

Work-family conflict and work engagement among mothers: Conscientiousness and neuroticism as moderators

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PO Box 524, Auckland Park
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Dates:

Received: 14 Nov. 2012
Accepted: 28 May 2013
Published: 22 July 2013

How to cite this article:

Opie, T., & Henn, C.M. (2013). Work-family conflict and work engagement among mothers: Conscientiousness and neuroticism as moderators. *SA Journal of Industrial Psychology/SA Tydskrif vir Bedryfsielkunde*, 39(1), Art. #1082, 12 pages. <http://dx.doi.org/10.4102/sajip.v39i1.1082>

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Orientation: The study investigates factors that impact work-family conflict and work engagement among working mothers.

Research purpose: The job demand-resources model is utilised to investigate the moderating role of conscientiousness and neuroticism on the relationship between work-family conflict and work engagement.

Motivation for the study: Working mothers are challenged to establish a balance between work and family life. The resulting work-family conflict can negatively affect well-being. It is thus necessary to explore personal factors that relate to work-family conflict, particularly in the South African context.

Research design, approach and method: A quantitative, cross-sectional survey design was used. The sample ($N = 267$) was comprised of working mothers from several organisations. Data was gathered using the work-to-family conflict questionnaire, the Basic Traits Inventory and the Utrecht Work Engagement Scale.

Main findings: The results indicated that work-family conflict negatively predicts work engagement. Conscientiousness positively predicts work engagement, and neuroticism negatively predicts work engagement. A significant interaction effect was found for conscientiousness but not for neuroticism. The findings showed that for participants with high levels of conscientiousness, work engagement decreases significantly more with an increase in work-family conflict than for participants with low levels of conscientiousness.

Practical/Managerial implications: Organisations should consider those individuals who have high levels of conscientiousness and low levels of neuroticism in the selection and placement of employees. In addition, organisations have a responsibility to provide conscientious women, particularly mothers, with adequate support to ensure that work-family conflict does not adversely impact their levels of work engagement.

Introduction

The study is aimed at gaining a greater understanding of factors that influence work engagement among working mothers. The introduction provides a broad overview of the focus of the study.

Problem statement

Key focus of the study

The challenge of balancing the demands associated with work and family life has become increasingly prevalent among women, and especially, among working mothers (Franks, Schurink & Fourie, 2006). In recent decades, women's participation in the workforce has grown considerably (Barker, 2003) and South Africa is no exception to this global phenomenon (Patel, Govender, Paruk & Ramgoon, 2006). In addition to their newly acquired work role, women are however still expected to perform their traditional roles, namely those of mother and wife (Biernat & Wortman, 1991). Women are largely responsible for childcare and domestic duties associated with such roles (Biernat & Wortman, 1991; Lewis-Enright, Crafford & Crous, 2009; MacDonald, 2004). Simultaneously performing the role of an employee, parent, and spouse may result in stress and conflict (Eagle, Icenogle, Maes & Miles, 1998; Theunissen, van Vuuren & Visser, 2003). In fact, pressure to meet these demands makes work-family conflict almost unavoidable (Mauno, Kinnunen & Ruokolainen, 2006).

Background

The phenomenon of work-family conflict has received considerable research attention (Koekemoer & Mostert, 2010; McLellan & Uys, 2009; Mostert, 2008; Theunissen *et al.*, 2003;

Wallis & Price, 2003) owing to the significant impact it may have on the health and well-being of individuals as well as on organisational outcomes (Bellavia & Frone, 2005; Greenhaus & Beutell, 1985; Hassan, Dollard & Winefield, 2010; Mitchelson, 2009; Poelmans, O'Driscoll & Beham, 2005; Rotondo, Carlson & Kincaid, 2003). This study focused on the impact of work-family conflict on a work-related well-being outcome, namely work engagement.

Some studies have found that the experience of work-family conflict is impacted by personality (Bruck & Allen, 2003; Herbst, Coetzee & Visser, 2007; McLellan & Uys, 2009; Noor, 2002; Thomson & De Bruin, 2007). Two personality traits that have been consistently linked to work-family conflict are conscientiousness and neuroticism (Andreassi, 2011; Bruck & Allen, 2003; Wayne, Musisca & Fleeson, 2004). Apart from its relationships with work-family conflict, research has also shown that personality influences work engagement as work engagement correlates positively with conscientiousness and negatively with neuroticism (Jeong, Hyun & Swanger, 2009; Langelaan, Bakker, Van Doornen & Schaufeli, 2006).

In order to determine whether work-family conflict is a predictor of work engagement and to assess the impact of personality factors on these variables, the job demands-resources (JD-R) model (Demerouti, Bakker, Nachreiner & Schaufeli, 2001) was utilised. In their study on work and organisation-based resources as moderators of work-family conflict, well-being, and job attitudes Mauno *et al.* (2006) utilised the JD-R model. More specifically, work-family conflict was conceptualised as a job demand in an expansion of the JD-R model of Demerouti *et al.* (2001) (Bakker, Van Veldhoven & Xanthopoulou, 2010; Mauno *et al.*, 2006). Similarly, in the current study, work-family conflict was conceptualised as a demand and its impact on work engagement was investigated. In addition, personality was conceptualised as a personal resource and was expected to buffer the relationship between work-family conflict and work engagement.

Research objectives

The study set out to answer the following research question: Does personality (neuroticism and conscientiousness specifically) moderate the relationship between work-family conflict and work engagement?

