict	WHC1	0.792	0.000	0.748	0.936
	WHC2	0.911	0.000		
	WHC3	0.957	0.000		
	WHC4	0.942	0.000		
	WHC5	0.694	0.000		
Satisfaction with life	SWL1	0.600	0.000	- 0.509	0.800
	SWL2	0.814	0.000		
	SWL3	0.847	0.000		
	SWL5	0.543	0.000		
Affective organisational commitment	OC1	0.919	0.000	0.723	0.886
	OC2	0.890	0.000		
	OC3	0.730	0.000		

loadings exceed the minimum of 0.5 and are statistically significant. Furthermore, the AVE of each construct is higher than 0.5, and the CR value of all constructs is higher than 0.7. Thus, it can be concluded that the modified measurement model exhibits adequate internal consistency and convergent validity to continue with the assessment of the measurement model for discriminant validity.

The results of the Fornell-and-Larcker criterion used to assess discriminant validity are presented in Table 2. As seen in Table 2, for each pair of constructs the square root of the AVE of each construct is higher than the correlation between the two constructs, providing sufficient evidence of discriminant validity in the measurement model.

Based on the measurement model results reported up to this point, it can be argued that the measurement model exhibits adequate construct validity to continue with the evaluation of the model fit of the modified measurement model. The values of the model fit indices were as follows: the χ^2/df was 1.720, the RMSEA was 0.058, the CFI and the TLI were 0.940 and 0.930, respectively. Based on these results, it can also be concluded that the model fit of the modified measurement model was acceptable and the assessment of the structural model can continue to accept or reject the hypotheses.

TABLE 2 DISCRIMINANT VALIDITY RESULTS

Construct	EE	CYN	WHC	SWL	OC
EE	0.775				
CYN	0.717	0.786			
WHC	0.468	0.447	0.865		
SWL	-0.396	-0.296	-0.235	0.713	
OC	-0.393	-0.551	-0.251	0.478	0.850

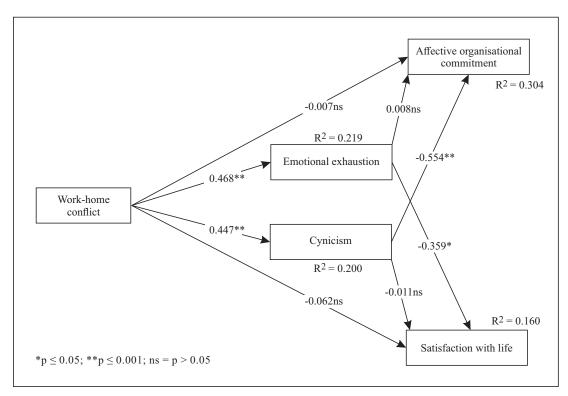
Notes: CYN = Cynicism; EE = Emotional exhaustion; OC = Affective organisational commitment; SWL = Satisfaction with life; WHC = Work-home conflict.

On the diagonal the square root of the AVE and below the diagonal the correlation between a pair of constructs

Assessment of the main effects

Figure 2 shows the results of the main effects on the structural model. The model fit of the structural model was acceptable. The χ^2/df was 1.720, the RMSEA was 0.058, the CFI was 0.940, and the TLI was 0.930. Workhome conflict, emotional exhaustion and cynicism explained 30.4 per cent of the variance in affective organisational commitment. On the other hand, work-home conflict, emotional exhaustion and cynicism explained 16 per cent of the variance in satisfaction with life.





Relationship	Standardised effect	p-value (two-tailed)	Comment					
WHC → OC (total effect)	-0.251	0.002	Total effect sig.					
WHC → OC (direct effect)	-0.007	0.934	Direct effect not sig.					
$\mathrm{WHC} \to \mathrm{EE} \to \mathrm{OC}$	0.004	0.943	H1 rejected					
$\text{WHC} \rightarrow \text{CYN} \rightarrow \text{OC}$	-0.248	0.001	H2 accepted					
WHC → SL (total effect)	-0.237	0.003	Total effect sig.					
WHC → SL (direct effect)	-0.062	0.470	Direct effect not sig.					
$WHC \rightarrow EE \rightarrow SWL$	-0.168	0.027	H3 accepted					
	†	<u> </u>	<u> </u>					

TABLE 3
MEDIATION HYPOTHESES RESULTS

Note: CYN = Cynicism; EE = Emotional exhaustion; OC = Affective organisational commitment; SWL = Satisfaction with life; WHC = Work-home conflict

-0.005

Based on these results, it can be argued that, collectively, work-home conflict, emotional exhaustion and cynicism are more relevant determinants of affective organisational commitment than of satisfaction with life. Work-home conflict explained almost a similar amount of variance in emotional exhaustion and cynicism (21.9% and 20%, respectively), confirming that work-home conflict is almost of equal importance in predicting emotional exhaustion and cynicism.

 $WHC \rightarrow CYN \rightarrow SWL$

Other important results in Figure 2 are the following: work-home conflict does not have a statistically significant influence on affective organisational commitment and satisfaction with life when controlling for the influences of emotional exhaustion and cynicism. Of the two components measuring burnout, only cynicism has a negative statistically significant influence on affective organisational commitment, and only emotional exhaustion has a negative statistically significant influence on satisfaction with life. These results suggest that each component of burnout has a different influence on affective organisational commitment and satisfaction with life.

Assessment of the mediation hypotheses

Table 3 shows the results of the testing of the mediation hypotheses. The negative influence of work-home conflict on affective organisational commitment was fully mediated by emotional exhaustion and cynicism as mediators in parallel. The direct effect was not statistically significant (-0.007; p = 0.934 [two-tailed]). However, only the indirect effect via cynicism was statically significant (-0.248; p = 0.001 [two-tailed]). Thus, H2 was accepted and H1 rejected.

The negative influence of work-home conflict on satisfaction with life was also fully mediated by emotional exhaustion and cynicism as mediators in parallel. Again, the direct effect was not statistically significant (-0.062; p = 0.470 [two-tailed]). Only the indirect effect

via emotional exhaustion was statistically significant (-0.168; p=0.027 [two-tailed]). Thus, H3 was accepted and H4 rejected.

H4 rejected

DISCUSSION

0.939

The purpose of the study was to explore the relationships between work-home conflict, the components of burnout, affective organisational commitment, and satisfaction with life. The results reported in this study show that work-home conflict does have a statistically significant negative influence on affective organisational commitment (referring to the total effect reported in Table 3). These results are in line with previous empirical findings of studies in the health sector in Iran (Hatam et al., 2016), and in the service sector in Pakistan (Malik et al., 2015). The findings of the present study also show that work-home conflict does have a statistically significant negative influence on employees' satisfaction with life (referring only to the total effect reported in Table 3). These results support the notion and empirical findings of previous researchers who found that workhome conflict can influence employees' satisfaction with life negatively (Goh et al., 2015; Heller et al., 2004; Wolfram and Gratton, 2014).

The results of the mediation analysis provide evidence of the hypothesised mediating role of the components of burnout in the relationship between work-home conflict and affective organisational commitment. Of the two components of burnout, only cynicism negatively statistically significantly mediated the relationship between work-home conflict and affective organisational commitment. Affective organisational commitment is a result of employees' positive experiences in the workplace and involves feelings of belonging, affection and loyalty to the organisation, indicating employees' desire to stay with the organisation because they *want* to (Casper *et al.*, 2002). Cynicism involves employees withdrawing emotionally from their work in order to protect themselves from

further emotional depletion (Moore, 2000b). Based on the results, cynicism is the mechanism by which work-home conflict negatively influences organisational commitment. Thus, as work-home conflict increases, cynicism increases (employees become emotionally more detached from their work), and enhanced levels of cynicism lead to lower levels of affective organisational commitment cynicism negatively influences organisational commitment. Compared to past research, these results bring a new perspective on the mediating role of burnout in the relationship between work-home conflict and affective organisational commitment - as cynicism and emotional exhaustion, and not only emotional exhaustion or burnout was included as mediators. Moore (2000a) investigated only emotional exhaustion as a mediator of the influence of workplace factors on turnover intention and found empirical evidence to support the contention. Anwar et al. (2016) also only investigated work exhaustion as a mediator of the relationship between perceived work overload, work-family conflict, and turnover intentions. Lastly, Thanacoody et al. (2009) found that burnout (an overall score calculated by averaging the scores for emotional exhaustion and disengagement) mediated the relationship between work-home conflict and employees' intention to leave the organisation. Thus, to date, no study provided empirical evidence of cynicism, a main component of burnout, as a mediator in the relationship between work-home conflict and affective organisational commitment.