The research aims were thus to:

- determine whether significant relationships exist among the research constructs (that is, work-family conflict, work engagement, neuroticism and conscientiousness)
- determine whether conscientiousness acts as a moderator in the relationship between work-family conflict and work engagement
- determine whether neuroticism acts as a moderator in the relationship between work-family conflict and work engagement

Contribution to the field

By answering the above questions, the study contributes to theory through its use of the JD-R model. Understanding of the role that personality plays in the workplace is also enhanced. Furthermore, the study supplements the database of South African studies that relate to the experiences and well-being of women in the workplace.

What will follow

The next section contains an integrated discussion of the relevant literature. This is followed by a description of the research method, a presentation of the results and a discussion thereof. The last section presents concluding remarks that include discussions of the contribution of the study, limitations as well as recommendations for future research.

Literature review

The job demands-resources model

There are two main assumptions in the JD-R model. The first is that all job characteristics associated with the work environment can be classified into two categories, namely job demands and job resources (Prieto, Soria, Martínez & Schaufeli, 2008; Mauno *et al.*, 2006). Job demands refer to:

...those physical, psychological, social, or organisational aspects of the job that require sustained physical and/or psychological (cognitive and emotional) effort and are therefore associated with certain physiological and/or psychological costs. (Bakker, Demerouti & Verbeke, 2004, p. 86)

Examples of job demands include role overload, unfavourable environmental conditions, emotional demands, time constraints, and high work pressure (Bakker & Demerouti, 2007). Work-family conflict was conceptualised as a job demand in past studies (Bakker *et al.*, 2010; Mauno *et al.*, 2006).

Job resources encompass the social, psychological, physical, and organisational aspects that reduce the costs associated with job demands, facilitate the achievement of work goals, and stimulate personal growth and development (Bakker & Demerouti, 2007). Job resources such as job security, team climate, role clarity, and autonomy are therefore valuable in their own right and essential in combating the negative effects of job demands (Bakker *et al.*, 2004). Several studies have found that job resources are strong predictors of work engagement (Bakker, Schaufeli, Leiter & Taris, 2008; Mauno *et al.*, 2006). The JD-R model was recently expanded to include personal resources (Demerouti & Bakker, 2011). Prieto *et al.* (2008, p. 355) define personal resources as 'people's mental characteristics which reduce the negative impact of demands on psychological well-being'.

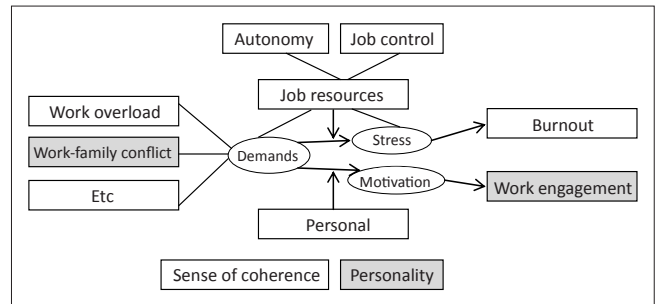
The second assumption of the JD-R model is that it consists of dual psychological processes that may cause either job strain or motivation (Bakker & Demerouti, 2007). According to De Braine and Roodt (2011) the model's ability to understand these two parallel processes that influence employee well-

being constitutes a major strength of the JD-R model. The first process, referred to as the health impairment process, relates to excessive job demands that may deplete an employee's resources and subsequently produce job strain (Prieto *et al.*, 2008). The second process is based on the premise that job resources have a motivational potential that may lead to positive outcomes such as increased job satisfaction and work engagement (Bakker & Demerouti, 2007). Evidence exists that shows support for the dual processes of the JD-R model (Bakker & Demerouti, 2007).

In addition to measuring the main effects of job demands and job resources, the JD-R model predicts that the interaction between job demands and job resources will impact employee motivation and job strain (Demerouti *et al.*, 2001; Bakker & Demerouti, 2007). More specifically, the JD-R model predicts that job resources will buffer the effects of job demands on job strain. Research regarding interaction effects is limited (Mauno *et al.*, 2006; Poelmans *et al.*, 2005) although some studies have found that job resources (such as social support and job control) moderate the relationship between stress and well-being (Bakker *et al.*, 2004; Mauno *et al.*, 2006; Md-Sidin, Sambasivan & Ismail, 2010).

A number of studies have investigated interaction effects of personal resources, but conflicting results were produced (Mäkikangas & Kinnunen, 2003; Mitchelson, 2009; Tremblay & Messervey, 2011; Xanthopoulou, Bakker, Demerouti & Schaufeli, 2007). Conscientiousness, a personal resource, was found to moderate the relationship between work engagement and work interference with family, a construct similar to work-family conflict (Halbesleben, Harvey & Bolino, 2009). Some studies have found that the relationship between job demands and various health-related and organisational outcomes is buffered by personal resources, such as self-efficacy, organisational based self-esteem, and optimism (Mäkikangas & Kinnunen, 2003; Tremblay & Messervey, 2011; Van Yperen & Snijders, 2000). However, these findings were not supported by Xanthopoulou *et al.* (2007) in their study on the role of personal resources (self-efficacy, organisation-based self-esteem, and optimism) as buffers in the relationship between job demands and engagement. In their study on the role of personality in the JD-R model, Bakker *et al.* (2010) found little support for the indirect effects of neuroticism on the relationship between job demands – work-home conflict and work pressure – and health impairment. It is therefore apparent that more research is needed in order to gain an enhanced understanding of the moderating role of personal resources within the JD-R model.

Figure 1 depicts the basic JD-R model. The model was adapted to include the variables utilised in the current study. As can be seen from Figure 1, work-family conflict was conceptualised as a job demand. Moreover, personality constitutes a personal resource and work engagement encompasses the well-being outcome investigated in the current study. Each of the variables will be discussed in the remainder of this chapter.



Source: Adapted from Demerouti, E., Bakker, A.B., Nachreiner, F., & Schaufeli, W.B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology*, 86, 499–512. <http://dx.doi.org/10.1037/0021-9010.86.3.499> Arrows do not indicate causality, but only direction of prediction.

FIGURE 1: The job demands-resources model.

Work-family conflict

As mentioned earlier, previous studies conceptualised work-family conflict as a job demand in an expansion of the JD-R model (Bakker *et al.*, 2010; Mauno *et al.*, 2006). Work-family conflict is defined as 'a form of interrole conflict, in which the demands of work and family roles are incompatible in some respect, so that participation in one role is more difficult because of participation in another role' (Greenhaus & Beutell, 1985, p. 77). The current study focuses on the definition developed by Netemeyer, Boles and McMurrian (1996, p. 401) in which work-family conflict is defined as '...a form of interrole conflict in which the general demands of, time devoted to, and strain created by the job interfere with performing family-related responsibilities'.

Work-family conflict can have an overwhelming impact on the functioning and well-being of individuals, families, organisations, and societies (Hassan *et al.*, 2010). Research has shown that work-family conflict may negatively impact the satisfaction (namely job-, family-, marital-, and life satisfaction), health, and behaviour of an individual in both the work- and family domains (Mitchelson, 2009; Poelmans *et al.*, 2005; Rotondo *et al.*, 2003; Streich, Casper & Salvaggio, 2008). In terms of organisational outcomes, studies have found support for a strong positive relationship between work-family conflict and job burnout (Ahmad, 2010; Reinardy, 2007) and a strong negative relationship between work-family conflict and job satisfaction (Hassan *et al.*, 2010), organisational commitment, and performance (Streich *et al.*, 2008).

The well-being of women may be affected to a greater extent than that of men, given that women experience significantly greater levels of work-family conflict than their male counterparts (McElwain, Korabik & Rosin, 2005; Greenhaus & Parasuraman, 1999). Some studies have found that female employees are more likely to experience strain associated with conflicting roles than men (Poelmans *et al.*, 2005; Rotondo *et al.*, 2003). Moreover, marital status seems to have an effect on the experience of work-family conflict, with married women reporting higher work-family conflict than their unmarried counterparts (Geurts & Demerouti, 2003). Parental status may further impact the experience of work-family conflict, as a number of studies

have shown that work-family conflict is exacerbated among employed mothers (Brown, 2010; Freudenburg & Davidson, 2007; Losoncz & Bortolotto, 2009). Mothers are also more likely to experience work-family conflict as they progress up the corporate ladder, which suggests that assuming a managerial position may further increase work-family conflict (Brown, 2010).

Several negative outcomes, such as stress and burnout, have been linked to work-family conflict. With an increasing emphasis on positive psychology (Seligman & Csikszentmihalyi, 2000), positive outcomes of job characteristics have become a focus point of research in terms of the JD-R model. One of the positive outcomes that received much research attention is work engagement. It was therefore decided to investigate the relationship between work-family conflict and work engagement among working mothers in the current study.

Work engagement

The current study utilises the most recent and commonly used, well-validated definition of work engagement developed by Schaufeli, Salanova, González-Romá & Bakker (2002, p. 74), in which engagement is defined as 'a positive, fulfilling, work related state of mind that is characterised by vigour, dedication and absorption'. According to Bakker and Demerouti (2009) *vigour* involves mental resilience and high energy levels. *Absorption* refers to an attachment and feelings of being engrossed in one's work, as well as total concentration. The final component of work engagement, namely *dedication*, is characterised by feelings of significance, enthusiasm, challenge, and ultimately, a strong involvement in one's work (De Braine & Roodt, 2011). Dedication is considered to be the opposite of cynicism, which is a dimension of burnout (González-Romá, Schaufeli, Bakker & Lloret, 2006). Therefore, work engagement and burnout are often viewed as polar opposites along a continuum comprised of underlying sub-constructs of energy and identification (González-Romá *et al.*, 2006). However, Schaufeli *et al.* (2002) are of the opinion that, although engagement is negatively related to burnout, it is a distinct, independent concept in its own right.

Several studies have explored the relationship between work engagement and resources, and strong support was found for the hypothesis that work engagement is significantly influenced by job resources (Rothmann & Jordaan, 2006; Schaufeli & Bakker, 2004). Furthermore, the hypothesis that job resources predict work engagement, especially when demands are high, has also been supported by research (Bakker, Hakanen, Demerouti & Xanthopoulou, 2007). Literature regarding the relationship between work engagement and demands is limited (Rothmann & Jordaan, 2006). One study found that engaged employees are more able to handle job demands (Schaufeli, Taris & van Rhenen, 2009). However, more research is needed to verify this finding and to better understand the relationship between demands and engagement.