The results of the present study further showed that emotional exhaustion is a mediator in the relationship between work-home conflict and satisfaction with life. but not cynicism. Emotional exhaustion means that employees feel emotionally drained and depleted of energy (Demerouti et al., 2000). Therefore, based on the acceptance of the hypothesis that emotional exhaustion mediates the negative influence of work-home conflict on satisfaction with life, emotional exhaustion is the mechanism by which work-home conflict negatively influences satisfaction with life. As work-home conflict increases, emotional exhaustion increases, and increased levels of emotional exhaustion lead to lower levels of satisfaction with life as emotional exhaustion negatively influences satisfaction with life. These results partially support the results of a study conducted by Demerouti et al. (2000) who found that both emotional exhaustion and cynicism were mediators in the relationship between job demands and satisfaction with life.

In summary, the theoretical contribution of the study is as follows. The results demonstrate the usefulness to theory development to investigate emotional exhaustion and cynicism, the two main components of burnout, as mediators of the relationship between work-home conflict and affective organisational commitment, and workhome conflict and satisfaction with life. Although it can be assumed that emotional exhaustion and cynicism as the two main components of burnout should mediate the relationship between work-home conflict, and affective organisational commitment and satisfaction with life, the results of the study present divergent evidence. Indeed, only cynicism mediates the relationship between workhome conflict and affective organisational commitment and only emotional exhaustion mediates the relationship between work-home conflict and satisfaction with life. These results are important to theory building as it demonstrates that the underlying components of burnout could have different mediation effects, pointing out that generalisations of these two components as mediators between work-home conflict, and affective organisational commitment and satisfaction with life could be erroneous. Such generalisations should be avoided in other research where burnout is used as a mediator, as suggested by the results in this study.

From a practical implications perspective, management would need to assist employees to manage their workhome conflict and burnout levels more effectively. Organisational support and personal development interventions can play a role. Organisational support can take the form of formal and informal workplace policies and practices. Formal workplace policies may include more flexible work arrangements, such as flexible work hours, shorter work weeks, working from home, and onsite childcare (Jang and Zippay, 2011). Informal support, such as emotional support and sensitivity from colleagues (Kelly, Moen, Oakes, Fan, Okechukwu et al., Davis, Hammer, Kossek, King, Hanson, Mierzwa and Casper, 2014), as well as supervisor support (Zhai et al., 2017; Hammer, Kossek, Yragui, Bodner and Hanson, 2009), can assist employees in the effective management of work-home conflict. Supervisor support can include emotional support (comfort, caring or encouragement), or can include specific actions (e.g. reacting positively on scheduling requests from employees for flexibility) (Zhai et al., 2017; Hammer et al., 2009). By creating a supportive workplace culture, management can assist employees to reduce work-home conflict and avoid burnout (Jang and Zippay, 2011). A recent South African study (Kotzé, 2018) has shown that employees' perceptions of their organisation's workplace practices (i.e. whether it reflects respect and care for them) play a central role in their burnout levels.

At an individual level, organisations can design interventions to develop employees' personal resources. Empirical evidence shows that personal resources, such as psychological capital (self-efficacy, hope, resilience and optimism), as well as cross-cultural competencies, can reduce job burnout (Kotzé and Massyn, 2019; Nel and Kotzé, 2017). Past studies indicate that short interventions to develop these personal skills have been quite successful (Reichard, Dollwet and Louw-Potgieter, 2014). Chan (2011) established that significant changes were observed in teachers' vulnerability to burnout and their level of life satisfaction as a result of an eight-week intervention that focused on gratitude and meaningful life orientation by means of self-reflection and meditation.

CONCLUSIONS

The study explored the relationships between workhome conflict, burnout, organisational commitment, and employees' satisfaction with life. It specifically examined whether the components of burnout (emotional exhaustion and cynicism) mediate the relationship between work-home conflict and employees' affective organisational commitment, and work-home conflict and satisfaction with life. This study yielded useful insights for further exploring the influence of work-home conflict and the components of job burnout on organisational and personal outcomes. By using formal and informal support mechanisms, as well as short workplace interventions, management can assist employees to manage the workhome relationship and employees' stress levels more effectively to prevent emotional exhaustion and cynicism - avoiding detrimental effects to the organisation and employees. The effective management of work-home conflict and employees' levels of stress can have positive organisational- and personal outcomes.