Personality

Personality has been found to have an impact on the extent to which an individual is engaged in his or her work (Langelaan *et al.*, 2006). A study conducted by Jeong *et al.* (2009) on the effects of personality and work engagement found a link between high conscientiousness coupled with low neuroticism (emotional stability) and work engagement. Another study revealed that work engagement is predicted by conscientiousness, emotional stability, and low stress due to demands (Mostert & Rothmann, 2006). A positive relationship between neuroticism and burnout (often considered the opposite of work engagement) has been found in previous studies (Langelaan *et al.*, 2006; Morgan & De Bruin, 2010). Furthermore, several studies have found that personal resources (e.g., proactive personality, and mental and emotional competencies) also act as significant predictors of work engagement (Bakker *et al.*, 2008; Prieto *et al.*, 2008; Robertson & Cooper, 2010; Schaufeli, Bakker & Salanova, 2006). In addition to work engagement, personality has been linked work-family conflict. The current study focused on two of the Big Five personality traits, namely conscientiousness and neuroticism, given that literature shows that conscientiousness and neuroticism are commonly associated with work-family conflict (Andreassi, 2011; Bruck & Allen, 2003; Wayne *et al.*, 2004).

Conscientiousness

Conscientiousness refers to the degree of effectiveness and efficiency with which a person plans, organises, and carries out tasks (Taylor & De Bruin, 2006) and includes an individual's degree of self-discipline, control, order, dutifulness, effort, prudence, and need for achievement (Maltby, Day & Macaskill, 2010; Taylor & De Bruin, 2006). Digman (1990) describes a conscientious person as dependable, hardworking, determined, disciplined, orderly, and strong willed. Moreover, conscientiousness has been associated with enhanced time- and stress management skills (Westerman & Simmons, 2007).

Evidence shows that conscientiousness is a predictor of health and well-being outcomes. Several studies have found a negative relationship between conscientiousness and work-family conflict (Smoot, 2005; Wayne *et al.*, 2004). Bruck and Allen (2003) are of the opinion that, as a result of their planning and organising skills, conscientious individuals are less likely to experience work-family conflict. In contrast, individual initiative (a component of personality theoretically similar to conscientiousness) was found to be positively related to job stress and work-family conflict (Bolino & Turnley, 2003). Literature supports the main effect of conscientiousness on work engagement (Jeong *et al.*, 2009; Mostert & Rothmann, 2006). In terms of interaction effects, Halbesleben *et al.* (2009) found that conscientiousness moderates the relationship between work interference with family and work engagement by acting as a buffer. Witt and Carlson (2006) found an interaction effect for conscientiousness, with higher family-work conflict being associated with lower levels of job performance for those participants who had high levels of conscientiousness.

Neuroticism

Neuroticism refers to 'a person's emotional stability and the general tendency to experience negative affect in response to their environment' (Taylor & De Bruin, 2006, p. 4). Neurotic individuals have the tendency to be easily upset and are sensitive to criticism. They often experience feelings of guilt, sadness, hopelessness, worry and tension, and tend to be emotionally volatile (Maltby *et al.*, 2010; Taylor & De Bruin, 2006). Individuals with low levels of neuroticism are emotionally stable, even-tempered, calm, secure, well-adjusted, and tolerant of stress (Burger, 2004; Costa & McCrae, 1992).

Several studies have found a positive relationship between neuroticism and work-family conflict. Current literature shows that neuroticism has main and moderating effects on well-being outcomes. In terms of main effects, neuroticism is positively related to work-family conflict (Bryant, 2010; Smoot, 2005; Wayne *et al.*, 2004). Another study found a negative relationship between emotional stability (low neuroticism) and the experience of interpersonal stressors (Dijkstra, Van Dierendonck, Evers & De Dreu, 2005). Moreover, negative affectivity (a component of neuroticism) was found to significantly relate to work-family conflict (Bruck, 2003). In terms of moderator effects, Van den Berg and Feij (2003) found evidence to support the moderating role of emotional stability (low neuroticism) in the relationship between job characteristics (demands and resources) and work behaviour.

The literature shows a number of studies that have explored the negative outcomes of work-family conflict, but fewer studies that have investigated the impact of work-family conflict on positive work-related well-being outcomes such as work engagement. Similarly, several studies have investigated the role of personality and personal resources on work-related well-being outcomes. However, very little research has been conducted in terms of the moderating role of personality in the relationship between job characteristics and well-being outcomes. Furthermore, the majority of studies occurred in countries other than South Africa. The current study therefore aims to supplement the existing database in terms of the role of two personality traits, namely conscientiousness and neuroticism, in the relationship between work-family conflict and work engagement among working mothers in South Africa.

Research design

Research approach

A quantitative, cross-sectional, survey design was utilised for this study.

Research method

Research participants

Non-probability sampling was employed to obtain participants. In some instances, questionnaires were sent out to all employees on the participating organisations'

databases. Participants represented the following industry sectors: multimedia, finance and health. All participants were therefore working individuals. For the purposes of this study only working women with children were included in the final sample. To enlarge the sample, hard copies of the questionnaire were also distributed to working mothers through snowball sampling. Participants thus represented a variety of work sectors. Information regarding the latter was not requested from participants.

Measuring instruments

A biographical questionnaire obtained information regarding gender, ethnicity, home language, marital status, number of children, age, and level of education. In addition, participants were requested to indicate whether they worked full-time or part-time and whether they were self-employed or worked for an employer. In terms of the measurement of the research constructs, the following instruments were employed.

Work-to-Family Conflict Questionnaire (Netemeyer *et al.*, 1996): This questionnaire measures the extent to which work demands interfere with family life. It consists of a five-point Likert-type scale with responses ranging from *strongly agree* to *strongly disagree*. The questionnaire is comprised of five items. Sample items include 'My job produces strain that makes it difficult to fulfil family duties' and 'The demands of my work interfere with my home and family life'. According to Netemeyer *et al.* (1996), the Cronbach alpha coefficient was .86 which reveals satisfactory internal consistency reliability. In addition, the instrument showed high internal consistency reliability in a South African study on time-based constraints and work-family conflict among working mothers, where the Cronbach alpha coefficient was .92 (Braghin, 2009).

Basic Traits Inventory (BTI) (Taylor & De Bruin, 2006): The BTI measures the Big Five factors of personality. The BTI was developed in South Africa and evidence exists that supports its cross-cultural validity (Taylor & De Bruin, 2006). The shortened 60-item version was utilised in this study (Taylor & De Bruin, in press). Participants are expected to respond to a five-point Likert-type scale with responses ranging from *strongly disagree* to *strongly agree*. A sample item for Conscientiousness involves 'I plan tasks before doing them' and a sample item for Neuroticism includes 'I find it difficult to control my feelings'. Internal consistency reliability is satisfactory, as alpha coefficients were overall higher than 0.80 for all five personality factors (Taylor & De Bruin, in press). The current study utilised the Neuroticism and Conscientiousness sub-scales.

Utrecht Work Engagement Scale (UWES-9) (Schaufeli *et al.*, 2002): Work engagement was measured using the nine-item version of the Utrecht Work Engagement Scale. Globally, UWES is a valuable tool for the measurement of work engagement as it has been validated in several countries around the world, including South Africa (Bakker & Demerouti, 2008; Storm & Rothmann, 2003). The nine-item version of UWES (UWES-9) measures the three dimensions

of work engagement, namely vigour (VI), dedication (DE), and absorption (AB), using three items for each dimension (Bakker & Demerouti, 2008). Each item measures a dimension using a seven-point scale with 0 = *no, that is not correct* and 6 = *yes, that is correct*. Sample items include: 'At my work, I feel bursting with energy' (VI), 'My job inspires me' (DE), and 'I am immersed in my work' (AB).

The current study utilised a single score of work engagement, as Schaufeli and Bakker (2003) are of the opinion that a total score may be more valuable in empirical studies due to the high correlations between dimensions. Moreover, in a study conducted by Sonnentag (2003), a one-factor model was found to yield a better fit of the data than a three-factor model. The use of a one-factor model was validated in a South African study conducted by Storm and Rothmann (2003) on the psychometric analysis of the Utrecht Work Engagement Scale in the South African Police service.

Research procedure

Several organisations were approached by the researcher and requested to participate in a study on the well-being of women in the workplace. The current study formed part of a larger study on well-being at work. The organisations who agreed to partake in the study sent their employees a link to the online format of the questionnaire via electronic mail. As mentioned, hard copies were also distributed. Participants were informed of the voluntary nature of the research. They were also assured that results would be dealt with anonymously and confidentially. Only the researchers were privy to the data. Once all the data were captured, a sample of 984 participants was realised. However, this sample included male participants as well as women with no children. The data was thus refined to include only women with children, yielding a sample size of 339 participants. After removal of cases with missing values, the final sample consisted of 267 participants.

Statistical analysis

Correlations were calculated to determine whether significant relationships existed between the variables, and where such relationships existed, the strength and the direction of the relationships were determined. Moderated hierarchical multiple regressions were conducted to test the hypotheses.

Two separate moderated hierarchical regressions were conducted, one each for conscientiousness and neuroticism. In the first step of each regression, demographic variables (marital status, age, level of education, and number of children) were entered in order to control for these variables.

Categorical control variables (marital status and educational status) were collapsed into two categories in each case. In the second step, work-family conflict was entered. In the third step the personality variable was entered (conscientiousness or neuroticism). Following this, the product term (Work-family conflict $\times$ Conscientiousness and Work-family conflict $\times$ Neuroticism) was added in the fourth step. A significant change in R^2 in the fourth step indicated that the personality variable moderated the relationship between work-family conflict and the dependent variable. A relaxed criterion of $p < .10$ (Aguinis, 1995; Aiken & West, 1991) was used to determine significant interaction effects.

Results

Description of sample

The total sample was comprised of 267 working mothers. The mean age of the participants was 39.03 years ($SD = 9.63$). In terms of number of children, 38.2% of the participants had one child, 45.3% had two children, and 16.5% had 3 or more children. With regards to marital status, 59.2% of the participants were married, 14.2% were single, 12.7% were engaged or in a relationship, and the remainder were divorced, separated, or remarried. The majority of the sample was White mothers (53.9%), followed by 23.6% Black mothers, 16.5% Coloured mothers, and 5.2% Indian mothers. Participants with a grade 12 education dominated the sample (62.9%), followed by a Bachelors degree/diploma/BTech (30.3%). A small percentage of participants possessed an honours, master's or doctoral degree. The sample was dominated by participants who worked full-time (95.5%) and participants who worked for an employer (96.3%).

Descriptive statistics

Table 1 illustrates the mean, standard deviation, Cronbach alpha coefficient, and Pearson's intercorrelation of variables.

Table 1 indicates that work-family conflict displayed a significant negative correlation with work engagement ($r = -.19; p < .01$). Neuroticism displayed a significant negative correlation with work engagement ($r = -.20; p < .01$) and a significant positive correlation with work-family conflict ($r = .23; p < .01$). Conscientiousness displayed a significant positive correlation with work engagement ($r = .34; p < .01$) and a negative significant correlation with neuroticism ($r = -.23; p < .01$).

Regression analyses

Moderated hierarchical regression analyses were performed to investigate the research questions. The data were analysed

TABLE 1: Descriptive statistics and Pearson's intercorrelation of variables.