LIMITATIONS AND RECOMMENDATIONS

The study made use of a convenience sample and included employees from various public and private organisations. Future research may investigate these relationships within specific occupational groups, including larger sample sizes.

REFERENCES

- Allen, T.D., Herst, D.E.L., Bruck, C.S. and Sutton, M. 2000. Consequences associated with work-to-family conflict: A review and agenda for future research. *Journal of Occupational Health Psychology*, 5(2): 278-308.
- Anwar, F., Sidin, J.P. and Javed, A. 2016. Antecedents of work exhaustion, its mediating role and subsequent effects on turnover intentions. *Business Management Dynamics*, 5(8): 85-94.
- Bagozzi, R.P. and Yi, Y. 2012. Specification, evaluation, and interpretation of structural equation models. *Journal of the Academy of Marketing Science*, 40(1): 8-34.
- Bartlett, K.R. 2001. The relationship between training and organizational commitment: A study in the healthcare field. *Human Resource Development Quarterly*, 12(4): 335-352.
- Bozkurt, S., Demirhan, A. and Bal, Y. 2016. Determining the effect of job burnout on life satisfaction: An empirical research for Turkey. *Kocaeli Üniversitesi Sosyal Bilimler Dergisi, KOSBED*, 31: 83-94.
- Burke, R.J. and Greenglass, E.R. 2001. Hospital restructuring, work-family conflict and psychological burnout among nursing staff. *Psychology and Health*, 16: 583-594.

- Casper, W.J., Harris, C., Taylor-Bianco, A. and Wayne, J.H. 2011. Work-family conflict, perceived supervisor support and organizational commitment among Brazilian professionals. *Journal of Vocational Behavior*, 79(3): 640-652.
- Casper, W.J., Martin, J.A., Buffardi, L.C. and Erdwins, C.J. 2002. Work-family conflict, perceived organizational support, and organizational commitment among employed mothers. *Journal of Occupational Health Psychology*, 7(2): 99-108.
- Chan, D.W. 2011. Burnout and life satisfaction: Does gratitude intervention make a difference among Chinese school teachers in Hong Kong? *Educational Psychology*, 31(7): 809-823.
- Costa, P.T. and McCrae, R.R. 1980. Influence of extraversion and neuroticism on subjective well-being: Happy and unhappy people. *Journal of Personality and Social Psychology*, 38(4): 668-678 (Online). Available: http://dx.doi.org/10.1037/0022-3514.38.4.668
 [Accessed: 12 October 2018].
- Chughtai, A.A. and Zafar, S. 2006. Antecedents and consequences of organizational commitment among Pakistani university teachers. *Applied H.R.M. Research*, 11(1): 39-64.
- De Coning, J.A., Rothmann, S. and Stander, M.W. 2019. Do wage and wage satisfaction compensate for the effects of a dissatisfying job on life satisfaction? *SA Journal of Industrial Psychology*, 45(0), Art. #1552, 11 pages (Online). Available: https://doi.org/10.4102/sajip.v45i0.1552 [Accessed: 26 February 2019].
- Deloitte. 2018. 2018 Deloitte Human Capital Trends Report for South Africa: The rise of the social enterprise (Online). Available: https://www2.deloitte.com/content/dam/Deloitte/za/Documents/human-capital/za-2018-HCtrends_South%20Africa_090518.pdf [Accessed: 14 September 2018].
- Demerouti, E., Bakker, A.B. and Bulters, A.J. 2004. The loss spiral of work pressure, work-home interference and exhaustion: Reciprocal relationship in a three-wave study. *Journal of Vocational Behavior*, 64: 131-149.
- Demerouti, E., Bakker, A.B., Nachreiner, F. and Schaufeli, W.B. 2000. A model of burnout and life satisfaction amongst nurses. *Journal of Advanced Nursing*, 32(2): 454-262.
- Diener, E., Emmons, R.A., Larsen, R.J. and Griffin, S. 1985. The satisfaction with life scale. *Journal of Personality Assessment*, 49(1): 71-75.
- Gemlik, N., Sisman, F.A., and Sigri, U. 2010. The relationship between burnout and organizational commitment among health sector staff in Turkey. *Journal of Global Strategic Management*, 4(2): 137-149.