Measures	M	SD	α	1	2	3
1. Work engagement	38.11	10.44	.93	1	–	–
2. Work family conflict	12.94	5.40	.96	-.19**	1	–
3. Neuroticism	30.89	9.70	.92	-.20**	.23**	1
4. Conscientiousness	48.53	6.20	.89	.34**	-.03	-.23**

M, mean; SD, standard deviation; α , alpha value.
*, $p < .05$

to determine whether the assumptions of multiple regression were satisfied. To address the issue of multicollinearity, scores were centred (Aiken & West, 1991) and the correlations of the variables, Tolerance and VIF were inspected. The normal probability plot (P-P) of the regression standardised residual showed no major deviations from normality, and the Scatterplot of the standardised residuals indicated no violation of the assumptions. Mahalanobis distances were inspected to check for outliers, and Cook's Distance was examined to ensure that no cases were problematic. Thus, there was no violation of the assumptions of outliers, normality, linearity, homoscedasticity, or independence of residuals.

Two moderated hierarchical regressions were performed. The first regression analysis was aimed at determining whether conscientiousness moderates the relationship between work-family conflict and work engagement. The second regression analysis was aimed at determining the interaction effects of neuroticism on the relationship between work-family conflict and work engagement. As mentioned, categorical control variables (marital status and educational status) were collapsed into two categories in each case.

Work-family conflict, work engagement, and conscientiousness

The first regression analysis was aimed at determining interaction effects for conscientiousness in relation to work engagement. Table 2 shows the results of the moderated hierarchical regression analysis.

Table 2 indicates that in the first step, demographic variables, including number of children, education, marital status, and age, were controlled for. The total variance explained by these variables was 5.1% [$R^2 = 0.051$, $F(4, 262) = 3.53$; $p < .01$]. According to the unstandardised coefficients, age was the only variable that made a statistically significant contribution ($b = .17$; $t = 2.32$; $p < .05$). In the second step, work-family conflict was entered. The result was significant, and accounted for an additional 4.3% of variance [$\Delta R^2 = 0.04$, $\Delta F(1, 261) = 12.33$; $p < .01$]. In the third step, conscientiousness was entered, which accounted for an additional 9.2% of total variance [$\Delta R^2 = 0.09$; $\Delta F(1, 260) = 29.27$; $p < .001$]. The product term *WorkFamilyConflictXConscientiousness* was entered in step

four. The result was statistically significant [$\Delta R^2 = 0.01$, $\Delta F(1, 259) = 3.79$; $p < .10$] and accounted for an additional 1.2% of the variance. Conscientiousness therefore moderates the relationship between work-family conflict and work engagement. The final model was significant [$R^2 = 0.20$; $F(7, 259) = 9.10$; $p < .001$] and explained 19.7% of variance. The interaction effect is illustrated in Figure 2.

From Figure 2 it can be concluded that, irrespective of the extent of work-family conflict, the work-engagement of those with high levels of conscientiousness is higher than for those with medium levels of conscientiousness. Those with medium levels of conscientiousness, in turn, have higher levels of work engagement than those with low levels of conscientiousness. Similarly, irrespective of the extent of conscientiousness, those with low levels of work-family conflict are, on average, more engaged in their work than those with medium levels of work-family conflict, while those with medium levels of work-family conflict are more engaged in their work than those with high levels of work-family conflict.

There is, however, a significant interaction between the extent of work-family conflict and the extent of conscientiousness in terms of work engagement. Figure 2 shows that, for those with a high level of conscientiousness, the decrease in work engagement that is associated with increased work-family conflict is more prominent than the corresponding decrease

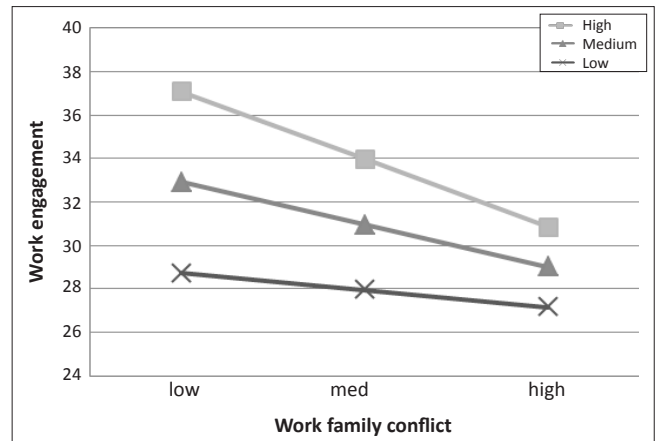


FIGURE 2: Regression analysis of the effect of work-family conflict on work engagement at three levels of conscientiousness.

TABLE 2: Hierarchical regression analysis predicting work engagement from work-family conflict.

Variable	Step 1	Step 2	Step 3	Step 4
Unstandardised regression coefficients (b)	–	–	–	–
Constant	29.83	29.18	31.15	30.74
Number of children	1.51	1.84**	1.67**	1.55
Age	0.17**	0.16**	0.11	0.12
Education	-1.16	-1.23	-0.76	-0.84
Marital status	-0.35	0.18	0.02	0.04
Work Family Conflict	–	-0.41***	-0.39***	-0.36***
Conscientiousness	–	–	0.52****	0.49****
Work family conflict x con	–	–	–	-0.04*
Model R^2	.05***	.09***	.19****	.20*
Model ΔR^2	.05***	.04***	.09****	.01*

R^2 , proportion variance explained.
*, $p < .1$; **, $p < .05$; ***, $p < .01$; ****, $p < .001$

for those with medium or low levels of conscientiousness. Indeed, for those with low levels of conscientiousness, only a slight decrease in work-engagement is associated with increased levels of work-family conflict. It can therefore be concluded that a high level of conscientiousness does not buffer the negative impact of work-family conflict, but, in fact, exacerbates it.

Work-family conflict, work engagement, and neuroticism

The second regression analysis was aimed at determining main and interaction effects for neuroticism in relation to work engagement. Table 3 shows the results of the moderated hierarchical regression analysis.

Table 3 shows that in the first step, demographic variables, including number of children, education, marital status, and age were controlled for. The total variance explained by these variables was 5.1% [$R^2 = 0.051$, $F(4, 262) = 3.53$; $p < .01$]. According to the unstandardised coefficients, age was the only variable that made a statistically significant contribution ($b = 0.17$; $t = 2.32$; $p < .05$). In the second step, work-family conflict was entered. The result was significant and accounted for an additional 4.3% of variance [$\Delta R^2 = 0.04$, $\Delta F(1, 261) = 12.33$; $p < .01$]. In the third step, neuroticism was entered, which accounted for an additional 2.1% variance and was statistically significant [$\Delta R^2 = 0.02$; $\Delta F(1, 260) = 6.22$; $p < .05$]. In the fourth and final step, the product term *WorkFamilyConflictXNeuroticism* was entered. This accounted for an additional 0.2% variance [$\Delta R^2 = 0.00$; $\Delta F(1, 259) = .59$; $p > .10$]. However this finding was not significant, thus neuroticism does not moderate the relationship between work-family conflict and work engagement. As both the second and third steps of the regression was significant, work-family conflict and neuroticism both significantly predict work engagement.

Discussion

The main aim of this study was to determine the moderating role that conscientiousness and neuroticism play in the relationship between work-family conflict and work engagement. The results indicated that work-family conflict negatively predicted work engagement. Conscientiousness positively predicted work engagement, and neuroticism

negatively predicted work engagement. A significant interaction effect was found for conscientiousness but not for neuroticism.

Work-family conflict and work engagement

The results of the current study confirm that work-family conflict is a significant predictor of work engagement, with higher levels of work-family conflict correlating with lower levels of work engagement. This finding is consistent with existing literature, as previous studies found a negative relationship between work-family conflict and various organisational outcomes, namely job satisfaction, organisational commitment, and performance (Allen, Herbst, Bruck & Sutton, 2000; Hassan *et al.*, 2010; Streich *et al.*, 2008). More specifically, other studies have found a significant positive relationship between work-family conflict and burnout (Ahmad, 2010; Reinardy, 2007). This finding is especially relevant as burnout is negatively related to work engagement (Schaufeli *et al.*, 2002).

As previously mentioned, engaged employees experience high energy levels, feelings of being engrossed in their work, enthusiasm, commitment, dedication, and total concentration (Bakker & Demerouti, 2008; De Braine & Roodt, 2011; Rothmann & Rothmann, 2010). It was therefore expected that individuals experiencing conflict as a result of incompatible demands in their work and family lives may be less engaged in their work. From the results of the current study, it can be concluded that the stress associated with work-family conflict may prevent individuals from achieving optimal concentration and dedicating the necessary time and energy to their work roles. Essentially, work-family conflict is likely to reduce the extent to which an individual is engaged in his or her work.

Work-family conflict, work engagement and conscientiousness

The current study found that conscientiousness is a significant predictor of work engagement. This result was expected, as several studies have found that personality influences the extent to which individuals are engaged in their work (Langelaan *et al.*, 2006). More specifically, conscientiousness has been shown to significantly predict work engagement (Jeong *et al.*, 2009; Mostert &

TABLE 3: Hierarchical regression analysis predicting work engagement from work-family conflict, neuroticism and WorkFamilyConflictXNeuroticism.

Variable	Step 1	Step 2	Step 3	Step 4
Unstandardised regression coefficient (<i>b</i>)	–	–	–	–
Constant	29.83	29.18	29.37	29.12
Number of children	1.51	1.84*	1.94*	1.86*
Age	0.17*	0.16*	0.14*	0.15*
Education	-1.16	-1.23	-0.39	-0.42
Marital status	-0.35	0.18	0.00	0.08
Work Family Conflict	–	-0.41**	-0.33**	-0.34**
Neuroticism	–	–	-0.17*	-0.18*
WorkFamilyConflictXNeu	–	–	–	.01
Model R^2	.05**	.09**	.12*	.12
Model ΔR^2	.05**	.04**	.02*	.00

R^2 , proportion variance explained.

*, $p < .05$; **, $p < .01$; ***, $p < .001$

Rothmann, 2006). A previous study found that work engagement is strongly influenced by resources (Schaufeli & Bakker, 2004). Resources may constitute job resources (e.g. autonomy) or personal resources (e.g. personality) and evidence exists in current literature which shows that personal resources act as significant predictors of work engagement (Schaufeli *et al.*, 2006; Robertson & Cooper, 2010).

A previous research finding indicated that conscientiousness moderates the relationship between work interference with family and work engagement by acting as a buffer (Halbesleben *et al.*, 2009). Conscientious individuals are described as disciplined, dependable, self-controlled, orderly, organised, and strong-willed (Digman, 1990; Taylor & De Bruin, 2006) and effective in managing time and stress (Westerman & Simmons, 2007). Thus, Bruck and Allen (2003) argue that, although conscientious individuals may be more involved in their roles, their planning and organising skills are likely to reduce the extent to which work-family conflict occurs. As a similar finding was expected, the finding of the current study in this regard was surprising.