- Goh, Z., Ilies, R. and Wilson, K.S. 2015. Supportive supervisors improve employees' daily lives: The role supervisors play in the impact of daily workload on life satisfaction via work-family conflict. Journal of Vocational Behavior, 89: 65-73.
- Greenhaus, J.H. and Beutell, N.J. 1985. Sources of conflict between work and family roles. Academy of Management Review, 10(1): 76-88.
- Greenhaus, J.H., Allen, T.D. and Spector, P.E. 2006. Health consequences of work-family conflict: The dark side of the work-family interface. Research in Occupational Stress and Well Being, 5: 61-98.
- Haar, J.M. and Roche, M.A. 2010. Family supportive organization perceptions and employee outcomes: The mediating effects of life satisfaction. The International Journal of Human Resource Management, 21(7): 999-1014 (Online). Available: https://doi.org/10.1080/ 09585191003783462 [Accessed: 15 January 2019].
- Hair, J.F., Jr., Black, W.C., Babin, B.J., Anderson, R.E. and Tatham, R.L. 2006. Multivariate data analysis (6th ed.). New Jersey: Pearson Prentice Hall.
- Haghani, S.R., Hazraty, M. and Moosivand, M. 2016. The relationship between burnout and organizational commitment with role of moderator of demographic variables (Case study: Social security organization of West Department of Mazandaran Province). The Turkish Online Journal of Design, Art and Communication. Available: http://tojdac.org/tojdac/ VOLUME6-AGUSPCL files/tojdac v060AG SE165.pdf

[Accessed: 11 September 2019].

- Hammer, L.B., Kossek, E.E., Yragui, N.L., Bodner, T.E. and Hanson, G.C. 2009. Development and validation of a multidimensional measure of family supportive supervisor behaviors (FSSB). Journal of Management, 35(4): 837-856.
- Hao, J., Wang, J., Liu, L., Wu, W. and Wu, H. 2016. Perceived organizational support impacts on the associations of work-family conflict or family-work conflict with depressive symptoms among Chinese doctors. International Journal of Environmental Research and Public Health, 13(3): 326.
- Hatam, N., Jalali, M.T., Askarian, M. and Kharazmi, E. 2016. Relationship between family-work and workfamily conflict with organizational commitment and desertion intention among nurses and paramedical staff at hospitals. International Journal of Community Based Nursing and Midwifery, 4(2): 107-118.
- Heller, D., Watson, D. and Ilies, R. 2004. The role of person versus situation in life satisfaction: A critical examination. Psychological Bulletin, 130(4): 574-600 (Online). Available: http://dx.doi.org/10.1037/0033-2909.130.4.574 [Accessed: 25 January 2019].

- Henseler, J., Ringle, C.M. and Sarstedt, M. 2015. A new criterion for assessing discriminant validity in variance-based structural equation modeling. Journal of the Academy of Marketing Science, 43(1): 115-135.
- Jaros, S.J., Jermier, J.M., Koehler, J.W. and Sincich, T. 1993. Effects of continuance, affective, and moral commitment on the withdrawal process: An evaluation of eight structural equation models. Academy of Management Journal, 36(5): 951-995.
- Jang, J. and Zippay, A. 2011. The juggling act: Managing work-life conflict and work-life balance. The Journal of Contemporary Social Services, 92(1): 84-90.
- Ke, J. and Deng, X. 2018. Family-friendly human resource practice, organizational commitment, and job performance among employees: The mediating role of workplace spirituality. Journal of Human Resource and Sustainability Studies, 6: 81-91.
- Kelly, E.L., Moen, P., Oakes, J.M., Fan, W., Okechukwu, C., Davis, K.D., Hammer, L., Kossek, E., King, R.B., Hanson, G., Mierzwa, F. and Casper, L. 2014. Changing work and work-family conflict: Evidence from the work, family, and health network. American Sociological Review, 79(3): 485-516.
- Khalid, A. and Khalid, S. 2015. Relationship between organizational commitments, employee engagement and career satisfaction: A case of University of Gujrat, Pakistan. *Journal of Asian Studies*, 3(3): 323-330.
- Kossek, E.E. and Ozeki, C. 1998. Work-family conflict, policies, and the job-life satisfaction relationship: A review and directions for organizational behaviorhuman resources research. Journal of Applied Psychology, 83(2): 139-149.
- Kotzé, M. 2018. How job resources and personal resources influence work engagement and burnout. African Journal of Economic and Management Studies, 9(2): 148-164. Available: https://doi.org/10. 1108/AJEMS-05-2017-0096 [Accessed: 12 September 2019].
- Kotzé, M. and Massyn, L. 2019. The influence of employees' cross-cultural psychological capital on workplace psychological well-being. SA Journal of Industrial Psychology/SA Tydskrif vir Bedryfsielkunde, 45(0): a1661. Available: https://doi.org/10.4102/sajip. v45i0.1660 [Accessed: 02 September 2019].
- Lambert, E.G., Barton-Belessa, S.M. and Hogan, N.L. 2015. The consequences of emotional burnout among correctional staff. SAGE Open, April-June 2015: 1-15, doi:10.1177/2158244015590444.
- Lavanchy, M., Connelly, I., Grzybowski, S., Michalos, A.C., Berkowitz, J. and Thommasen, H.V. 2004. Determinants of rural physicians' life and job satisfaction. Social Indicators Research, 69: 93-101.