Although a significant interaction effect was found for conscientiousness on the relationship between work-family conflict and work engagement, this was not a buffering effect. It was found that an increase in work-family conflict is more strongly associated with a decrease in work engagement for participants with high levels of conscientiousness than for individuals with low levels of conscientiousness. Rather than acting as a buffer, conscientiousness exacerbates the negative impact of increased work-family conflict on work engagement. Although unexpected, this finding is in line with a previous study conducted by Witt and Carlson (2006) in which the negative relationship between family-work conflict and job performance was more prominent for individuals with high rather than low levels of conscientiousness. The negative effects of conscientiousness were further illustrated in a study conducted by Bolino and Turnley (2003) in which individual initiative (a component of personality theoretically similar to conscientiousness) was positively associated with role overload, job stress and work-family conflict. Bolino and Turnley (2003) argue that women emphasise their family role more than men and thus find it more challenging to make a trade-off between work and family responsibilities. The results of their study revealed that gender plays a moderating role in the relationship between individual initiative and work-family conflict, with a stronger relationship existing for women than for men (Bolino & Turnley, 2003).

Two factors seem to combine to render women particularly vulnerable to the negative effects of work-family conflict. Firstly, women still carry the bulk of household responsibilities and place a greater emphasis on their family roles (Franks *et al.*, 2006; MacDonald, 2004). Secondly, conscientious individuals tend to be hard-working and are likely to invest considerable time and effort into their work role. It thus seems plausible that work-family conflict will adversely impact the work engagement of women to a greater extent for those with high levels of conscientiousness, as opposed

to those with low levels of conscientiousness. An additional perspective is that conscientiousness may be an antecedent of work-family conflict (Bruck, 2003), therefore causing those with high levels of conscientiousness to perceive their work-family conflict as more severe.

Work-family conflict, work engagement, and neuroticism

The current study found that neuroticism negatively predicts work engagement. The finding regarding the main effects of neuroticism on work engagement was expected, as a previous study found that work engagement is linked to low neuroticism (Jeong *et al.*, 2009). Another study found that work engagement is characterised by low neuroticism when combined with high levels of mobility and extraversion (Langelaan *et al.*, 2006). Furthermore, literature shows that neuroticism is positively related to burnout (a well-being outcome often viewed as the opposite of work engagement) (Langelaan *et al.*, 2006; Morgan & De Bruin, 2010).

In terms of interaction effects, the current study found no support for the moderating role of neuroticism on the relationship between work-family conflict and work engagement. This was unexpected as a previous study found that low neuroticism moderates the relationship between job characteristics (demands and resources) and work behaviours (including work stress, job satisfaction, work self-efficacy, and propensity to leave) (Van Den Berg & Feij, 2003). Furthermore, it was expected that neuroticism would moderate the relationship between work-family conflict and work engagement owing to the fact that neurotic individuals tend to be emotionally unstable, anxious, and intolerant of stress (Costa & McCrae, 1992; Maltby *et al.*, 2010). It was thus expected that those with high levels of neuroticism would experience difficulty in managing the conflicting demands associated with work and family life, and subsequently struggle to remain engaged in their work.

Practical implications

The study contributes to the expansion of information available on work-family conflict among South African working mothers. It also contributes to theory through the validation of aspects of the JD-R model. In terms of personality factors, the study shows that individuals with high levels of conscientiousness and low levels of neuroticism are significantly more engaged employees than those with low levels of conscientiousness and high levels of neuroticism. This should be taken into account in the selection and placement of employees. The study also confirmed the negative effect of work-family conflict on work engagement. More significantly, work-family conflict is particularly severe for those women who are most desirable to organisations, i.e. those with high levels of conscientiousness. This finding has implications for both working mothers as well as organisations. It is advisable that working mothers should be aware of the potentially negative effects of work-family conflict so that they can seek support at home as well as at work. From an organisational perspective, organisations

should attempt to offer their employees adequate and appropriate support (for example, flexi-time and on-site childcare) so as to reduce the negative effects associated with work-family conflict amongst valuable employees.

Limitations of the study

The current study has some limitations. As a cross-sectional research design was utilised, it did not allow for the measurement of changing variables over time, which made it difficult to determine causal relationships between variables. A further limitation involves the use of self-report questionnaires, as they are often associated with method variance, which may impact the reliability and validity of a study (Van der Colff & Rothmann, 2009).

Recommendations

Future research should include all working women and not only working mothers. Moreover, a comparative study between males and females could be done. A further recommendation is that the impact of the other personality traits should be investigated, for example, extraversion and agreeableness and social support at work and at home on the relationship between work-family conflict and work engagement. The impact of work-family conflict on negative outcomes such as burnout or emotional exhaustion can also be explored.

Conclusion

The aim of this study was to determine the moderating role that personality plays in the relationship between work-family conflict and work engagement among working mothers. A quantitative research design was employed. Data analysis conducted by means of moderated hierarchical regression analysis indicated that consciousness moderated the relationship between work-family conflict and work engagement. No such moderation was found for neuroticism. The study contributes to both theory related to well-being at work as well as an enhanced practical understanding of the experiences of women in the workplace.

Acknowledgements

Competing interest

The authors declare that they have no financial or personal relationship(s) which may have inappropriately influenced them in writing this article.

Author contributions

T.O. (University of Johannesburg) was the main contributor to the literature review and the results sections; significant contributions in all other sections. C.M.H. (University of Johannesburg) conceptualised the project, contributed significantly to the analysis of data and the discussion; and also contributed to all other sections.

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