- Lee, R.T. and Ashforth, B.E. 1996. A metal-analytic examination of the correlates of the three dimensions of job burnout. *Journal of Applied Psychology*, 81(2): 123-133.
- Lingard, H. and Francis, V. 2006. Does supportive work environment moderate the relationship between work-family conflict and burnout among construction professionals? *Construction Management and Economics*, 24: 185-196.
- Maslach, C., Schaufeli, W.B. and Leiter, M.P. 2001. Job burnout. *Annual Review of Psychology*, 52: 397-22.
- Maslach, C. and Schaufeli, W.B. 1993. Historical and conceptual development of burnout. In Schaufeli, W.B., Maslach, C. and Marek, T. (Eds.), *Professional burnout: Recent developments in theory and research*, 1-18. Washington, DC: Taylor and Francis.
- Maslach, C. and Jackson, S.E. 1981. The measurement of experienced burnout. *Journal of Occupational Behaviour*, 2: 99-113.
- Malik, S., Awan, A.G. and Qurat-ul-Ain. 2015. Role of work-family conflict on organizational commitment and organizational effectiveness. *European Journal of Business and Management*, 7(1): 222-22
- McMillan, H.S. 2011. Examining the relationship between work-life conflict and life satisfaction in executives: The role of problem-focused coping techniques. PhD dissertation, University of Tennessee. Available: https://trace.tennessee.edu/utk_graddiss/1000 [Accessed: 12 May 2019].
- Mercurio, Z.A. 2015. Affective commitment as a core essence of organizational commitment: An integrative literature review. *Human Resource Development Review*, 14(4): 389-414.
- Meyer, J.P. and Allen, N.J. 1991. A three-component conceptualization of organizational commitment. *Human Resource Management Review*, 1(1): 61-89.
- Meyer, J.P., Allen, N.J. and Smith, C.A. 1993. Commitment to organizations and occupations: Extension and test of a three-component conceptualization. *Journal of Applied Psychology*, 78(4), 538-551.
- Moore, J.E. 2000a. One road to turnover: An examination of work exhaustion in technology professionals. *MIS Quarterly*, 14(1): 141-168.
- Moore, J.E. 2000b. Why is this happening? A causal attribution approach to work exhaustion consequences. *The Academy of Management Review*, 25(2): 335-349.
- Mukanzi, C.M. and Senaji, T.A. 2017. Work-family conflict and employee commitment: The moderating effect of perceived managerial support. SAGE Open, July-September 2017: 1-12, doi: 10.1177/215824401 7725794.

- Muthén, L.K. and Muthén, B.O. 2017. *Mplus User's Guide* (8th ed.). Los Angeles, CA: Muthén and Muthén.
- Muthuveloo, R. and Rose, R.C. 2005. Antecedents and outcomes of organisational commitment among Malaysian Engineers. *American Journal of Applied Sciences*, 2(6): 1095-1100.
- Naghneh, M.H.K., Tafreshi, M.Z., Naderi, M., Shakeri, N., Bolourchifard, F. and Goyaghaj, N.S. 2017. The relationship between organizational commitment and nursing care behavior. *Electron Physician*, 9(7): 4835-4840.
- Nel, P. and Kotzé, M. 2017. The influence of psychological resources on mineworkers' levels of burnout in a remote and isolated mining town in South Africa. *Extractive Industries and Society*, 4: 885-892.
- Netemeyer, R.G., Boles, J.S. and McMurrian, R. 1996. Development and validation of work-family conflict and family-work conflict scales. *Journal of Applied Psychology*, 81(4): 400-410.
- Pavot, W. and Diener, E. 2008. The Satisfaction with Life Scale and the emerging construct of life satisfaction. *The Journal of Positive Psychology*, 3(2): 137-152.
- Piko, B. and Mihalka, M. 2018. Study of work-family conflict (WFC), burnout and psychosocial health among Hungarian educators. *Central European Journal of Occupational and Environmental Medicine*, 24(1-2): 83-95.
- Pines, A. and Aronson, E. 1988. *Career burnout: Causes and cures*. New York: Free Press.
- Pradhan, R.K., Jena, L.K. and Kumari, I.G. 2016. Effect of work-life balance on organizational citizenship behaviour: Role of organizational commitment. *Global Business Review*, 17(3S): 15S-29S.
- Reichard, R.J., Dollwet, M. and Louw-Potgieter, J. 2014. Development of cross-cultural psychological capital and its relationship with cultural intelligence and ethnocentrism. *Journal of Leadership and Organizational Studies*, 21(2): 150-164.
- Ringle, C.M., Wende, S. and Becker, J.-M. 2015. SmartPLS3. Bönningstedt: SmartPLS (Online). Available: http://www.smartpls.com
 - [Accessed: 6 March 2019].
- Rothmann, S. 2008. Job satisfaction, occupational stress, burnout and work engagement as components of work-related wellbeing. *SA Journal of Industrial Psychology*, 34(3): 11-16.
- Rubab, U. 2017. Impact of work-family conflict on burnout and workplace deviant behaviour: Mediating role of stress. *Jinnah Business Review*, 5(1): 1-10.

- Schimmack, U. 2008. The structure of subjective wellbeing. In Eid, M. and Larsen, R.J. (Eds.). The science of subjective well-being. New York, NY: The Guilford Press.
- Schaufeli, W.B., Martinez, I.M., Pinto, A.M., Salanova, M. and Bakker, A.B. 2002. Burnout and engagement in university students: A cross-national study. Journal of Cross-Cultural Psychology, 33: 464-481.
- Schutte, N., Toppinnen, S., Kalimo, R. and Schaufeli, W.B. 2000. The factorial validity of the Maslach Burnout Inventory-General Survey (MBI-GS) across occupational groups and nations. Journal of Occupational and Organisational Psychology, 73: 53-67.
- Singh, J. and Goolsby, J.R. 1994. Behavioural and psychological consequences of boundary spanning burnout for customer service representatives. Journal of Marketing Research, 94: 558-570.
- Tamini, B.K. and Kord, B. 2011. Burnout components as predictors of job and life satisfaction of university employees. The Indian Journal of Industrial Relations, 47(1): 126-137.
- Taris, T.W., Ybema, J.F. and van Beek, I. 2017. Burnout and engagement: Identical twins or just close relatives? Burnout Research, 5: 3-11.
- Ten Brummelhuis, L.L. and Bakker, A.B. 2012. A resource perspective on the work-home interface: The workhome resources model. American Psychologist, 67(7): 545-556.
- Thanacoody, P.R., Bartram, T. and Casimir, G. 2009. The effects of burnout and supervisory social support on the relationship between work-family conflict and intention to leave: A study of Australian cancer workers. Journal of Health Organisation and Management, 23(1): 53-69.

- Wang, Y. Liu, L., Wang, J. and Wang, L. 2012. Workfamily conflict and burnout among Chinese doctors: The mediating role of psychological capital. Journal of Occupational Health, 54(3): 232-240.
- Wolfram, H.-J. and Gratton, L. 2014. Spillover between work and home, role importance and life satisfaction. British Journal of Management, 25(1): 77-90.
- Wu, G., Wu, Y., Li, H. and Dan, C. 2018. Job burnout, work-family conflict and project performance for construction professionals: The moderating role of organizational support. International Journal of Environmental Research and Public Health, 15: 20 pages. doi:10.3390/ijerph15122869.
- Zhai, Q., Wang, S. and Weadon, H. 2017. Thriving at work as a mediator of the relationship between workplace support and life satisfaction. Journal of Management and Organization, 17 pages. doi: 10.10 17/jmo.2017.62.
- Zheng, J. and Wu, G. 2018. Work-family conflict, perceived organizational support and professional commitment: A mediation mechanism for Chinese project professionals. International Journal of Environmental Research and Public Health, 15(2): 344-366.

Reproduced with permission of copyright owner. Further reproduction prohibited without permission.